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CONTENTS

- | | | | |
|-----|--|---|-----|
| 1. | Management of Working Capital | Abdul Hakim | 1 |
| 2. | Educational Value of Dance | Mantri Madan Mohan | 10 |
| 3. | Secondary School Students Attitude Towards Vocational Education | Kandipalli Ramakrishna Rao | 22 |
| 4. | Emotional Intelligence and Attitude Towards Science | C.Daisy Nambikkai | 33 |
| 5. | Nuakhai: The Agrarian Festival in West Odisha | Dina Krishna Joshi | 46 |
| 6. | Socio - Economic Condition of Women Police | S. Srinivasan and P.IIango | 54 |
| 7. | Intellectual Property Contravention and Unfair Competition Consideration in Jewellery Industry | Neeru Jain | 67 |
| 8. | Regeneration in Braking System | Himanshu Sahani , Jag Mohan Singh and Deependra Singh | 79 |
| 9. | Meta - Analysis of Dropout Researches and Their Implications | Mohd Abid Siddiqui and Afa- Dul Mujiaba | 85 |
| 10. | Hiding Text in to Image Using Tri Pixel Difference Value Method | Yogesh R. Chikane, Manoj Kumar Rawat and Pramoda Patro | 99 |
| 11. | Horticulture Practices in The Tribal Areas of Visakhapatnam District in Andhra pradesh | Mullu Ramana | 111 |
-

| | |
|--|-----|
| 12. Gandhian Model for Industrial Development K.Kiran and K. Ravindra | 128 |
| 13. Academic Progression Through Ghatikas – Impetus to Education During Kalyani Chalukyas – With Special Reference to Nagavi Ghatika (Part -1) Lingaraja and Lakshmi | 134 |
| 14. Social Exclusion of Dalits in Indian Society After Independence Also G.Balaswamy and D.Bhargavi | 140 |
| 15. Exchange Traded Funds: Taxable Investment Option for Investors G.Suresh and P. Veni | 157 |
| 16. Production of Diesel - Like Fuel Obtained from Waste Lubrication Oil and Its Physicochemical Properties Beena Mishra , Juhi Sharaf and R B Sharma | 171 |
| 17. Reproductive Life of Malas in The Select Mandals of Chittoor District, Andhra Pradesh Enamala Ramesh Babu | 182 |
| 18. Performance of India's Computer Software Industry G. V.Vijayasri | 199 |
| 19. Psycho – Dynamics of Women in The Postmodern Literature G.V.V.L. Rajani Priya | 214 |
| 20. Legal Framework for Combating Corruption in India : An Analysis Srinivasa Rao Gochipata | 222 |
| 21. Development of Panchayet Raj in India and Its Objectives Shazad Ahmad | 247 |
| 22. An Analytical Study of Teaching of Mathematics at Elementary Level in Punjab Meenakshi and Mohit Puri | 252 |
| 23. The Impact of Globalization on Land Use Pattern : A Study in Three Different Localized Areas Bollikonda Veeraiah | 273 |

| | |
|--|-----|
| 24. Dual Roleship Women Administrators at Decision Making Level | 287 |
| G.V.V.L. Rajani Priya | |
| 25. Native and Indigenous Cultures : Preservation in The Globalization Era | 291 |
| R.L. Madhavi | |
| 26. Marriage Practices of Northern Andhra Tribes | 297 |
| G. Posi Venkatesh | |
| 27. The Contribution Of Abhinavagupta In Kashmir Shaivism | 303 |
| Pardeep | |

Dr. K.VICTOR BABU

Editor-in-Chief



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Editorial

The cooperation and the committed contribution of one and all in enabling our journal IJMER to complete one successful year of operation are deeply appreciated. I am extremely happy for this great achievement.

As we moved along, the papers and articles picked up the requisite applied strength and I sincerely congratulate the subscribers for this innovative effort.

Our journey started with a humble beginning and we gained strength enroute. This facilitated coverage of different subjects exposing the readers to different areas of learning. We moved with times and made relevant changes basis the guidance and advice of the Members of the Editorial Board.

I whole heartedly thank you.

(Dr. Victor Babu Koppula)

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Vice-Chancellor's Message

To

Dr. K. Victor Babu
Editor-in-Chief
International Journal of Multidisciplinary
Educational Research
Visakhapatnam



International Journal of Multidisciplinary Educational Research's contribution has been significant. It spreads its importance and indeed the efforts of one and all are commendable.

IJMER's goals are met as can be seen from its one year of successful performance.

It is hoped, that the journal will continue to uphold its values and provide holistic views of all aspects of knowledge, a distinct requirement in the current times globally.

My best wishes to the Chief Editor Dr. Koppula Victor Babu and I am optimistic that the Journal will continue to provide an excellent service in the coming years. My hearty congratulations to you.

(Prof. G.S.N. Raju)

Vice-Chancellor
Andhra University



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GREETINGS

To
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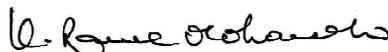
I am very happy to hear that International Journal of Multidisciplinary Educational Research (IJMER) has completed one year since its inception (April 2012).

The journal's focus is on addressing pertinent human issues and problems, in turn making this worldly life peaceful and harmonious.

The readers are tremendously benefited from the contributions of many scholars and academicians globally.

I appreciate your noble work and I wish that the Journal should continue to achieve wide circulation.

My greetings to you for spearheading publication of this journal with contemporary relevance.


(K. RAMA MOHANA RAO)



MANAGEMENT OF WORKING CAPITAL

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Introduction:

Working capital commonly refers to the excess of current assets over current liabilities.

Working Capital is as important in a business firm as blood in a human life. Each and every business concern should have adequate funds to meet out day to day expenses and to finance current assets, debtors, sociable and inventories. The funds tied up in current assets are known as working capital funds. Proper management of working capital is necessary to maintain both liquidity and profitability; Liquidity is a necessary for the survival of the firm. While comparing liquidity with profitability, liquidity gets higher priority. No firm earn service if it has no liquidity, A firm having not profit may be treated as sick but not having liquidity may die over a period of time. The working Capital management involves deciding upon the amount and composition, of current assets and how to finance these assets. Working capital management has become an important tool to judge the performance of a business.

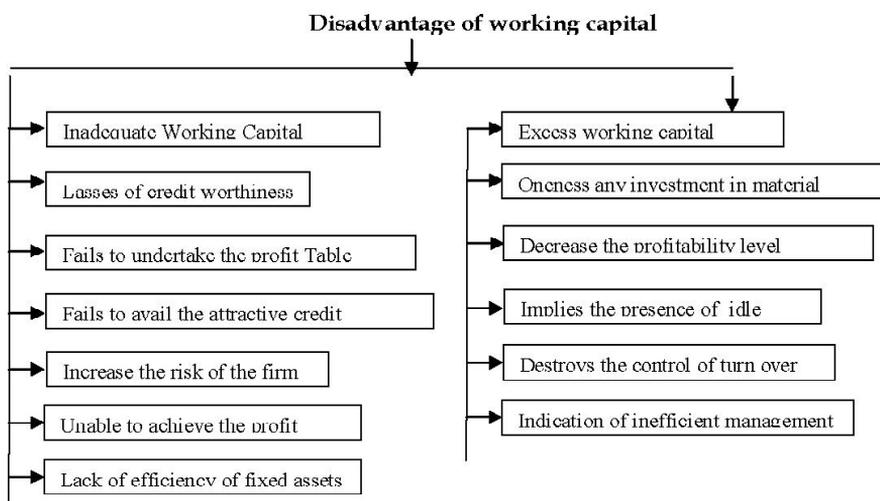
Concept:

There are two concepts of working capital- one is quantitative and the other is qualitative in nature. According to qualitative concept the term working capital refers to the total of all current assets. The view was supported by economists like Marshall, Keynes, Baker field and Adam Smith. In the words of Adam Smith the goods of the merchant yield him no revenue or profit till he sells them for goods, His capital is continuously going from him in one shape and resuming to him in another and it is only by means of such circulation or successive exchanges, that it can yield him



any profit, such capital. What we call current assets, smith called" circulating capital. In this concept the current assets are considered to be gross working capital.

The second concept of working capital is quantitative in nature Goth Mann stated that qualitative concept explains working capital as" Excess of current assets over current liabilities" According to the concept current assets must exceed current liabilities and then only then can be working capital. On the other hand if the current liabilities exceed the current assets. There is no working capital but there is a working capital deficit.



Disadvantage of Adequate/Excess working capital

Inadequate and Excess Working Capital

Inadequate working capital means that the enterprise does not have sufficient funds for financing its daily business activities, which ultimately results in production interruptions and reduced productivity.

Disadvantages of Inadequate Working Capital

- The firm loses its credit worthiness and goodwill as it fails to honor its current liabilities.
- The firm with inadequate working capital fails to undertake the



profitable projects because the firm cannot avail the favorable opportunities.

- The firm also fails to avail the attractive credit opportunities due to inadequacy of working capital.
- Inadequate working capital increases the risk of the firm.
- The firm cannot achieve its profit targets with inadequate working capital.
- Fixed assets cannot be efficiently utilized or maintained due to inadequacy of working capital.

Disadvantages of Excess Working Capital

- Due to excessive capital unnecessarily invested in material. Wastage of material, misuse or stolen of material do not add to the profitability of the company.
- Excessive inventories purchase by the company not to increase in profitability level of company.
- Excessive working capital implies the presence of idle funds which earn no profit for the firm. So rate of return lower. Lower dividend rate reduce the market value of shares.
- Excessive working capital often destroys the control of turnover ratio.
- Excessive working capital is an indication of inefficient management of the company.

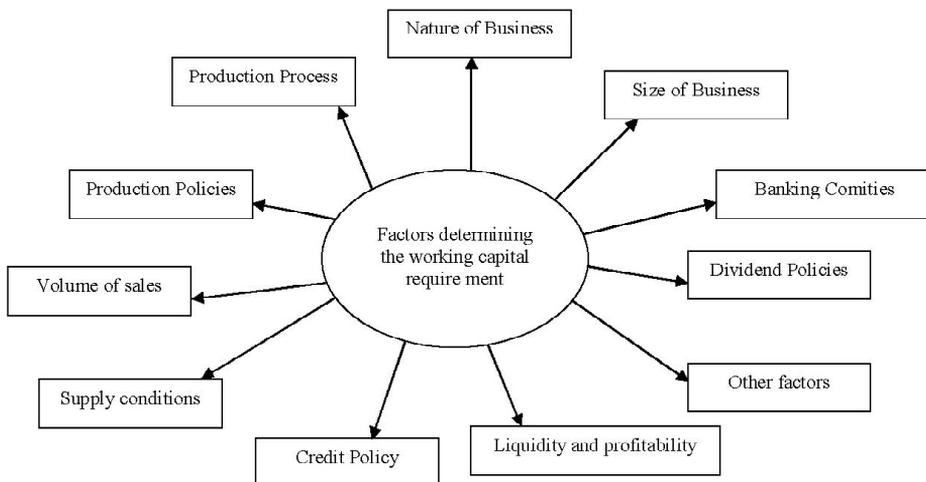
Advantages of Adequate Working Capital

- Adequate working capital can raise the requisite funds from market, borrow short term credit from banks and purchase inventories of raw material etc.
- Adequate working capital is maintained in the business the firm can successfully carry out its operations, research and development programmes etc.
- Adequate working capital creates a sense of security and confidence.



- Availability of adequate working capital is essential for maintaining the solvency of the company.
- Adequate of working capital, a company can avail the benefits of favorable opportunities.
- Adequate working capital enables a company to avail the advantages of cash discount by making cash payment to the suppliers for purchase of material.
- Adequate working capital enables a company to declare and distribute dividend to shareholders.

Factors Determining the Working Capital Requirements



Working capital requirement affects many internal and external factors. These factors are following:

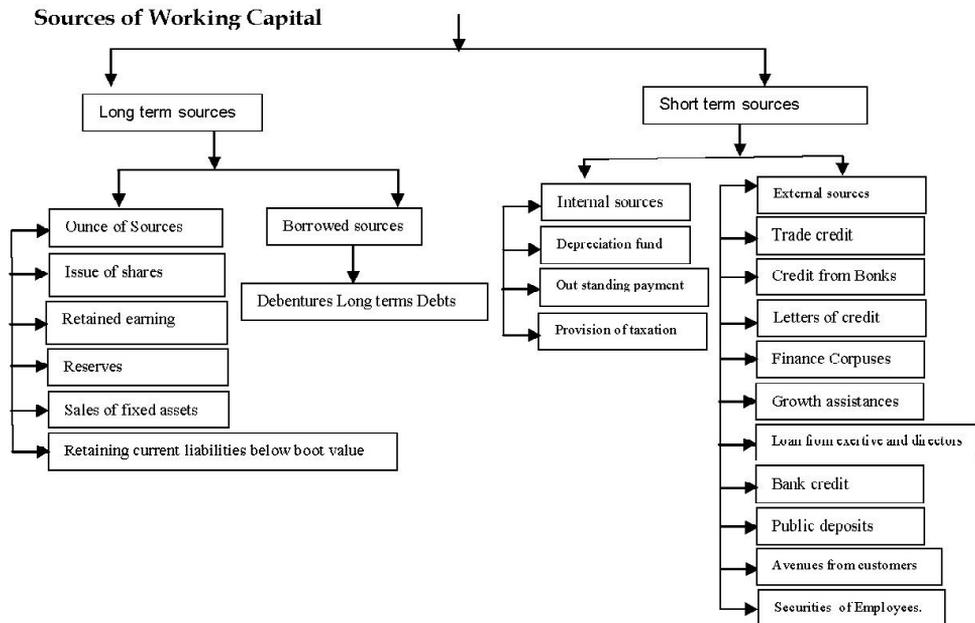
- **Nature of business:** Nature of business is most important factor affects the quantity of working capital for regular business less amount of working capital required. Trading concern invest major part of their funds in inventories and bills receivable.
- **Size of business:** Requirement of fixed and fluctuating capital increases by the size of business. Less working capital is required for small business and more working capital required for large business.



-
- **Production process:** Production process affects the working capital. If production process is for long period then the excess working capital required because of excess time, warehouse expenses, additional overhead required for these process. For short period comparatively working capital required less.
 - **Production policies:** Production policies based on the nature of business. If there is a seasonal business then excess working capital required in a particular season and for other season its required less.
 - **Volume of sales:** Working capital is directly related to sales volume. Requirement of working capital is less in case of increasing the sales volume or vice versa.
 - **Supply conditions:** Working capital depends on supply conditions of supply of raw material. If sufficient quantity and perfect time is available for supply of stock then less working capital is required if there is not in a systematic manner then excess working capital required.
 - **Credit policy:** Credit policy means conditions of purchase and sales affect the quantity of working capital. If period of credit purchase is more than the credit sales then working capital required more or excessive.
 - **Liquidity and profitability:** Firms liquidity and profitability based on working capital. If there is a more risk and maximum profitability then working capital requires less and if there is a sound position for profitability and liquidity then working capital requires more.
 - **Banking connections :** If company buildup good relations with banking and financial institutions with their goodwill then less working capital requires because bank helps to these companies on behalf of their credibility.
 - **Dividend policies:** If dividend distributed in cash then excess working capital required or dividend distributed as a bonus shares then less working capital required.
-



Other factors: Other factors like co-ordination, resources of transportation and communication, government policies affects the working capital of business.



There are two sources of working capital requirement:

- Long term sources
- Short term sources

Long term sources:

The long term sources of working capital requirements should be met through long term sources. Working capital which is maintain for business for long term period is called long term working capital. Long term working capital is divided in two parts:

- Owned sources
- Borrowed sources

Owned sources: Following are included in owned sources:

Issue of shares: Working capital required by issue of shares and it is by both equity and preference shares.



Retained earning: Earned income which is not distributed as a dividend is called retained earning. Retained earning is a less cost and regular source for a working capital.

Reserves: Reserves created by company for their contingencies. Reserve also used as a working capital.

Sales of fixed assets: Due to obsolesce or damage of assets as a scrap and these assets are sold and working capital creates by this amount but it is not a regular income. It is a uncertain income.

Retiring current liabilities below book value: If actual payment of current liability is less than their Book Value then non recurring income creates and it is treated as a working capital.

Borrowed sources: In borrowed sources following are included:

Debentures: Fund for permanent working capital can also be raised by issue of debentures. But issue of debentures as a means of regular working capital creates a fixed charge on the future earnings. Thus management should make a choice wise in procuring funds by issue of debentures.

Long term debts: Management should make procuring funds by long term debts from public deposits. Financial institutions, commercial banks etc.

Short term sources: Short term sources mainly divided into two parts:

- Internal sources
- External sources

Internal sources: In internal sources following sources are included:

Depreciation fund: Depreciation fund is an important source for working capital because this fund is utilised for the re-purchase of assets.

Outstanding Payment: Outstanding payment used in middle period of financial year as a working capital because these expenses paid after a year.

Provision of taxation: There remains a time-lag between making provision for taxes and their actual payment. Thus the funds provided for taxation



can be utilized for the short term working capital.

External sources: Following sources included:

Trade credit: Generally trade credit is a widely tapped source of short term financing of working capital.

Trade creditors of the suppliers of goods, inventories and equipment provided short term finance to the company on the basis of deferred payments of their supplies.

Credit from banks: Generally a bank provides working capital in the form of overdraft, cash credit and short term loans.

Letters of credit: Under the credit letters bills payable promissory notes and other bills of exchange included is an important source of working capital.

Finance companies: Finance companies such as Investment companies, Insurance companies, and other Industrial companies are also an important source of working capital.

Public deposits: Public deposits are another source of working capital because for fulfilling some priorities these institutes give short term funds.

Advance from customer: Advance from customer is a source of working capital.

Government assistance: Government also provides short term assistance to business concerns.

Loan from executives and directors: Sometimes the managing director and directors also provide loans treated as a working capital.

Importance of working capital:

The primary objective of a barriers corporation is to maximize have alders wealth earning sufficient profit the ought effective operations and increased sales. A firm needs working capital for laity operation. Working capital is necessary for business. A company unstinted udometer working capital. It should neither be excessive nor image squat.



Conclusion:

Working capital is as important as a business firm as blood in a human life. Each and every business concern should have adequate funds to meet out day to day expenses and to finance current assets, debtors, receivables and inventories. Inadequate and excess working capital effect disadvantages to the business, so there should be adequate working capital. Different factors inference to determine the working capital requirement.

Adequate working capital must be collect from affiance sources. Than business will run satisfactory.

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EDUCATIONAL VALUE OF DANCE

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Introduction

Dancing would describe as the liberal, humanistic culture of the emotions by motions. Feeling and movement not only fit, but intensify each other, and to a degree, by changing either we change the other. Herein lies the great educational potency of dancing, and this makes it the best of all illustrations of harmony between mind and body. Dancing is best conceived as an originally spontaneous muscular expression of internal states, primarily not with the purpose of imparting, but for the pleasure of expressing them. Thus the pedagogic value of dancing it to enlarge the emotional life by making all the combinations of movements that it is mechanically possible for the body to make. Ordinary life, not only of work but even of play, leaves unused sets of activities, and as there atrophy the feeling –states that they express tend also to fade, and so life grows partial and fragmentary, and we fail to experience all that our heredity makes possible. Thus all should dance in the sense above described for their own psychic welfare, for it helps the young to orb out the soul and keeps that of the aged from shrivelling and imagination. Thus we have another of the ways in which we draw upon the immeasurable wealth of life represented in our pedigree and make the best and most vital in the careers of our long line of forebears live again in us. We restrict their joys and bury or even perchance participate in their sorrows. Our age of drudgery and strain alternating with too passive pleasures knows little of the resources of dancing for education and all-sided development.

Most children begin to feel interest in dancing about the dawn of the school age, but chiefly in connection with acted stories and with music with strongly accented and simple rhythm. But this interest is languid until



the adolescent reconstruction is well under way, when zest for it is greatly reinforced. Something is wrong with the boy or girl or their parents or teachers who cannot learn or does not love to dance in the middle teens. But the sexes are inclined to very different types, girls taking to the graceful and more conventional, and boys to the more extravagant even original, e.g., clog, gymnastic, cake-walk forms. Instructors have not sufficiently recognized these marked diversities near the beginning of the nascent period for dancing. From Mrs. Barber's questionnaire issued here and answered by many instructors and experts in the art, and from the other sources, it is plain that there are occasionally born genius who love it, dance when alone for pure enjoyment, and sometimes teach themselves. In many small theatres on amateur nights, which offer an open stage and prizes to all comers, one occasionally sees not only much expertness but on rare occasions real originality, and always intense interest. Rarely indeed do we see among professional stage dancers a true artist born and made, but when such as one appears and startles the audience by creative talent, then we awaken to a thrilling sense of what the higher poetry of motion may mean and do. Its great psychotherapeutic value when stimulated or inspired by good music is beyond all question. Although excitable and maniacal cases may be over wrought and profound melancholic unaffected, its influence is growingly appreciated, not only for the patients who participate, but for those who only look on. Its prophylactic value is probably greater than we yet realize.

Key concepts of Dance

Dance can be conceptualised as human behaviour composed of purposeful, intentionally rhythmical, and culturally influenced sequences of nonverbal body movements and stillness in time and space and with effort. The movements are mostly not those performed in ordinary motor activities but may refer to them. For example, there are movements used to actually wash clothes and movements imaginatively used in dance to symbolize washing. Both motor activities may be culturally specific. Dance has inherent and aesthetic value (standards of appropriateness and competency.) dance is usually accompanied by music, with its range of sounds and rhythm, and sometimes by costume and props.



A dancer's purpose may be to provide an emotional experience, to conceptualize through movement, or to play with movements itself. Playing with form and creating nonrepresentational dance parallels 20th century abstraction in the arts in general. In telling stories through dance, troublesome themes, like fear, can be held up to scrutiny, played with, distanced, made less threatening, and even move people to social action, as advocated by critical pedagogy. Dance may be a vehicle, or an open channel, for purposeful communication. Effective communication, of course, depends on the shared knowledge between dancer and audience.

Emotion, a significant source of human motivation, constrains or inspires people as they create dances and relate to one another. Dance is multisensory, and so it heightens the perceptual awareness that expands access to the meaning of different kinds of emotional expression. There is the sight of dancers moving in time and space; the sound of physical movement, breathing, accompanying music and talk; the smell of dancers physical exertion; the tactile sensation of body parts touching the ground , other body parts, people or props, and the air around the dancers; the proximal sense of distance among dancers and between dancers and audience; and the kinaesthetic experience and sense of empathy with a performer's bodily movement and energy. The eyes indicate degrees of attentiveness and arousal, influence attitude change, and regulate interaction. In addition, the eyes define power and status relationships.

An individual's creativity and culture influence her or hi dance-making, performing, and viewing. Culture, another key concept in the discipline of dance, refers to the values, beliefs, norms, and rules shared by a group and learned through communication. The relationship between dance and culture is reciprocal. Culture gives meaning to who dances what, why, how, when, where, and with and for whom, in addition to the role of the dance audience. Such variables may bespeak sexual orientation and gender roles, as well as ethnic, national, and other group identities. These may reflect and/or influence culture, engendering visions of alternative possibilities. History attests to dance as a means of sending messages of grievance and remedy.



Symbolization, another key concept as integral to dance as to verbal language, is a fundamental cognitive activity that people use on an ongoing basis. People may be prewired to recognize or create metaphoric associations across disparate sensory, perceptual, enactive, and affective domains of experience. Lakoff points out that metaphor, across-domain mapping, is fundamentally conceptual, not linguistic. There may be external or outer representations, that is, some actual object or an internal or inner representation that is imagined. Research on different forms of dance has revealed complex ways of conveying meaning in dance (through devices and spheres) that students can use according to their intellectual development and teacher and instruction. These ways of embodying cognition and the imagination are briefly noted to suggest the sophisticated semantic potential of dance.

Packing and Unpacking Meaning

Dancers may use one or more of at least six symbolic devices to encode meaning. Concretization is movement that produces the outward aspect of something, such as a warrior dance displaying advance and retreat battle tactics. An icon represents most characteristics of something and is responded to as if it actually were what it represents. For example, a Haitian dancer manifesting through a specific dance the presence of Ghede, the god of love and death, is treated by fellow Haitians with genuine awe and gender –appropriate behaviour –as if the dancer were actually the god himself. A stylization encompasses arbitrary and conventional gestures or movements, such as a ballet dancer pointing to his heart as a sign of love for his lady. A metonym is a motional conceptualization of one thing representing another of which it is a part, such as a romantic duet representing an affair. The most common way of encoding meaning in dance is through metaphor, the expression of one thought, experience, or phenomenon in place of another that it resembles. Illustrative of joining different domains are contrastive movements' patterns for men and women referring to their distinct biological and social roles. Actualization is a portrayal of one or several of a dancer's usual roles, such as a woman who performs in a dance for mothers, to convey her maternal role.



The devices for encapsulating meaning in dance seem to operate in one or more of eight spheres of communication. An example of the meaning of dance being in the dance event itself is when people attend a social dance to be seen, perhaps as participants in a fundraising charity ball. The meaning of dance may be in the sphere of the total human body in action, such as in a person's self-presentation. The whole pattern of performance, emphasizing structure, style, feeling, or drama, may be the locus of meaning. Meaning may be centered in the sequence of unfolding movement, including who does what to whom and how, in dramatic episodes. Specific movements and how they are performed may be significant, as when a male dancer parodies a woman by dancing end point. The intermesh of movements with other communication modes, such as song (speech) or costume, may be where meaning lies. Meaning may be in the sphere of dance as a vehicle for another medium. An example is dance as a meaning for a performer's song or rap recitation. The sphere of meaning may be centered in presence, the emotional impact of projected sensuality, raw animality, charisma, or the magic of dance.

The Power of Nonverbal Communication like dance

Movement as an Evolutionary tools

The power of dance as a form of nonverbal communication is mentioned in History of dance. Dance is also a captivating nonverbal communication. Evolutionary biologists note that human beings need to attend to motion as a tool for survival –to distinguish prey and predator and to select a mate. Human beings have to anticipate others actions and respond accordingly. Perceptual and motor systems play major roles in survival. The body gives clues. It "talks" and people "listen". Human beings first learn through movement, and movement facilitates learning. sensory-motor activities form new neural pathways and synaptic connections throughout life, and the merger of body, emotion, and cognition leads to effective communication, the medium of education and dance.

Nonverbal communication constitutes a central feature of human development, knowing, and learning. The body communicates through



gesture and locomotion (moving from place to place) using proximity, touch, gaze, facial expression, posture, physical appearance, smell and emotion.

Verbal Language and the Body language of Dance compared

Dance is a form stylized movement that bears some similarities to verbal language. Both dance and verbal language have vocabulary (locomotion and gestures in dance) and grammar (rules in different languages and dance traditions for putting the vocabulary together and, in dance traditions, justifying how one movement can follow another). And both dance and verbal language have semantics (meaning). Verbal language strings together sequences of words, and dance strings together sequences of movement. However, dance more often resembles poetry, with its multiple, symbolic, and elusive meanings, that it resembles prose. Dance can be mimetic or abstract. It is more difficult to communicate complex logical structures with dance than it is with verbal language. Although spoken language can simply be meaningless sounds, and movements can be mere motion, listeners and viewers tend to read meaning into what they hear and see.

Both verbal language and dance contain ambiguity and engender cultural transmission; arbitrariness (many of their characteristics have no predictability), discreteness (separateness), displacement (reference can be made to something not immediately present), productivity (messages never created before can be sent and understood within a set of structural principles), duality of patterning (a system of physical action and a system of meaning), affectivity (expression of an internal state with the potential for changing moods and situations), and a wide range in the number of potential participants in the communication processes.

The brain in Verbal Language and Dance

Areas in the brain that control the hands and gesture overlap and develop together with the areas that control the mouth and speech. The Broca and Wernicke areas, located in the left hemisphere, have been associated with verbal language expression and comprehension, abstract



symbolic and analytic functions, sequential information procession, and complex patterns of movement. The process of making a dance engages some of the same components in the brain for conceptualization, creativity and memory as do verbal poetry or prose, but not the same procedural knowledge. A study of neural basis of dance (using MRI and position emission tomography) found an interacting network of brain areas active during the performance of specific movements in the tango. The right front operculum near Broca's area was involved in motor sequencing, and the right medial superior parietal cortex was involved in movement intention. Dance is also linked to the right hemisphere, which seems to involve elementary perceptual tasks, nonverbal processing of spatial information, music and emotional reactivity. However, rigid lateralization of brain function is precluded by the transfer of inputs to each side of the brain over the corpus callosum, the main body of nerve fibres connecting the two hemispheres. For example, there are left-hemisphere processes for words spoken or spelled out and right-hemisphere patterns for representations of numbers (visual Arabic codes) that have interconnectivity by direct transcallosal pathways.

Thinking and Dance

We may also learn and think through dance, which can convey complex notions. As Concepts arise from, and are understood through, the body, the brain, and experience in the world. Concepts get their meaning through embodiment, especially via perceptual and motor capacities. Directly embodied concepts include basic-level concepts, spatial-relations concepts, bodily action concepts (e.g., hand movement), aspect (that is, the general structure of actions and events), color, and others.

Dewey (1934) recognised that an art form may be able to convey some information better than other languages can. Dance helps us to communicate to people. A visual medium can be more effective than words.

Dance Uses the Hand, the Entire Body to Communicate

Although much research comes from a tradition that frames the communication of manual gesture in relation to verbal language, it is not



unreasonable to extrapolate this work to dance communication that is autonomous. Dance has been recognized as powerful nonverbal communication in India for about 2000 years and in the west since the 1970s. The importance of the hand gesture in teaching and learning suggests the exponential impact of dance as it utilizes a multichanneled gestural system to communicate : gestures of various body parts, and locomotion in time, space, and with effort, music and costume. Drawing from movements in everyday life, dance stylizes movement with a degree of conventionality or distinctiveness. A multichanneled system, dance is embodied cognition that can convey declarative, procedural and emotional knowledge, apart from co-occurring with speech or being an element of a sign language.

Multiple Ways of Learning Through Dance

The power of dance as a form of nonverbal communication, in some ways comparable to verbal language, and we now turn to the cognitive emotional power of dance in teaching and learning. Recent interdisciplinary research reaches beyond the insularity of the dance and arts worlds to reveal complex cognitive skills in dance-making and perceiving. Positing that there are eight intelligences that appear in some type of symbolic system, Gardener (1983) calls attention to different ways of learning through dance : Of these, bodily-kinaesthetic intelligence is a form of thinking, an ability to solve problems through “control of one’s bodily motions”.

Dance Impact on the Brain

Dance influences the mind, causes positive plastic changes in the brain for young and old alike. Catterall (2005) suggests that acts learning and experiences, to varying degrees, reorganize neural pathways, or the way the brain functions. Physical activity sparks biological changes that encourage brain cells to bid to one another, which reflects the brain’s fundamental ability to adapt to challenges. Physical exercise that requires complex motor movement also exercises “the areas of the brain to fire signals along the same network of cells, which solidifies their connections”. Extended and/or deep learning in dance thus affects how well the brain processes other tasks.



Declarative and Procedural Knowledge

In dance education, students acquire various kinds of knowledge. They acquire declarative knowledge about dance, including concepts, history, movement vocabulary, and rules of building dances (grammar). Students can learn to express declarative knowledge in their choreography, visualizing movement ideas. Students gain procedural knowledge, also called “knowing-is-in-the-doing”; and bodily knowledge, called “knowing-in-the-body”, or embodied knowledge which is attained through multiple aspects of sensory perception, especially kinaesthesia –a revelation of the given essence of something by the moving sensual body. This knowledge involves motor skills and “muscle memory” (proprioception felt in the body), cognitive skills, and cognitive strategies that enable the application of patterns (a rule of grammar) in communicating ideas and feelings in dance.

A difference between declarative knowledge and procedural knowledge in dance is that a student can know the grammatical rules for a dance from and appreciate its denotations and connotations with ideas about appropriate and yet not have the skills for performance. Declarative and procedural knowledge likely activate or use different parts of the brain. After a cognitive stage in which a method for performing the skill is worked out and, finally an autonomous stage in which the skill becomes automatic. Stevens and McKechnine (2005) note that through rehearsals and experiences in the studio, dancers also have declarative (semantic and episodic) knowledge of the movement phrases and vocabulary phrases and vocabulary that constitute a specific dance work.

Emotion

Feelings, integral to cognition, are inherent to successful dance and to education in general. Emotion may prime some goals and processes while inhibiting others. What a dancer feels varies according to the person and the stage of learning dance. As might a student in any classroom, a dancer may feel stressed by “not getting it” or by receiving negative feedback from



teachers and students. Performance anxiety affects novice and pro alike. Mastery of dance makes one feel satisfied, confident, and proud. Performance can give a feeling of the “runner’s high”. Individuals usually find strength in the self-mastery required in learning to dance and feel supported by others in cohesive group dancing. Performers feel accomplishment as they express the sense of doing something and being in control; as they achieve what others want to do, try to do, but cannot do well; and as they experience the exhilaration of performance. Dancers may perform for others and in place of others. Of course, dance is art and entertainment that diverts performers and audiences alike from stressors.

Critical Thinking

The acquisition of critical thinking and learning skills, essential to education in any subject, is involved in learning a dance technique and performing creatively and, most productively, in making and analyzing dances that convey thoughts, feelings, or a perspective on movement itself. For example, mental alertness, attention to sequence and detail, and memorization skills are necessary, as are observing, listening to directions, following complicated instructions, and executing specific movements. Creating dances and making sense of dances require reasoning, understanding symbols, analyzing images, and knowing how to organize knowledge. Dance-making involves composing movement phrases and, subsequently, long sequences, evaluating, changing, reevaluating, deleting and adding.

Practices in Dance Education

An interdisciplinary constellation of theoretical perspectives and research support the idea that the nonverbal communication of dance is a powerful way of thinking, doing, and experiencing. Dance is offered as an academic discipline in its own right and taught as a separate curriculum. But dance is also taught across curricula as a means to acquire, reinforce, or assess learning in other disciplines.

Dance is a performing art, a liberal art and an applied art. Dance is integrated with other subjects. Dance often facilitates learning by engaging



students, giving concrete movement articulation and immediacy to abstract concepts, and promoting creativity.

Conclusion

From the above discussions it is clear that dance plays a very important role in the curriculum. Practice of dance makes students correlate with other subjects of the curriculum. The process of critical thinking, problem solving etc.. can be enhanced by dance education. Dance is non-verbal language to communicate and a mode of expression for our inner feelings. It develops the body-mind connection, the brain power also increased by doing dance. Dance develops the memory and concentration to achieve academic success. Dance develop the right and left hemispheres of the brain. Learning takes plays at a accelerated rate due to practice of dance. So, dance should be included as one of the subjects in our curriculum.

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SECONDARY SCHOOL STUDENTS ATTITUDE TOWARDS VOCATIONAL EDUCATION

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The rapid changes in technologies and financial markets, emergence of global economies, products and services, growing international competition, new forms of business, and management practices are creating new paradigms for the workforce. If India wants to develop a workforce which can meet skills of a growing economy and if it wants to give a competitive advantage to its workforce on the global front, it is imperative that its Vocational Education and Training system is to be restructured. Vocational Education and Training (VET) is an important element of nation's education initiative. The Kothari Commission, the recommendations of which form the basis of the 1968 National Policy on Education, felt that it should be planned to divert at least 50 per cent of the students completing Class X to the vocational stream, reducing the pressure on the universities and also preparing students for gainful employment. The National Working Group on Vocationalisation Education (also known as the V.C. Kulandaiswamy Committee, 1985) reviewed the Vocational Education Programme (VEP) extensively and developed guidelines for the expansion of the programme. Its recommendations led to the initiation of the centrally sponsored scheme on Vocationalisation of Secondary Education. The National Policy on Education (1986) has accorded very high priority to the programme of Vocationalization of Education. It states that the Vocational Education, intended to prepare students for identified occupations spanning several areas of activity and that vocational courses will ordinarily be provided after the secondary stage, but keeping the scheme flexible, they may also be available after class VIII. The policy suggests that pre-vocational programmes provided at lower secondary stage will facilitate the choice of vocational courses at higher secondary stage.



National Curriculum Framework (NCF-2005) has suggested that, Vocational Education and Training (VET) may be conceived as a major national programme to be implemented in the mission mode. Vocational Education and Training (VET) in this new perspective will be built upon the bedrock of 10-12 years of work-centered education in the school system, rather than as a strategy for diverting students away from the 'academic' stream. The Government of India at the national level released "National Vocational Education Qualifications Framework (NVEQF-2011) developed by the MHRD is a descriptive framework that provides a common reference for linking various qualifications. It will set common principles and guidelines for a nationally recognized qualification system covering Schools, Vocational Education and Training Institutions, Technical Education Institutions, and Universities/Colleges. The framework provides for recognition of prior learning and flexibility in programmes, delivery mode and training design, and diversity in range of courses and training options. The essence of the recommendations made by various commissions and committees is that the vocationalisation should be the main feature of the future system of education at the secondary stage, and it can be extended to school level also.

In India Vocational Education and Training (VET) is delivered through a variety of government and nongovernment agencies, at central and state levels. Under the centrally sponsored scheme (CSS) which was launched in 1988 vocationalisation of secondary education was implemented by the States/Uts. The objective of introducing Vocational Education at secondary school level was to provide pre-vocational training to the students which would help to orient them towards the world of work. The scheme also introduced Vocational Education courses at +2 levels i.e. 11th & 12th (HSC). It is apparent that the Vocational Education courses available at secondary or higher secondary level have been unable to attract a large student population as compared to the conventional education courses due to various reasons. Secondary and higher secondary education are important terminal stages in the system of general education because it is at these points that the youth decide on whether to pursue higher



education, opt for technical training or join the workforce. Educationists and experts have consistently recommended that education at these stages should be given an occupational bias to link it with the world of employment. The Govt is also intended to reorganize the Vocational Education system and is planning to integrate the academic courses with Vocational Education in secondary schools. The attitude of the individuals plays a vital role in pursuing education or choosing a career. The success of the Vocational Education courses introduced at secondary level depends upon the attitude of the students. Hence the investigator made a study to know the attitudes of secondary school students towards Vocational Education.

Objectives:

- 1) To measure and understand the attitudes of secondary school students towards Vocational Education..
- 2) To study whether there exists any difference in the attitudes of secondary school towards Vocational Education...in respect of their gender ; locality; medium of instruction; type of school management ;Socio - Economic Status; etc

Hypotheses :

- 1) There exists no significant difference between boys and girls of secondary schools in their attitude towards Vocational Education.
- 2) There exists no significant difference in the attitude towards Vocational Education between the students studying in rural an urban secondary schools.
- 3) There would not be any significant difference in the attitude towards Vocational Education between the secondary school students studying in Telugu and English medium.
- 4) There would not be any significant difference in the attitude towards Vocational Education between the students studying in Govt. and private secondary schools.



- 5) There would not be any significant difference in the attitude towards Vocational Education between the students belonging to families of Below Poverty Line and Above Poverty Line.
- 6) The educational qualification of the parents would not significantly influence the attitudes of secondary school students towards Vocational Education.
- 7) The occupational status of the parents would not significantly influence the attitudes of secondary school students towards Vocational Education.
- 8) There would not be any significant difference among the secondary school students belonging to different caste groups in their attitudes towards Vocational Education.

Methodology:

The present study is an attitudinal study of descriptive nature, made on the basis of data gathered through field investigation. This investigation was undertaken to find out the attitude of secondary school students towards Vocational Education.

Sample:

Students studying in secondary schools of Visakhapatnam district in Andrapradesh are taken as sample. The size of the sample is 150 secondary school students who have been studying 10th class/Grade from 10 different schools. Simple random sampling technique is used. This sample of 150 students studying in secondary schools is found to have the following sub-samples: (i) Boys (N= 75), (ii) Girls (N=75), (iii) students studying in rural schools (N=90), (iv) students studying in urban schools (N=60), (v) students studying in Telugu medium (N=120), (vi) students studying in English medium (N=30), (vii) students studying in Government schools (N=105), (viii) students studying in Private schools (N=45)

Tools Employed:

The Vocational Education Attitude Scale (VEAS) based on the Likert's method developed by Al-Sa'd, Ahmed (2007) was improvised and



adopted by the investigator for the measuring attitudes of secondary school students and 20 items in the scale were selected keeping in mind and the maturity level of secondary school students. Each statement has five options, namely "Strongly Agree", "Agree", "Undecided", "Disagree", "Strongly Disagree. The information about personal and demographic variables was collected through a personal data sheet developed by the investigator which is incorporated in the beginning of the attitude scale.

Collection of Data:

For the purpose of collecting data the investigator visited the secondary schools in Visakhapatnam district which were selected with simple random sampling. The students were explained the purpose of this research and requested to respond to the Vocational Education. Attitude Scale (VEAS). They were also asked to fill up the personal data sheet.

Data Analysis and Interpretation:

The collected data was computed and the results were interpreted to check whether there exists any significant difference in the mean scores of attitudes of secondary school students in respect of gender; locality; medium of instruction; type of school management; Socio - Economic Status; etc.. The means standard deviations the analysis of variance (F-test) and t-ratio were calculated. Data and results of the test of significance of the difference between mean scores of the attitudes of secondary school students towards Vocational Education...based on the relevant subsamples of interfering variables has shown in the following table.



Table showing the significance of difference between mean scores of Attitudes of secondary school students towards Vocational Education...based relevant subsamples of interfering variables

| Category | variable | N | Mean | S.D. | Critical Ratio | Remarks at @ 0.05 level |
|--|---|-----|-------|------|---------------------|-------------------------|
| Gender | Boys | 75 | 69.14 | 7.84 | 't'-value *2.675 | Significant |
| | Girls | 75 | 72.68 | 8.36 | | |
| Locality | Rural | 90 | 73.36 | 8.25 | 't'-value *3.422 | Significant |
| | Urban | 60 | 68.45 | 9.12 | | |
| Medium of Instruction | Telugu | 120 | 71.34 | 9.62 | 't'-value 0.465 | Not Significant |
| | English | 30 | 70.46 | 7.63 | | |
| Management of the Institution | Govt. | 105 | 73.65 | 8.68 | 't'-value *3.305 | Significant |
| | Private | 45 | 68.14 | 7.53 | | |
| Economical Status of the family (based on the parents' annual income). | BPL(Below Poverty Line)White card Holders | 94 | 72.85 | 9.32 | 't'-value *2.686 | Significant |
| | APL(Above Poverty Line)-Pink card Holders | 56 | 68.92 | 7.43 | | |
| Parents Educational status | UG/PG/Professional courses | 32 | 69.38 | 7.62 | 'F'-value 1.298 | Not Significant |
| | SSC/Inter | 53 | 72.46 | 9.25 | | |
| | Below SSC/Illiterates | 65 | 70.85 | 8.74 | | |
| Parents occupational status | Secured job | 26 | 67.85 | 6.32 | 'F'-value *5.049 | Significant |
| | Agriculture/Business/self employed | 89 | 73.89 | 9.02 | | |
| | Daily wage worker/Labourer | 35 | 70.94 | 7.13 | | |
| caste | OC | 28 | 69.14 | 6.36 | 'F'-value 1.042 | Not Significant |
| | OBC | 95 | 71.28 | 9.32 | | |
| | SC/ST | 27 | 72.32 | 6.18 | | |



Results and Discussion:

- 1) From the above table it was understood that there exists significant difference between the attitudes of secondary school boys and girls towards Vocational Education. The mean value of boys is 69.14 and mean value of girls' is 72.68. The CR value for gender category is 2.675 which is significant at 0.05 level. It clearly indicates that boys and girls differ significantly in their attitude towards Vocational Education.
 - 2) With regard to the locality of the school the mean value of the students studying in rural schools was 73.36 and the mean value of students studying in urban schools was 68.45 the CR value is 3.422 which is significant at 0.05 level. It clearly shows that rural and urban students studying in secondary schools differ significantly in their attitude towards Vocational Education.
 - 3) With regard to the medium of instruction the mean value of the students studying in Telugu medium schools was 71.34 and the mean value of students studying in English medium was 70.46. The CR value is 0.465 which is not statistically significant. Hence we can conclude that Telugu and English medium students studying in secondary schools do not differ significantly in their attitude towards Vocational Education.
 - 4) With regard to the type of the school management the mean value of the students studying in Government schools was 73.65 and the mean value of students studying in private schools was 68.14. The CR value is 3.305 which is significant at 0.05 level. It clearly shows that students studying in Govt. and private secondary schools differ significantly in their attitude towards Vocational Education.
 - 5) With regard to the parents' Economical Status the mean value of the students' parents who are Below Poverty Line (BPL families having White card issued by A.P. Govt.) was 72.85 and the mean value of the students' parents who are Above Poverty Line (APL families having Pink card issued by A.P. Govt.) 68.92. The CR value
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is 2.686 which is significant at 0.05 level. It clearly shows that students parents annual income significantly influence in their attitude towards Vocational Education.

- 6) With regard to the parents educational status the mean value of the students parents having Under Graduate/Postgraduate/ Professional qualifications was 69.38 and the mean value of the students parents having Inter/ SSC qualification was 72.46 and the mean value of the parents having below SSC qualification was 70.85. The F value is 1.298 which is not statically significant .It clearly shows that parents education significantly influence the attitude of secondary school students towards Vocational Education.
- 7) With regard to the parents occupational status the mean value of the students parents having secured(permanent job) was 67.85 and the mean value of the students parents having engaged in self employment/Agriculture/ Business was 73.89 and the mean value of the parents working as daily wage workers/Labour was 70.94. The F value 5.049 which is statically very significant .It clearly shows that parents Occupational status significantly influence the attitude of secondary school students towards Vocational Education.
- 8) With regard to caste of the students belonging to the mean value of the OC students was 69.14 and the mean value of students belonging to OBC was 71.28. The mean value of the students belonging to SC/ST was 72.32 .The F value is 1.042 which is not statistically significant .It clearly shows that students of secondary schools belonging to different caste groups do not differ significantly in their attitude towards Vocational Education.

Major Findings of the Study

The findings of the study are summarized as follows.

- 1) It is observed that in general the secondary school students had shown moderately more favorable attitude towards Vocational Education.



- 2) The Boys and Girls studying in secondary schools differ significantly in their attitude towards Vocational Education. Girls had shown more positive attitude towards Vocational Education...at secondary level.
- 3) The students studying in rural an urban secondary schools differ significantly in their attitude towards Vocational Education.
- 4) Medium of instruction had not any impact on the attitude towards Vocational Education and there is no significant difference in Attitude towards Vocational Education between the students studying Telugu and English medium schools.
- 5) The students studying in Government and Private secondary schools differ significantly in their attitude towards Vocational Education Govt. School students had shown more favorable attitude towards to pursue of Vocational Education at secondary level.
- 6) The parents' annual income had significant influence on the attitude of the secondary school students towards Vocational Education.
- 7) It was found that there would not be any significant difference in the attitudes of secondary school students towards Vocational Education whose parents possessing different educational status.
- 8) The occupational status of the parents had significantly influence on the attitudes of secondary school students towards Vocational Education.
- 9) It was found that there was not any significant difference in the attitudes of secondary school students belonging to different caste groups towards Vocational Education.

Conclusion:

On the basis of the results of the data the following conclusions are drawn. The secondary school students had shown favorable attitude towards the Vocational Education. It was found that girls had more positive



attitude than boys towards Vocational Education. It is also concluded that students studying in rural schools and in government schools had favorable attitude towards Vocational Education when compared with urban schools and private schools. The Economical and Occupational status of the parents had significant impact on the secondary school students' attitudes towards Vocational Education. The study has greater educational importance. Specialized courses in Vocational Education should be introduced for girls at the secondary level. Priority should be given for introduction of Vocational Education courses in rural govt. schools. For this purpose the present Vocational Education and Training in secondary schools should be restructured, and reorganized as envisaged in NVEQF. Students should be provided opportunity to pursue the Vocational Courses along with their Academic courses in secondary schools. Steps should be taken to reform the curriculum for the Vocationalization of Secondary Education.

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EMOTIONAL INTELLIGENCE AND ATTITUDE TOWARDS SCIENCE

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INTRODUCTION:

The world which is fast advancing in every sphere of life poses lot of demands. Coping with the external demands of our society and solving problems require the effective use of emotional intelligence. Researchers identified that emotional intelligence is predictive of success in all walks of life. They emphasized the importance of emotional intelligence for everyday living.

Many people believe that attitude has all the efforts and actions to be about something. Attitude is one of the most important factor in determining success. It affects human relations and our acceptance of a new experience. If the attitude towards a task is positive, the individual is certainly happy to do it. However, if the environment is opposite, we will try to avoid and not do the job in earnest. It is proved that the attitude is influenced by emotional intelligence.

EMOTIONAL INTELLIGENCE:

Emotional intelligence (EI) is a relatively new and growing area of behavioral investigation, having matured recently with the aid of lavish international media attention. Emotional Intelligence refers to the competence to identify and express emotions, understand emotions, assimilate emotions in thought, and regulate both positive and negative emotions in the self and in others.

Emotional intelligence (EI) is defined as the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions. Emotionally



Intelligent people that are aware of their emotions and others and are capable of managing these emotions . Goleman defined it as an ability to manage emotion (self and others) so that it is beneficial to them and their environment . He describes emotional intelligence as the main contributor to a person's success.

As Emotional Intelligence promotes understanding, better relationship, stability and harmony in human relationship, it also helps to create balance in a person's education. Balanced student with good emotional knowledge contributes in motivation to engage in learning itself. Emotional Intelligence skills in education also motivate students to achieve higher learning goals and broaden their personal development.

Students whom possess immature levels of emotional intelligence may be inclined to perceive learning with technology (e.g. online learning) negatively, as it requires self-discipline, independent effort, maturity, time management skills, and positive attitudes. Students with higher Emotional Intelligence were found to be naturally achievement oriented, innovative and highly motivated. There are three theoretical approaches in emotional intelligence; specific ability approach, integrative approach and mixed-model approach. The specific ability approach is a specific skill area that is basic to emotional intelligence that concerns mental capabilities; the integrative approach as a combination of these specific skills to gain emotional intelligence; and the mixed-model approach is an approach that combines diverse skills and intelligence based upon psychological traits, abilities and styles.

The psychologists, **R. Wylie and S. Burus (1979)**, stated that students who are emotionally stable feel more confident of their abilities and, thus, they are more successful in their lives. Emotional intelligence is the intelligence that is in a person associated with the level of ability to deal with other people, feelings, and daily social environment. Individuals with high levels of intelligence are the people who are able to control their feelings and behaviors. They will keep their own feelings of stress they faced, so that it does not disable the ability to think wisely. Normally, individuals



with high levels of emotional intelligence will be successful in their career and life.

Emotional intelligence is able to encourage motivation level, organizing, directing, and activating the child's behavior at school. According to **Mohd Azhar Abd Hamid et al. (2005)**, emotional intelligences help the students to facilitate an efficient response, adapt, and react to change the environmental situations to achieve success in areas where they are involved. Therefore, the levels of emotional intelligence of students need to be studied to help students achieve personal excellence in any field they are involved.

The term **emotional literacy** has often been used in parallel to, and sometimes interchangeably with, the term "emotional intelligence". However, there are important differences between the two.

Emotional Literacy is a term that was used first by **Claude Steiner (1997)** who says:

Emotional Literacy is made up of 'the ability to understand your emotions, the ability to listen to others and empathize with their emotions, and the ability to express emotions productively. To be emotionally literate is to be able to handle emotions in a way that improves your personal power and improves the quality of life around you. Emotional literacy improves relationships, creates loving possibilities between people, makes co-operative work possible, and facilitates the feeling of community.

He breaks emotional literacy into 5 parts:

- o Knowing your feelings.
- o Having a sense of empathy.
- o Learning to manage our emotions.
- o Repairing emotional damage
- o emotional interactivity.

Having its roots in counseling, it is a social definition that has interactions between people at its heart. According to **Steiner** emotional literacy about



understands your feelings and those of others to facilitate relationships, including using dialogue and self-control to avoid negative arguments. The ability to be aware and read other people's feelings enables one to interact with them effectively so that powerful emotional situations can be handled in a skillful way. Steiner calls this "emotional interactivity". Steiner's model of emotional literacy is therefore primarily about dealing constructively with the emotional difficulties we experience to build a sound future. He believes that personal power can be increased and relationships transformed. The emphasis is on the individual, and as such encourages one to look inward rather than to the social setting in which an individual operates.

Intelligent Quotient and Emotional Intelligence:

Success in life depends on a person's emotional intelligence, and only about 20% depends on Intelligent Quotient. Emotional intelligence involves the ability to perceive accurately, appraise, and express emotion; the ability to access and generate feeling when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth. **Mayer and Salovey(1997)**. According to **Herrnstein and Murray(1994)**, people are normally distributed in intelligence; poverty and unemployment, to some extent is the effect of low general intelligence, and affluence is associated with high general intelligence, **Daniel Golman(1995)** countered this impression by introducing the concept 'Emotional intelligence' and stated that it (IE) Can be as powerful and at times more powerful than Intelligent Quotient.

NEED OF EMOTIONAL INTELLIGENCE TO MAKE A BETTER LIFE:

Emotional Intelligence influences day-to-day problem solving behavior in schools, community centers, business houses and organizations. At individual level, it predicts communication skills, mortality, leadership, problem solving and aesthetics.

Emotions reflect relationships in cognition like sadness, which may indicate disappointment with self, the recognition of this relational existence of emotions led towards the progress of the contemporary view of intelligence that emotions and cognition can work hand in hand.



Emotional intelligence transpires that people, who manage their own feelings well and deal effectively with others, are more likely to be content in their lives, and are, therefore, more likely to retain in their lives.

Intelligence is more appropriately understood as the interface of cognitive and emotional characteristics. From all research it appears that higher emotional intelligence is related to many aspects of life success particularly if the child is brought up in an emotionally intelligent environment.

WAYS AND MEANS TO RAISE EMOTIONAL INTELLIGENCE:

All information to the brain comes through our senses and when this information is overwhelmingly stressful or emotional, instinct will take over and our ability to act will be limited to the flight, fight, or freeze response. Therefore, to have access to the wide range of choices and make good decisions, we need to be able to bring our emotions into balance at will.

Memory is also strongly linked to emotion. By learning to use the emotional part of our brain as well as the rational, we'll not only expand our range of choices when it comes to responding to a new event, we'll also factor emotional memory into our decision-making. This will help us to prevent from continually repeating earlier mistakes.

To improve our emotional intelligence and our decision-making abilities we need to understand and control the emotional side of our brain. This is done by developing five key skills.

DEVELOPING EMOTIONAL INTELLIGENCE THROUGH 5 KEY SKILLS:

Emotional intelligence consists of five key skills, each building on the last:

- The ability to quickly reduce stress.
- The ability to recognize and manage your emotions.
- The ability to connect with others using nonverbal communication.



- The ability to use humor and play to deal with challenges.
- The ability to resolve conflicts positively and with confidence.

ATTITUDE TOWARDS SCIENCE:

Attitude is "a relatively enduring organization of beliefs, feelings, and behavioural tendencies towards socially significant objects, groups, events or symbols". Attitude predicts people's behaviour. Attitude could be divided into three main components; affective, behaviour and cognitive. These components referred as the ABC model of attitudes are described below.

Affective : Affective is the feeling or emotions that people have towards an object.

For example: "I am scared of spider."

Behaviour (Conative) : Behaviour is the attitude that influences how a person acts or behaves.

For example: "I will avoid spiders and scream if I see one."

Cognitive: Cognitive is the person's belief or knowledge about the object.

For example: "I believe spiders are dangerous."

NEED OF ATTITUDE TOWARDS SCIENCE:

Many people believe that attitude has all the efforts and actions to be about something. Attitude is one of the most important factor in determining success. It affects human relations and our acceptance of a new experience. If the attitude towards a task is positive, the individual is certainly happy to do it. However, if the environment is opposite, we will try to avoid and not do the job in earnest. It is proved that the attitude is influenced by emotional intelligence. Even a cursory examination of the domain reveals that one of the most prominent aspects of the literature is that 30 years of research into this topic has been bedeviled by a lack of clarity about the concept under investigation. An early notable contribution towards its elaboration was made by **Klopper (1971)**, who categorized a set of affective behaviours in science education as:



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- The manifestation of favourable attitudes towards science and scientists;
 - The acceptance of scientific enquiry as a way of thought;
 - The adoption of 'scientific attitudes';
 - The enjoyment of science learning experiences;
 - The development of interests in science and science-related activities; and
 - The development of an interest in pursuing a career in science or science related work.

Further clarity emerged with the drawing of a fundamental and basic distinction by **Gardner (1975)** between 'attitudes towards science' and 'scientific attitudes'. The latter is a complex mixture of the longing to know and understand, a questioning approach to all statements, a search for data and their meaning, a demand for verification, a respect for logic, a consideration of premises and a consideration of consequences (Education Policies Commission 1962); and this aspect has been explored in some depth in a seminal review by **Gauld and Hukins (1980)**. In essence, these are the features that might be said to characterize scientific thinking and are cognitive in nature. However, a clear distinction must be drawn between these attributes and the affective 'attitudes towards science', which are the feelings, beliefs and values held about an object that may be the enterprise of science, school science, the impact of science on society or scientists themselves.

The first stumbling block for research into attitudes towards science, is that such attitudes do not consist of a single unitary construct, but rather consist of a large number of subconstructs all of which contribute in varying proportions towards an individual's attitudes towards science. Studies (**Breakwell and Beardsell 1992; Brown 1976; Crawley and Black 1992; Gardner 1975; Haladyna, Olsen, and Shaughnessy 1982; Keys 1987; Koballa Jr. 1995; Oliver and Simpson 1988; Ormerod and Duckworth 1975; Piburn 1993; Talton and Simpson 1985, 1986, 1987; Woolnough**



1994) have incorporated a range of components in their measures of attitudes to science including:

- The perception of the science teacher;
- Anxiety toward science;
- The value of science;
- Self-esteem at science;
- Motivation towards science;
- Enjoyment of science;
- Attitudes of peers and friends towards science;
- Attitudes of parents towards science;
- The nature of the classroom environment;
- Achievement in science; and
- Fear of failure on course.

Behaviour is seen as being determined by intention, and intention, in turn, is a joint product of attitude towards the behaviour and the subjective norm (i.e. beliefs about how other people would regard one's performance of the behaviour). The theory of reasoned action has been successfully applied to some attitude and behaviour studies in science education (for example, **Crawley and Black 1992; Crawley and Coe 1990; Norwich and Duncan 1990**). For instance, **Crawley and Coe (1990), Koballa Jr. (1988) and Oliver and Simpson (1988)** have all found that social support from peers and attitude towards enrolling for a course are strong determinants of student choice to pursue science courses voluntarily, which suggests that the theory has at least some partial validity.

Fundamentally, attitude cannot be separated from its context and the underlying body of influences that determine its real significance. In the case of school science, this points to the need to move away from general quantitative measures of attitude constructs and, instead, to explore the specific issue of students' attitudes to school science, and their attitude to



studying further courses in science in school with a view to gaining information of their effect on student subject choice.

DEVELOPMENT OF ATTITUDE TOWARDS SCIENCE:

- Students look upon the teacher as their role model for which it is necessary for the teacher to possess all the positive qualities.
- He should possess the qualities of honesty, giving importance to the other's views and to take decisions on the basis of various scientific evidences.
- Science is a practical subject, for which it becomes additional responsibility of teacher imparting this subject to provide opportunities to participate in various kinds of activities to the students at larger extent.
- It is necessary for the science teacher to provide opportunities to the students for independent working, extra-reading, Laboratory works and playing an important role in solving various kinds of problems through scientific methods.
- Teacher should provide the students with equal opportunities to get participated in various experiments conducted in laboratories. With this practice, they will become habitual to find out the truth and reasons of various things.

ATTITUDE TOWARDS SCIENCE PAVES THE WAY TO DEVELOP EMOTIONAL INTELLIGENCE:

There is a growing agreement that our emotional intelligence is much more important in predicting our level of success and satisfaction in life than our Intelligent Quotient. We are redefining what it means to be smart and effective in life. In his book, Emotional Intelligence, Daniel Goleman defines five critical skills that make up emotional intelligence.

“Attitude towards science is required for Knowing one's own emotions. Self-awareness recognizing a feeling as it happens is the keystone of emotional intelligence. Science attitude develops the ability to monitor



what we are feeling moment to moment is crucial to psychological insight and self-understanding.”

Science knowledge helping us gain better awareness of what we are feeling moment to moment. As part of this process, we will learn a road map to our emotions and how they affect our personal life. We will also learn effective tools to deal with them. This heightened emotional awareness will help us to make better decisions and develop a positive mental attitude. “Science attitude helps to manage emotions and Handling feelings so that we can appropriate.”

Following attitude towards science goes far beyond and manage our emotions by giving us a powerful tool to let go of or eliminate the painful, limiting emotions and stress that prevent us from performing at our best. This will allow us to bounce back from life’s inevitable setbacks and challenges and form a blueprint for prosperity.

Emotional intelligence will show us how to easily eliminate the emotions that prevent us from achieving what we want in life. As we eliminate our low self-esteem and the feelings that say, “I can’t,” “I don’t know how,” “I don’t deserve it” or “I can’t handle it, From the attitude towards science” we uncover our innate sense of “I can” that naturally catapults us to greater success. Consistent use of this process results in greater access to the “flow state.”

“Science attitude used to recognize emotions in others. Empathy is the fundamental people skill.” We will not only become more aware of our own emotions, we will be able to recognize the emotions of others and the impact that emotions have on our behavior.

“Handling relationships require understanding of today’s practical world. The art of relationship is, in a large part, skill in managing emotions in others.”

As we let go of our own emotional baggage, we will increase our empathy. By letting go, we naturally develop relationship improvement, freedom from depression, and overall emotional wellness. When we use



this process and let go of our own emotional baggage, people enjoy relating to us and giving us what we want.

RECOMMENDATIONS & SUGGESTIONS:

- i Emotional Intelligence as intelligence - Emotional Intelligence as a set of learned competencies - allows examining how a person has adapted to their environment, which can be seen as an outcome measure.
- i Emotions matter and that emotional competence is as important as intelligence to help people do well — has become a culture-wide “paradigm shift” readying people to confront the long neglected emotional realm.
- i Emotional Intelligence competencies entail emotional capacities in addition to purely cognitive abilities, modes of learning that work well for academic subjects or technical skills and hence, it is well suited for helping people improve an emotional competence.
- i Teachers should be encouraged to adopt guided discovery approach so that students scientific attitudes could be improved. From this emotional intelligence becomes as traits - offers insights into how one filters and directs their emotional aptitude.
- i Workshop and conferences should be organized to expose teachers on how best to use activity-based approaches in fostering scientific attitudes in students. It provides core emotional aptitude, and thus, could be viewed as an “IQ” equivalent.
- i Activity-based approaches should be adopted to eliminate gender differences

CONCLUSION:

Emotional intelligence among school children should be expanded as the pressure in the era of globalization of education is increasingly challenging the mental and physical strength of students. Failure to manage emotions will bring undesirable effects. On the other hand, emotional intelligence provides space for individuals to explore their own potential as



well as provide opportunities for individuals to adjust to the emotional self and develop the appropriate emotions in the interest of themselves and others. Individuals with high emotional intelligence are able to handle the emotional aspects of life. Emotional intelligence is enriched with spiritual elements that can educate people to be more balanced human being. Emotional intelligence is a unique field and should be fully understood before digging ahead to study other human characteristics. We reserve the right to choose the feelings, thoughts, and behaviors that we want to be controlled by our emotions.

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NUAKHAI: THE AGRARIAN FESTIVAL IN WEST ODISHA

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Introduction:-

Nuakhai or Nuankhai also known as Nabanna is an agricultural festival mainly observed by people of West Odisha¹. It is a territory in the westernmost part of Odisha² historically referred as Kosal³ extending from district of Kalahandi in the South to the districts of Sundergarh & Boudh in the north, Nuapada & Bargarh district in the west, Athamallik sub-division of Angul & Boudh district in the east. Further districts of Sonepur, Sambalpur and Bolangir in the centre, and Jharsuguda district in the northwest. Likewise, Western Odisha includes the districts of Bolangir, Bargarh, Boudh, Deogarh, Jharsuguda, Kalahandi, Nuapada, Sambalpur, Sonepur, Sundergarh and Aathamallik Sub-division of Angul district comprising ten districts and one sub-division of Angul district. Nuakhai is observed to welcome the new rice of the Kharif season in these districts. Nuakhai composed of *nua* and *khai* which means eating of new crop (Paddy). The literary meaning of *nua* is new. In this perspective, it is related to the new fruit of the season. Also, it stands for the first crop of the kharif year. It is a ritual as well as festival in nearly all the tribal and non-tribal Hindu societies found in Western Odisha, where first fruit or crop of the season is at first presented and offered to their respective deities. According to the Hindu calendar it is observed on *panchami tithi* (the fifth day) of the lunar fortnight of the month of Bhaadraba (Aug-Sep), the adjoining day after the Ganesh Chaturthi festival. This is the most important social festival of Kosal region.

After celebration of *Nuakhai Parab*, *Nuakahi Bhetghat* is made. As mentioned before, the word *nua* means new and *khai* means food, so during the time, the farmers are in possession of the newly harvested rice. The



festival is seen as a new ray of hope for the people of West Odisha, especially the agrarian community, which held one day after the Ganesh Chaturthi festival. It has also a big significance for businessmen like farmers and the agricultural community. The festival celebrated at a particular fixed time of the day which is called as *lagan*. Generally a special dish called as *Arsapitha* is prepared to celebrate this festival. When the *lagan* comes, the people first remember their ishtadevi/devta, then village god or goddess and then at last have their *nua*. Nuakhai is the agricultural festival of both for the tribal people as well as the non-tribals of the Hindu Society. The festival is observed by people of ten districts of Western Odisha. Except a few local difference, it is almost similar in all these districts. It is a festival for the worship of food grain/Anna devta.

Origin: -

The exact origin of Nuakhai cannot be said rightly. However, from the available research findings the origin can be seen in two angles, one from ancient view and the other from modern views.

i) Ancient views

According to researchers Nuakhai is of fairly ancient origin. Some researchers found the fundamental idea of the celebration can be traced back at least to Vedic times when the *rishis* had talked of *panchayajna*, the five important activities in the annual calendar of an agrarian society.⁴ These five activities have been specified as *sitayajna* (the tilling of the land), *pravapana yajna* (the sowing of seeds), *pralambana yajna* (the initial cutting of crops), *khala yajna* (the harvesting of grains) and *prayayana yajna* (the preservation of the produce). In view of this, Nuakhai may be seen as having evolved out of the third activity, namely *pralambana yajna*, which involves cutting the first crop and reverently offering it to the mother goddess.

ii) Modern views

Although the origin of the festival has been lost over time, oral tradition dates its back to the 12th century AD, the time of the first Chauhan Raja Ramai Deo, founder of the princely state of Patna⁵, which is currently part of Balangir district in Western Odisha. In his efforts to



build an independent kingdom, Raja Ramai Deo realised the significance of settled agriculture because the subsistence economy of the people in the area was primarily based on hunting and food gathering. He realised this form of economy could not generate the surpluses required to maintain and sustain a state. Nuakhai as a ritual festival played a major role in promoting agriculture as a way of life. Thus credit can be given to Raja Ramai Deo for making Nuakhai a symbol of Sambalpuri culture and heritage.

Journey from ancient to modern: -

In early years, there was no fixed day for celebration of the festival. But was held sometime during *Bhadra Sukla Pakhya* (the bright fortnight of Bhadraba). It was the time when the newly grown Kharif crop of rice started ripening. There are reasons for observing the festival in the month of Bhadrava even though the food grain is not ready for harvesting. The thought is to present the grain to the presiding deity before any bird or animal pecks at it before it is ready for eating.

In early traditions, farmers celebrated Nuakhai on a day designated by the village headman and priest. Afterwards, under the patronage of royal families, this simple festival was altered into a mass socio-religious event celebrated in the entire Kosal region. Every year, the *tithi* (day) and *lagna* (time) of observance was astrologically determined by the Hindu priests. It is found that previously priests sat together at the temple campus in Sambalpur and calculated the day and time. The *tithi* (date) and *lagna* (auspicious moment) were calculated in the name of Pataneswari Devi in the Balangir-Patnagarh area, in the name of Sureswari Devi in the Subarnapur area, and in the name of Manikeswari Devi in the Kalahandi area. In Sundargarh, Puja (worship) was first offered by the royal family to the goddess Sekharbasini in the temple which is opened only for Nuakhai. In Sambalpur, at the stipulated *lagna* (auspicious moment), the head priest of Samaleswari temple offers the *nua-anna* or *nabanna* to the goddess Samaleswari, the presiding deity of Sambalpur⁶.



Steps: -

People in the Kosal region initiate preparations for the event nearly a fortnight in advance. Nuakhai is understood to have nine colours and as a consequence nine sets of rituals are followed as a prelude to the actual day of celebration. These nine colours include:

1. *Beheren* (announcement of a meeting to set the date)
2. *Lagan dekha* (setting the exact date for partaking of new rice)
3. *Daka haka* (invitation)
4. *Sapha sutra* and *lipa puchha* (cleanliness)
5. *Ghina bika* (purchasing)
6. *Nua dhan khuja* (looking for the new crop)
7. *Bali paka* (final resolve for Nuakhai by taking the *Prasad* to the deity)
8. *Nuakhai* (eating the new crop as *Prasad* after offering it to the deity)
9. *Juhar bhet* (respect to elders and cultural programmes)

Preparation: -

The preparations begin nearly one fortnight prior to the date of the festival, when the elderly persons of the village sit together at a holy place after the *beheren* calls the villagers by blowing a trumpet. Then people get together and discuss with the priests the *tithi* and *lagan* (auspicious day and time) for Nuakhai. The priest consults the *panjika* (astrological almanac) and announces the sacred *muhurta* (a period of time equal to about 48 minutes)⁷ when *nua* is to be taken. There was an attempt made during 1960s to set a common *tithi* for the Nuakhai festival all over the Western Odisha. It was decided this was not a workable idea. The idea was reintroduced in 1991 to set the *Bhadra Sukla Panchami tithi* for the Nuakhai festival. This became successful and since then, the festival has been celebrated on that day, and the Odisha State Government has declared it an official holiday. Although for the sake of convenience a common auspicious day is set for Nuakhai, the sanctity of the ritual has not lost its



importance. Today, however, the system of setting the *tithi* and *lagna* and calling elderly persons for a consensus does not happen in urban areas⁸.

Nuakhai is celebrated both at community as well as at domestic level. After all preparations are over, there is sanctification ritual before a day of celebration, which gives credence to Nuakhai. This is known as *bali paka*. Prasad is offered to the *grama devta* or *devti* (village deity) in a ritual. It calls for the formal ruling of the festival. Everybody comes to know that divine will now governs Nuakhai and no one can stop it from being observed. The ritual is offered first at the temple of the reigning deity of the area or to the village deity. Afterward, they worship in their respective homes and offer rituals to the domestic deity along with *Lakshmi*⁹. In other words, during the stipulated time, the households also offer *nua* to their presiding deities in their homes.

Celebration: -

As told earlier, Nuakhai is celebrated both at the community and domestic level. On the day before Nuakhai, people collect the already ripened new paddy and make it, into flatten rice 'Chuda'. They decorate their houses with the banner of new paddy. On the day of Nuakhai, they prepare *nua* which is a mixture of chuda, banana, milk and gud/sugar. Then the male members of the family go to the nearest temple where they collect the *bhoga* which is offered to their village goddess. The female members offer *pujan* to their respective *ishta devi/devata*, offer rituals to their domestic deity and to Lakshmi, the deity of wealth in the Hindu tradition. After that they mix the offered *Bhoga* with their home prepared *nua* and finally all the members of the family sit together facing east and eat the *nua* (mixture of chuda, banana, milk and gud/sugar) for three times in a row remembering home god and village god. The three times represent three dimension of the body viz. physical, astral and causal. The *nua* is distributed by the senior member of the family. And also eating of *nua* is started by senior members followed by juniors. Likewise, the senior members followed by juniors move to the place of *ishtadevi/devata*, bow before them and then went to temple of the village deity. People wear new clothes for the occasion. After taking the *nua*, all the junior members of the



family offer their regards to their elders called as *nuakhai juhar*, which is also the exchange of greetings with friends, well wishers, and relatives. This symbolizes unity. This is an occasion for people to lay their differences to rest and start relationships afresh. Towards the evening people meet one another, exchanging greetings. All differences are discarded and elders are wished *nuakhai juhar*. The elders bless their juniors and wish them long life, happiness, and prosperity. Even the partitioned brothers celebrate the festival under one roof. In the evening, folk dances and songs are organized called *Nuakhai Bhetghat*.

Conclusion: -

Nuakhai is a philosophy of life particularly among the people of West Odisha. They not only celebrate Nuakhai whenever a new fruit(Paddy), comes out but also celebrate nuakhai when new fruits and seeds like mango, kandul, mahul or jahni comes to their society. The main objective of this festival is to get social sanction to a new crop, and to invoke the deities to bless the land with abundant crops. The fact of fixed time or *lagan* of observance determined astrologically by the Hindu priests also indicates the belief of astronomy by the tribal and non-tribals. Day followed by nuakhai is called as *basi* and the next day *tiasi*; Eating of non-vegetarian food is common in almost every houses those who prefer non-veg, during this religious festival. The quantity of non-vegetarian items during these days are ordinarily more. Therefore, the occasion of Nuakhai is a memorable moment for all irrespective of caste, creed, colour and economic status. It spreads love and affection, warmth and kindness all around. It binds the families in a spirit of solidarity. It unites the communities in strength of harmony. The sentimental aspect of the Nuakhai is most brilliantly reflected in the widely used nuakhai bhet ghat juhar. It is the festival of splendor and fun. It has a special significance for West Odishan people. In fact, it is a festival of thanks giving for a good harvest. Nua or new rice is offered to the deities as a mark of gratitude for a bumper harvest, good rain and a favorable farming weather.

Nuakhai is a tradition that has cultivated noble virtues of tolerance, acceptance, sacrifice, trust, affection, understanding, and social



responsibilities since a long time. It is gradually being celebrated in a big way in various parts of the India where West Odisan people migrated¹⁰. Housewives in general start preparing for the festival nearly a fortnight before by decorating and cleaning up the house and furniture, washing up utensils and clothes and collecting ingredients for special dishes to be served on the day of festivity.

One finds hectic economic activity with peasants and artisans working overtime for extra earnings. It helps them spend something extra during Nuakhai. Besides whitewashing of houses, new clothes are purchased for the festival day. Poor clean their mud and thatched houses with cow dung and clay mixed together. People with sound economy adopt the arrangements as per their capacity. Weavers churn out cheap handloom saris as part of tradition for these common people of West Odisha. With simple designs, the weavers roll out saris to make them affordable and ensure that these reach the users in time before Nuakhai. Keeping this in mind, in the rural and semi-urban areas the mahajans (moneylenders) are quick to lend money to the needy with confident that the reimbursement is certain. During these days, the daily labourers are seen working until the dawn to earn some extra money. With all households being cleaned for this annual festival, daily labourers and porters are much in demand and have seized the opportunity to jack up their wages¹¹. The carpenters and masons are also much in demand to take on repair work in households. While the men folk are seen toiling hard, women folk are found busy in making *Khali* and *Dana* (leaf plates and cups from selected plants).

Nevertheless, it is a festival, which brings friendship, equality, help, and cooperation and envisages the age-old tradition of this region. It helps to renew the social bonds. Thus, it strengthens the social solidarity. This indigenous culture ensures a separate identity for the natives of the whole region of West Odisha and binds them together. Onslaught by modern audio-video media, various foreign cultures and traditions, modernization and industrialization, etc. are unsuccessful to obstruct the rich tradition of Nuakhai in West Odisha. It is a symbol of friendship, love and affection, opportunity for exposure, etc. which give foundation, and fosters to lead a



peaceful social life. The People of West Odisha celebrate Nuakhai in such a manner that attract researchers from international boundaries.

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SOCIO-ECONOMIC CONDITION OF WOMEN POLICE

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Introduction

“In order to make any study meaningful it is essential to define clearly the concepts used”.

Almost all the thinkers are visionaries feel that state should create and preserve a peaceful and secure environment where individual may realize his/her aspiration of development in the trust sense of the term. It is also the duty of the state to protect his dignity to certain this, the institution of police and justice came into existence. The term POLICE stands for “Protection Organization for Life and Investment in Civil Establishment”. The word police have been derived from the Greek word “POLITIA” means the condition of a state or Government. Police is generally defined as the civil force responsible for maintain law and order without which there can be no development in civilization. The police organization, which at present is known as police department, is meant and constituted for the proper maintained of law and order to perform the different functions relating to criminal administration. The job of police was to maintain law and order, prevent the commission of crime and if crime has taken place, apprehend the culprit, bring him before the court of law and him convicted. It is very interesting to note that in the earlier days the duties and functions of the police has limited sphere of activities as street playing, lighting, scavenging and sanitation. Indian police system was a creation of the British. But its best in those days in India and was operated very effectively. The term police broadly denote the purposeful maintained of public order and protection of persons and property from the hazards of the public accidents and the commission of unlawful acts.



Policing in India has traditionally been considered a male domain because the policing activities require physical powers. However, the gradual induction of female members in all walks of life and professions can also be seen in the police force in India. The rising trend of crimes against women, increasing involvement of women in various crime and the problems of handling juveniles has stressed the need for women police in India. The women police in now an integral part of the police forces all over the country. A number of women have joined the Indian police service and the central police organizations. The Indian police service which had refused to accept any women earlier refused to accept any women earlier, with-draw resistance after a representation from some women conditions. The Indian police service acquired it first women police officer in 1976 ad within year it had seven police officers. The function of women police at the first instance to women suspects, accused and victims of crime. While in the case of women suspects/criminals, women police is used mainly to protect the honour of women and to save them from molestation. The first all women police station was setup in a conservation Muslim dominated in a area a of Calicut in Kerala way back in 1973 with the "Idea of making the traditional women come out of her cocoon and give up her feminine reserve in approaching the police". The need for women police has been accepted all over the world both in the developed and developing countries in view of special needs and requirements of women. Working women now show the strong internal commitment to work. They work for variety of reasons, including the need to feel useful and important. But they work mainly in order to earn money which they do not absolutely need. However in India, most of the women seek outside jobs to a great extent due to economic necessity women economic empowerment is absolutely essential for raising their status in society.

Scope of the study and its Significance:

This study analyses the economic and non-economic issues of women police in Trichy town. The economic issues analyzed are the reasons behind selection of job, levels of living of police women's household, depending ratio and expenditure pattern of household. The non-economic issues are



analyzed position of respondents in household decision making. The allocation pattern time, power of women police in their working field; how women police are differed from other working women's these are all discussed under non-economic issues. The present study made an attempt to analyse women police and also this study may help to know about socio-economic conditions of women police, working in Trichy city at a micro level.

Profile of the study

Police department divided the Trichy district into two divisions. For the sake of administration.

1. Trichy City
2. Trichy Rural

The area of the present study is in Trichy city. It is considered as the heart of the Trichy district. In this Trichy city, there are 16 police stations, among them 12 ideal police station, and 4 are all women police station. Trichy rural also is having 4 all women police station in Lalgudi, Manaparai, Musiri and Triveumbur.

The 16 police stations are located in the following places.

| | |
|---------------------|---------------|
| Cantonment | Ariyamangalam |
| K.K. Nagar | Palakarai |
| Air Port | Srirangam |
| Fort | Woraiyur |
| Gandhi Market | Thillai Nagar |
| Edemalaipattiputhur | Ponmalai |

All women police stations and Induction year

1. Cantonment - 1993
2. Fort - 2002
3. Srirangam - 2003
4. Ponmalai - 2004



In this Trichy city, there are 4 assistant commissioner office is in charge of 4 police stations. Among these 4 one is all women police station. There are two deputy commissioner offices in the Trichy city. Police head quarters for Trichy city are located in Mannarpuram.

Objective of the study:

The main objectives of the study:

1. To understand socio – economic conditions of women police in Trichy district.
2. To observe the duty conditions and problems faced by women police on duty.
3. To know of their welfare programmes and safety provided by the Government.
4. To reflect their feelings in the form of suggestions to solve their problems.

Methodology

The present study is based on primary data as well as secondary data. Primary data was collected through personal interview method. Secondary data was collected from the commissioner office. The size of the sample strength of the all four women police stations is 50. These entire 25 samples have been selected for this present study.

Statistical Tools

Statistical tools like simple percentage ratio bar diagram, pyramid diagram have been used.

Limitations of the study:

The sample size of the present study is very small. So it conclusion cannot be generalized.

Due to heavy restrictions of police department I was not able to collect the sufficient data.



Due to lack of time, physical and financial constraints, it is difficult to cover the division in Trichy district.

Review of literature

“Women in India have not only reached the highest positions, have not only got equal political, economical and civil rights without struggling for them, they rights without struggling for them. They are increasingly joining for higher ranks of administration and the various other public services and educating themselves with credit.

Mangai Natarajan, (1996) reveals that twenty-nine all-women police units have recently (1994) been established by the Tamil Nadu State Police in South India. These units generally consist of 15 women constables and 2 sub-inspectors under the command of an Inspector. They mainly deal with family-related disputes and cases involving women and children, but also serve the full range of general police functions. The units were established for two main reasons: (i) to engender trust in the police among women victims and (ii) to provide an independent career structure for women police officers. Interviews with officers in five of these units revealed a high level of satisfaction with the work and the career prospects. Many more of the women in the units than in a general sample of women officers questioned in 1988 expressed interest in performing the full range of police duties, but they also said they would like to do this in units staffed only by women. More detailed evaluations of the units are needed to see how far the units address the needs of women police officers in 1traditional cultures¹.

Significance of women:

Vandana Kumari (1989) feels that, if a nation is to develop, it is essential that the basic standard of living of the people is elevated. This cannot be achieved unless women who constitute half of the nations development is taken care of and women have adequate opportunities to be active participants in the development and become agents of change and beneficiaries at the same time².



Women Employment:

Nlshol (1975) carried out a research women's economic empowerment is absolutely essential for raising their status in society. Traditionally, India women have a dependency syndrome as for as employment is concerned.

All working women do not constitute a single homogeneous group. Similarly each occupation has got its own contribution to society and therefore each occupation varies in degree in changing the socio-economic position of women³.

Job Participation:

According to Dixon (1996) class caste influence women's participation in outside homework. The committee on status of women in India reports that social attitudes and social institutions influence women's labour force participation⁴.

Anantram and Desai (1997) said that one of the major reasons for women entering in to job market is economic consideration either as Dire necessity or for supplementary the family income⁵.

Crime against Women:

Ghosh said that, in this 21st century, when the whole world is awakening to the call of enlightened feminism. Indian still wallows in the swim of primordial misogyny. In many parts of our country, women are still considered to be burdens some appendage. She is and economic drain. She must be exploited (or) dispensed with as a non-person because she crushes her family with marriage and dowry expenses. Rape, molestation, kidnapping and abduction, eve teasing, dowry death and bride blooming, cruelty act and criminal offence these all are considered to be a crime against women. In response to the question reality to the role played by women police in case pertaining to rape, un-natural deaths of women. Family disputes, juvenile delinquency and immoral trafficking in women, all states have categorically stated that the work of women police is very useful in these area⁶.



Sharma (1994) pointed out that the special cells deal with such crimes set up in a number of states with different names will also have to play an active role in the coming years. The state Government, which is yet to setup special cells to take care of the crimes against women, may follow the examples setup by the states like Andrapradesh, Delhi, Karnataka, Orissa, Punjab and U.P.⁷.

Police Women:

Policing is generally viewed as suitable for men. Entry of women to police force therefore has been a "favoured entry – entry favoured by the Government"

Shamin Aleem (1991) points out the working conditions of police women in India and she feels that the distribution of women police in that state is not rational. She regrets that the annual reports of the police department do not mention about police should be given independent powers and responsible jobs⁸.

Ravindran Nair (1989) states that Women Police officers serve as social workers in uniform. He substantiates his opinion by pointing out how Kiran Bedi, the first I.P.S officer in India has taken steps to rehabilitate families of convicts and has organized de-addiction camps and for the drunkards. He feels that women can both love and punish criminals and children and change their activities⁹.

Police Image:

Unfortunately due to a variety of reasons, some of them historical the police do not enjoy adequate support and confidence of the community the public view the police as the long arm of the state that "harasses and not befriends them". Today the police are feared by the common man, misused by rich and powerful for their selfish ends, pilloried by the press and made a Scapegoat by the party in power.

Indian Police Act of 1861:

The Indian police act of 1861 was one of the two important landmarks in the history of the police for the following reasons. In the first place, it had recognized the police of the whole of British India and placed them on a

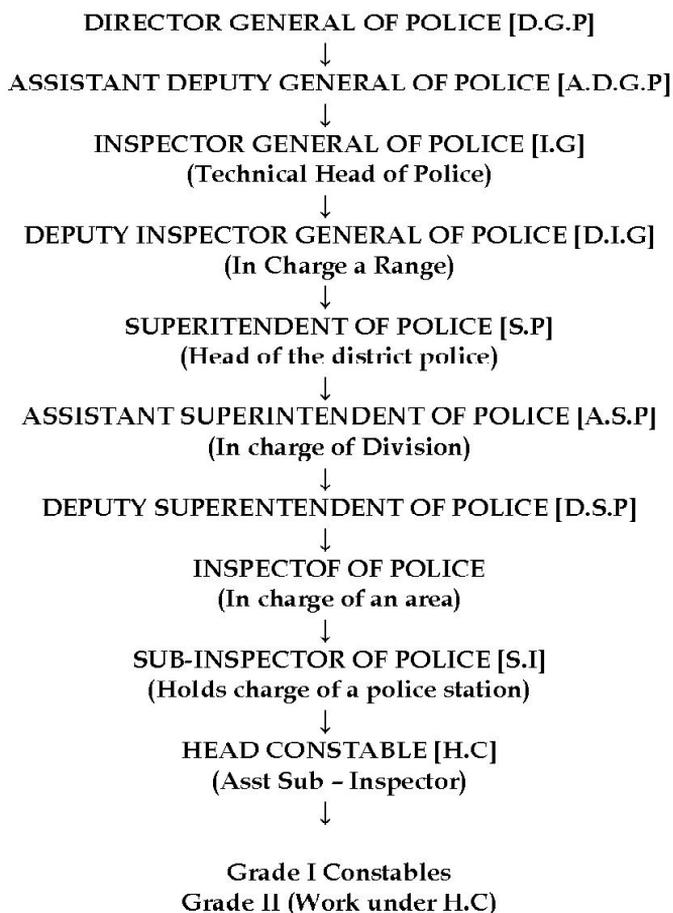


uniform basis. Secondly it has a feature with future and as such it formed the basis of future and as such it formed the basis of the police structure in India even to-day.

Pleasure and Pains of Working Women:

All members of the household share this. But the pain in the form of conflict in playing the dual roles fall heavily on women who do not head, the household due to hierarchical social set up. Women's employment is approved, because it lessens financial burden and raised standard of living. Performance of these two roles results in problem to them. The problem becomes more acute when working hours are not fixed.

The following is the hierarchical setup of police Administration in Tamil Nadu.





Functions and Pains of Women Police:

The need to have women police increased with rising number of women accused, criminals and victims of crimes. To deal such crimes against women properly women police play a great role. The rate increase in crime committed by women and juveniles and crimes committed against women and juveniles necessitated the use of women police.

Functions:

Policewomen have been found useful and acceptable to the public to discharge these function like:

Guarding over female prisoners in police lockups. Arrest of female suspects and searching of female prisoners. Escorting of female prisoners to court, hospital and prison. Recovery of missing women, girls and juveniles. Protection of neglected and unwanted children, victims of cruelty. Investigation of certain crimes committed by women, (For E.g; shoplifting, theft by domestic servants, fraud, kidnapping, infanticide, immoral, trafficking in women and girls; dowry deaths when mothers-in-law and sister-in-law are usually involved along with husbands, and crime against women, namely, rape molestation, cruelty on women and girls, etc.) Investigation of complaints which in that women involving. Execution of warrants and service of summons for females. Control of political and labour demonstrations by women. Surveillance of women criminals and juveniles. Tracing of and location after stray and run away female. Inspection and watching over brothels. Undercover work involving clandestine prostitution, immoral trafficking in women and girls and conducting raids in brothels, hotels and private apartments for allowing premises to be used as brothels. Inspection of fescue and protective homes, women words in prisons. Liaison works with juvenile courts. Liaison works with social women welfare organizations. Counselling in domestic/disputed discords.

Pains of Women Police

The main problem of women police in uncertain working hours. Because they have no fixed hours of duty. They may call back to duty at



any time even if they have returned just then from one duty. So they are not able to concentrate their family's welfare. Basically our society is a tradition bound society. It never recognizes women as equal to men. Even though women having efficient skill than man women are given only the back seat. The problem is more acute in the case of married women with small children they have the feeling that they are leaving their family members, while they go to out of station. They even do not bother about loss of personal care time. Police service is a 24 hours service. Here there is no time spend on personal care. So they are seriously affected by some health hazards like ulcer, sugar, weight losing, obesity, vision problem etc. Police women do not have week end holidays and sometimes they lose their "Day offs" if any urgent work arises, sometimes they are not able to attend important functions which are related to husband side. This leads to many problems between husband & wife relationship. Even in the 21st century, our society is not having a good opinion about them. Most of the males are not ready to marry a policewoman. Even though they married policewomen, after they compelled them to leave a job. It will discourage and disturb her skills and interest. Most of the family members are not ready to accept their daughter or daughter-in-law or wife, they came at late night to the house. In a male dominated society, women naturally do not receive the same encouragement in policing as they do it as well as in other fields also, for the police is considered as male's domain. During the launch of women police there is no night round for women police. But now- a-days women police also engaged in night-rounds, it may cause many problems in the life of women police and it also lead to some health hazards.

Results:

This chapter summarizes the findings drawn from the analysis of data collected from 25 sample police women working in Trichy city women police stations. Most of the respondents are giving their salary to their in-laws or husband. But this method also welcomed by the respondents. In my study, 30 percent of the respondents married the same profession. Due to economic reasons majority of the respondents prefer this job. Only 20



percent of the respondents have selected this job out of their own interest. Majority police women have freedom to earn but no freedom to spend, because they are in the clutching of their husbands. Women police are not ready to leave the job, even though hesitation arises from their family members. In decision making, the police women's role is very manger. Even though, they are working in police department, they suggest the jobs like teacher nurse, doctors, etc are more congenial for women. Women police are not recognized by the higher male officers even their performance is very well. Majority of the respondents leads a budget life. From my study, man is still viewed as potential and primary earner and woman as secondary earner how much great her contribution may be involved in their life.

Majority of the respondents are not in favour of their job due to inconvenience, even though they done their duty efficiently. Women police do not receive the same encouragement from the higher male officials, even they performed very well. Police women are not giving any importance to the caste. So they accept inter caste marriage. Only 10 percent of the respondents are from police families, this reflects that, even a police man also not ready to recommend this job to their daughters. One third of the respondents are not satisfied with their salary while comparing their working hours. Majority of the respondents are not satisfied with their salary while comparing their working hours. Majority of the respondents are leaving their children with their parents due to lack of time to take of their children. Even after a marriage, one third of the respondents are helping their parents economically. Most of the respondents are very conscious about their children's future. So that they are very much interested in savings like LIC, F.D, P.F, CTD etc. Majority of the life partners of the respondents, share their household works. During the school days itself, all the respondents having the tendency of going to a job. Majority of the respondents are belonging to nuclear families, due to lack of understandings and adjustments among the family members. Only a very small proportion of the respondents have spent more than what they have earned.



Conclusion:

“In every conclusion, there will be one Solution”

From my study, I came to a conclusion that, even though, the police women are not recognized by the society, the recruitment of police women is in a rising trend. The main drawback of the police department is that all higher posts are manned by male officers. “Where there is a will, there is a way.” So women should come forward to change this trend. When women are equally occupying the higher posts, then only all women will be very productive and honour to work as women police. If once changes are given to women, they can bring about changes in the society in the right direction. I hope that, in the near future women will acquire everything just as a man gets and there will be no discrimination on the basis of Sex. Their report may not be an instrument in bringing about a social change. It is expected that it may be instrumental in bringing about a change in the attitude of those who have a chance to read it.

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INTELLECTUAL PROPERTY CONTRAVENTION AND UNFAIR COMPETITION CONSIDERATION IN JEWELLERY INDUSTRY

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The article aims to explore the best mode of intellectual property protection for jewellery design and analyzes copyright, trademark, and unfair competition law as applied to 'inspired' jewellery designs. It also explains the necessary elements for establishing a claim under each area of law and provides practical tips to avoid legal problems in these areas.



In the jewel industry there are many who have bumped into similar problems in the past. To succeed in a competitive scenario with international players in the field, Indian jewellers need to think proactively and radically in protecting their Intellectual Property (IP). IPR is legally fragile, meaning that once the owner's right is lost or compromised, it is extremely difficult to, if not impossible; to recover those rights. This purports the needed for an overall awareness and understanding of the effective management of IP amongst the Indian Jewellery Industry. Some of the tools in the management of intellectual property significant to the jewel industry are: Trademark, Copyright, Designs and Trade secrets.

With rising standard of living, there has been a shift in people's perception about the jewellery. The importance that the consumer attached with the weight, is now been shifted to designs. The change has had another byproduct, that is, emergence and growth of jewellery designers in the industry. With creativity coming into the picture, and the industry blurring all political boundaries, it becomes pertinent to know about intellectual property right. Like any other creative field, jewellery designers too, need to protect their designs from being copied.



Designers should be cautious when attempting to evoke the designs of others and emphasize their jewellery's originality and distinctiveness to avoid legal problems down the road. The dominant concern of the law protecting designs of useful articles has been to keep design and utility separated. Our system, in the interest of enhancing competition, allows and indeed encourages imitation, unless the imitated object is entitled to be immunized from copying by qualifying for a copyright, or for a patent, or for protection from competition that is legally considered unfair.

Jewellery design is determined by its own legal characteristics. Protection of designs is classified under the Patent Law, while statutes on industrial design are clouded by a term 'works of applied art'. Innovative jewellery designs or manufacturing techniques have a particular value to its creator and as such they should be guarded against their unauthorised use by filing patents with proper governmental agencies. The designer should understand the importance, difference and application of Patents, Trademarks and Copyright etc.

India does not have a law specialised in protecting industrial designs. The inexplicit scope of protection leads to confusion regarding the operation of protection system. Much of the researches are library and internet based.

Copyright

Copyright holders own a bundle of exclusive rights in their original works, including rights of reproduction, distribution, and the right to create additional works derived from their originals.

Thus, someone other than the copyright owner, who reproduces or distributes a copyrighted product without the owner's authorisation and who can be shown to have had access to the infringed product either directly or circumstantially, would be subject to penalties for infringement. Since most jewellery items comprise non-original designs already in the public domain (circles, squares, loops, etc.), many copyright disputes involving Jewellery focus on the factual determination of whether the combination of several common elements in a piece of Jewellery is sufficiently original such that the piece deserves copyright protection.



Validity and Protectability

Though a work's protectability under copyright law does not require federal registration, such registration is prima facie evidence of a design's originality.

The burden thus shifts to an alleged infringer to prove that despite the designer's federal registration, the design in question is either insufficiently original or is simply not a copyright-protectable creation.

In *Van Cleef & Arpels Logistics, S.A.V Jewellery*, the court held that one of Van Cleef & Arpel's designs, a military clover insignia, was copyrightable. The court came to this conclusion, despite the commonness of the quatrefoil shape and metal frame, because the arrangement of the elements was sufficiently original. Once a valid copyright in the military clover insignia was established, the Court determined that the Defendant's Jewellery was 'substantially similar' to Van Cleef's copyright protected design and was therefore infringing. The determination was made under the following two-part test:

- (1) Whether the Defendant's product's ideas, patterns, themes, organisation, and other objective details were substantially similar to those of Van Cleef, the original designer, and
- (2) Whether a lay observer would find the 'concept and feel' of the Defendant's product designs to be substantially similar to those of Van Cleef's.

Alternatively, the court in the case of *Herbert Rosenthal Jewellery Corp. v/ s Honora Jewellery Co.* held that while a determination of substantial

similarity should be based on an average lay person's observation, circumstances may require further examination.

Alternatively: *Herbert Rosenthal Jewelry Corp. v/s Honora Jewelry Co.:*



- P's Claim: Manufacturer of jewelled turtle pin, which was made of nugget gold and which contained 10 gems on the turtle's back, brought action against D for copyright infringement.
- D's Claim: In nature, a turtle has at least 10 vertebrae segments on its shell, so this was not evidence of copying.
- Outcome: P's pin was not infringed by D's jewelled pin, which was made of similar material and which also contained 10 gems on the turtle's back, but which had slightly different design with respect to turtle's head, feet, and tail.
- Rationale: The court analyzed each of the pins shell markings, manufacturing methods, metal thickness, and even whether the turtle's head had a mouth. The inescapable characteristic of a turtle – its shell—limited the extent to which a designer could deviate from another's design.

Purpose of the copyright laws is to protect original designs from being copied, not to convey to the proprietor any right to exclude others from the market place for similar items. The court noted the possibly inferior characteristics of the defendant's example. Predictably, the court granted



the defendant's motion for summary judgment and, held 'there is nothing anyone can design or manufacture which someone else cannot make worse and sell for less.'

Nevertheless, these 'substantial similarity' considerations warn 'inspired by' jewellery designers that protectable 'creations' require a minimum amount of originality. If a designer fails to meaningfully distinguish their 'inspired by' design from an original work it will likely raise infringement concerns. It is the size, shape, proportion, and ornamentation of products that will be compared to the original producer's design.



Tacori-crescent-copyright-trade-dress-tro-jewellery.

Damages

The Copyright Act of India provides rightholders following legal gears for enforcing their rights.

- (1) The Copyright Board and
- (2) The Courts.

Legal remedies include imprisonment and/or monetary fines - depending upon the gravity of the crime.

The infringement of copyright is considered as an offender and is punishable with a minimum of six months imprisonment that may extend to three years and a fine between 50,000 to Rs 2 lakhs. The 1994 Amendment has incorporated a special penal provision for knowingly using and infringing computer software. The punishment provided for this act is

imprisonment for a term of seven days to a maximum of three years and a fine between 50,000 to Rs 2 lakhs. In case the infringing copy of the computer software is used not for pecuniary gain or in the course of trade or business, the imprisonment can be relaxed and fine can maximum go up to Rs 50,000.

In calculating these statutory damages, the law allows the court to increase or decrease the total amount based on the nature of the infringement itself. If the court finds willful infringement of a copyrighted design, it has the legal authority to increase the statutory damage award.



Trademark:

Trademark protects the unique brand name of your company, the product names, logo, certification marks used to vouch the quality of the products, domain names, etc. This creates a goodwill and distinct identity for your company and its products amongst others in the jewellery industry.

Trademark protection reflects similar considerations to copyright law. In the case of 'inspired by' jewellery designs, trademark concerns deal largely with the products particular 'trade dress.' Originally, the definition of trade dress was confined to the overall appearance of a products packaging or 'dressing'. Gradually, this definition has expanded to include the design of the product itself. According to the Trade Marks Act, 1999, "Trade mark means a mark capable of being represented graphically and which is capable of distinguishing the goods or services of one person from those of others and may include shape of goods, their packaging and combination of colours."



Trade dress

A trade dress artifact serves as a source identifier when consumers recognize a product's trade dress and immediately associate the product with a particular business or manufacturer. Any of the above-mentioned things copied, shall, unless the person proves that he acted without intent to defraud, be punishable with imprisonment for a term not less than six months but that may extend to three years, and with fine not less than Rs 50,000 and that may extend to Rs 2 lakh.

A Jewellery design's trade dress consistently includes the combination of general elements that, when taken as a whole, combine to create a unique and distinct source identifier. Just as under Copyright Law, each individual aesthetic feature may not be protectable, however, the overall impression created through their combination may be. For example, a standard circle with a gold chain will most likely not be protectable for trade dress. However, an otherwise simple design could be protectable under trade dress law if it had a few additional specific elements such as three strategically placed diamonds or special engravings.

In order to succeed on claims for trade dress infringement, a plaintiff must prove two factors:

- (1) that their design is non-functional
- (2) and their design is distinctive or has acquired a secondary meaning prior to the alleged infringer's entry into the market.

Functionality

Functionality is the quality of serving some useful purpose. For example, a chair manufacturer cannot claim the four legs of its chair as a trade dress. Those four legs are a useful and functional aspect of that chair. Should a competitor come along and make another chair that has four legs, the competitor has not infringed on the manufacturer's trade dress because those legs serve a purely functional purpose.

Whether Jewellery design is functional will depend on the effect that protecting a specific design may have on marketplace competition.



Court's decision is usually focused on how the purchasing public sees an item or design and then relates that visual picture to a single company. The courts allowed a claim of trade dress infringement to be based on two concepts (one of which had to be proven for an action to be considered infringement):

- The product or item must be 'inherently distinctive' in design, such that the purchasing public would immediately recognise the product or item as associated with a single (although perhaps anonymous) source.
- Alternatively, through sales and advertising over an extended period, the design of the product or item must have acquired distinctiveness, that is, recognition that it comes from a single source, for which the legal term 'secondary meaning' is applied.

The Supreme Court ruled that trade dress in a product design could never be classified as 'inherently distinctive' and is therefore protectable merely by its own image. Rather, it was declared that a party asserting trade dress infringement of a product design must always prove that the product design had acquired distinctiveness through well-established exposure in the marketplace and therefore had true secondary meaning.

Thus, for a jewellery design to be protectable under current trade dress theory it must be shown to have achieved secondary meaning as a source indicator well beyond its ornamental appearance.

Thus, protection for unique jewellery configuration designs by means of trade dress is very difficult to obtain. A jewellery product design must be specific and detailed even to be eligible for trade dress protection. Consequently, from a legal standpoint, conflict may be unavoidable. If the jewelry design is too generalised, it is not eligible for trade dress protection; but if it's too detailed it will, in most instances, convey only an ornamental impression rather than a source-indicating impression and won't be protectable by trade dress.

For jewellery designs and configurations, trade dress should be considered the last legal vehicle by which to protect the design. Copyright



protection is available for jewellery designs that are sufficiently creative and artistic.

Design patent protection, which focuses on the ornamental look of a product, is available for designs that are new and sufficiently different compared with earlier designs. Copyright or design patent protection is far simpler to obtain than trade dress protection and can be more easily enforced.

Uniqueness

Once a plaintiff establishes the non-functionality of its design, it next must prove that its design has acquired distinctiveness through secondary meaning. This requires establishing that the combination of elements in the design identifies the claimant's brand as the responsible brand, and that the general public actually identifies the design with the brand. Several factors are considered, including:

- (1) Consumer surveys;
- (2) Evidence of intentional copying by the defendant;
- (3) Advertisement expenditures;
- (4) Sales success;
- (5) Length and exclusivity of use; and
- (6) Unsolicited media coverage.

Due to the factual intensity involved, judicial determinations of secondary meaning are unpredictable. Jewellers with particularly famous designs, however, can take advantage of this fact-specific determination by conducting surveys, producing their advertising budget, and producing sales receipts to support their argument in favour of finding distinctiveness.

Damages

Artistes who successfully sue for trade dress infringement are entitled to recover the defendant's profits resulting from sale of the infringing goods, any damages the artiste suffers as a result of the infringement, and the costs of the action. Just as with copyright infringement, whether the trade



dress infringement is found to be 'willful' provides the court some discretion in adjusting the damage award. Willful trade dress infringement can result in a damage award being increased threefold.

Common law unfair competition, by nature, is a much broader claim than trademark or trade dress infringement. A claim of common law unfair competition simply consists of an allegation that a competitor's product will mislead the public into believing that the competitor's product was actually designed by the original producer.

In the absence of any explicit claims of sponsorship, affiliation, or endorsement from another jewellery designer, the original designer would likely not succeed on a claim of common law unfair competition.

Despite the difficulty in proving claims of unfair competition, a successful claimant may obtain:

- 1) An injunction of further use of the offending product,
- (2) An award of actual damages including special damages and loss of profits,
- (3) Punitive damages,
- (4) An accounting to the injured party by the offending party for all profits arising out of the offending product's sale, and
- (5) The destruction of any offending objects still in the offending party's possession or control.

Conclusion

The relationship between high-end Jewellery designers and their copy-cats present unique issues for adjudication in copyright infringement, trademark infringement, and unfair competition cases due to the fact that many high-end jewellery designs consist of a combination of elements that exist in the public domain. Alone, these elements would not qualify for protection under either copyright or trade dress law, but when combined they may qualify for both. Such determinations are highly fact specific,



and may present interesting quandaries for students, legal professionals, judges, and the increasingly prominent field of intellectual property.

To avoid legal problems, Jewellery designers should:

- (1) Err on the side of caution when attempting to mimic any preexisting design;
- (2) Refrain for associating the piece with the brand responsible for any preexisting sources of 'inspiration'.
- (3) Emphasise the piece's origin with the Jewellery designer's enterprise.
- (4) IPR gives Legally, registration guarantees monopoly right over your intellectual property.
- (5) It enables you as a matter of right to restrain or claim damages from offenders who copy, imitate or dilute your IP in any manner.
- (6) Registration recognizes the time, effort and money you spent in creating the intellectual property.
- (7) Registration not only helps harness the human creativity, thought and inventiveness which is found in abundance in the Jewellery industry, but also aids in making strategic decisions for enhancement of your economic benefits.
- (8) It helps sustain the innovative spirit in your business.

The conclusion is brought that the mode of "specific law protection" is strongly requested and supported. Moreover, in the paper several macroscopically and microcosmic suggestions are given to Jewellery enterprises, so that the Indian Jewellery designs can enjoy a more suitable and powerful intellectual property protection.

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REGENERATION IN BRAKING SYSTEM

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INTRODUCTION

As the global economy strives towards clean energy in the face of climate change, the automotive industry is researching into improving the efficiency of automobiles. Electric vehicles Electric Vehicle (EV) are an answer to the crisis the world is about to face in the near future. But the question that is being constantly asked is , how can the driving range of electric Vehicles be increased? The answer to this question lies in the success of the research for an efficient and power packed energy source like a magic battery or success with fuel cells, efficient regenerative braking systems etc. In conventional braking system, kinetic and potential energy of a vehicle is converted into thermal energy (heat) through the action of friction. Studies show that in urban driving about one-third to one-half of the energy required for operation of a vehicle is consumed in braking. With regenerative braking, this kinetic energy can be converted back into electrical energy that can be stored in batteries for reuse to propel the vehicle during the driving cycle. Therefore, regenerative braking has the potential to conserve energy which will improve fuel economy while reducing emissions that contribute to air pollution.

In regenerative braking system kinetic energy of available

$$= \frac{1}{2} * m * (v_2^2 - v_1^2)$$

This kinetic energy is to be converted in electrical energy

$$\text{Electrical energy} \int_{t=0}^{t=end} (E_k - I(t) R(t)) I(t) dt$$

Where,

E_k is the battery voltage, $I(t)$ is the battery current, $R(t)$ is the charging resistance, V_1 is the initial velocity, V_2 is the final velocity.



STUDY OF GEAR BOX FOR REGENERATIVE BRAKING SYSTEM

In order to improve the effectiveness of regeneration, it is preferable that the majority of braking at high speeds be regenerative. The reasoning behind this strategy is that higher generator torque is necessary for braking at higher speeds, which conveniently allows for higher battery charging efficiencies. At lower speeds, relatively little current is being produced by the generator to ensure desirable battery recharge efficiencies. Therefore, at these speeds, the frictional brakes are applied to decrease electrical cycling through the generator and batteries. It has been implied that the life of the electrical system, especially the batteries, is adversely effected by this 'micro-cycling' process where the battery pack is subjected to short-term charge and discharge cycles, thereby reducing life and efficiency. So for this to be happen we have included a gear box with following design specifications.

GEAR BOX DESIGN

We have motor of 50 rpm (2N-m torque) & alternator of 250rpm. Braking system rotates at 80 rpm. This braking system is attached with a gear.

PROBLEM

When no gear box is attached with the gear box it rotates at 80 rpm and produces 21 volt.

GOAL/OBJECTIVE

Our main objective is to increase the speed of generator in order to produce maximum voltage.

PROCESS

In order to increase the speed of alternator we have to use different gear.

Let the module of the gear is 5mm (from data book).

$$\mu_1 = 410 \text{ mpa}$$

$$\mu_2 = 200 \text{ mpa} \quad (\text{from data book})$$

Let gear ratio is 3 (in order to reach the maximum ratio).

Minimum No. of teeth on pinion to avoid interference = 18 (from data book)

Calculating no of teeth on the gear = $18 \times 3 = 54$

Now pitch diameter of pinion

$$\begin{aligned} d_1 &= m \cdot Z_1 \\ &= 5 \cdot 18 \end{aligned}$$



$$= 90\text{mm}$$

Pitch diameter of gear = D2

$$= 3 \times 90$$

$$= 270\text{mm}$$

Now calculating Lewis form factors

$$Y = 0.154 - \frac{0.912}{Z}, \quad (\text{for } 20 \text{ FDI})$$

For pinion,

$$= 0.154 - \frac{0.912}{Z}$$

$$= 0.1033$$

For gear,

$$= 0.154 - \frac{0.912}{54}$$

$$= 0.154 - 0.0168$$

$$= 0.1386$$

Now checking for weaker-

$$\mu_1 * y_1 = 410 * 0.1033$$

$$= 42.35$$

$$\mu_2 * y_2 = 200 * 0.1386$$

$$= 27.72$$

Since, $\mu_2 * y_2 < \mu_1 * y_1$

So gear is weaker and will be designed further

Calculating pitch line velocity

$$V = \frac{\pi * d_1 * n_1}{60}$$

$$= \frac{\pi * 90 * 240}{60 * 10^3}$$

$$= 1.133 \text{ m/s}$$

Calculating tangential load

$$F_t = \frac{10^3 * P}{V}$$

$$= \frac{10^3 * 0.1}{1.13}$$

$$F_t = 88.49\text{N}$$



Taking service factor from table

$$C_S = 1.5$$

Taking load distribution factor-

$$C_m = 1.3$$

Calculating maximum load-

$$\begin{aligned} F_{t_{max}} &= C_S * C_m * F_t \\ &= 1.5 * 1.3 * 88.49 \\ &= 172.55\text{N} \end{aligned}$$

Calculating velocity factor

$$\begin{aligned} C_v &= \frac{3.05}{3.05 + v} \\ &= C_v = \frac{3.05}{3.05 + 1.13} \\ &= 0.729 \end{aligned}$$

Calculating effective load-

$$\begin{aligned} F_{eff} &= \frac{F_{t_{max}}}{C_v} \\ &= \frac{172.55}{0.729} \\ F_{eff} &= 236.9\text{N} \end{aligned}$$

Calculating beam strength of gear teeth

$$F_b = \mu_{2d} * \pi * y_2 * m * b \quad (\text{here } 2d \text{ is design stress})$$

Taking factor of safety = 3

$$= \frac{200}{3} * \pi * 0.0168 * 5 * b$$

Now calculating face width of gear-

$$\begin{aligned} F_b &= F_{eff} \\ 17.504 * b &= 236.69 \\ b &= 13.5\text{mm} \end{aligned}$$

The limits for face width are-

$$\begin{aligned} &1.5 \text{ m so, } 1.5 * 5 \\ &= 7.5\text{mm} \\ &4.5\text{m so, } 4.5 * 5 \end{aligned}$$



$$= 22.5\text{mm}$$

So we will adopt 14mm as face width

Design for dynamic load-

$$F_d = F_{t_{max}} + F_i$$

$$F_i = 20.67 * v \left[\frac{C_b + F_{t_{max}}}{20.67 * v + (C_b + F_{t_{max}})^{1/2}} \right]$$

Let us assume grade 6 gears for which

$$C = 8 + 0.63(m + 0.25 * \sqrt{d})$$

For pinion

$$e_p = 8 + 0.63(5 + 0.25 * \sqrt{90})$$

$$= 12.644 \mu\text{m}$$

$$e_g = 8 + 0.63(5 + 0.25 * \sqrt{270})$$

$$= 17.73 \mu\text{m}$$

$$e = e_p + e_g$$

$$= 12.64 + 17.73$$

$$e = 30.37 \mu\text{m}$$

$$E_p = 207 \text{Gpa} \quad \text{for steel}$$

$$E_g = 114 \text{Gpa} \quad \text{for FG200}$$

$$V_p = 0.29 / V_g = 0.26$$

$$k_1 = 9.00 \quad \text{For 20'FDI}$$

$$F_{t_{max}} = 172.55$$

Dynamic Factor based machine error

$$C = \frac{e}{k_1 \left[\frac{1}{e_p} + \frac{1}{e_g} \right]}$$

$$= \frac{30.37}{9 \left(\frac{1}{12.64} + \frac{1}{17.73} \right)}$$

$$= 24.90 \text{N/mm}$$

$$F_i = 258.80 \text{ And } F_{t_{max}} = 172.55$$

Now,



$$F_d = F_{t_{max}} + F_i$$

$$= 172.55 + 258.80$$

$$F_d = 431.35 \text{ N}$$

$$Q = \frac{2T_g}{T_g + \tau_g}$$

$$= \frac{2 \times 54}{18 + 54}$$

$$Q = 1.5$$

Load stress factor

$$K = 0.02413 \left(\frac{\text{BHN}}{100} \right)^2$$

$$= 1.508 \quad (\text{BHN} = 250)$$

Calculating wear load

$$F_w = d_p * b * QK$$

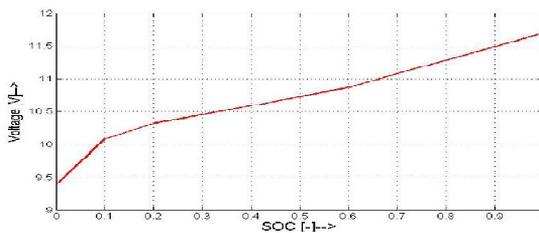
$$F_w = 319 \text{ N}$$

Since, $F_w < F_d$

Hence design is safe.

CONCLUSIONS

The given graph represents the increment in voltage after using gear box in braking system vs charging of battery.



From the electric motor-generator's perspective, each motor-generator manufactured comes with a certain limitations in the maximum amount of motor-generator torque using gear box the speed of generator has been increased which has full fill or requirement as higher generator torque is necessary for braking at higher speeds, which conveniently allows for higher battery charging efficiencies. At the same time battery life also has been increased.



META- ANALYSIS OF DROPOUT RESEARCHES AND THEIR IMPLICATIONS

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Introduction:

Education is the main plank of progress. Societies and nations can progress only by the promotion and progress of the education sector. It leads to a balanced and all round development. In the present system of education, it is the elementary stage which is the most crucial stage of education as it lays the foundation for the personality, attitudes, self-confidence, habits, learning skills and communicating capabilities of the pupils. In India education to all children has been made a fundamental right under the Right to Education Act (RTE) 2009, which came into force in 1 April 2010. There is an obligation for making available free and compulsory education to all children in the age group of 6- 14 years under Article (21, A) of the Indian constitution. The government of India has adopted a number of schemes like Mid-day Meal, Sarva Siksha Abhiyan (SSA), National Programme for education of Girls at elementary Level (NPEGEL), Kashturba Gandhi Balika Vidyalaya (KGBV) etc. to achieve to goal of universalization of elementary education, but unfortunately the goal is remain elusive due to the high dropout rate. Access, retention and quality are the three important concerns of elementary education in our country. Government claims to achieve about 98% access which looks exciting but ground realities do not conform to this figure. However, dropout problem is still a stigma to our education system and a hurdle in providing the basic right of the child to receive reasonable quality of elementary education up to the age of 14 years. The problem of dropout varies from state to state, region to region, and district to district even in the same district state. It vary also in regard to the socio- economic background, different religious communities, Schedule castes (STs) and schedule tribe(SCs) , other disadvantaged section of the society.



Definitions of Drop-out:

According to Glatter and Wedell (1971), the term 'Dropout' refers to the proportion of students who enroll for the course but withdraw before examination".

Goods Dictionary (1973) Dropout for an elementary and secondary school level is one who had been a regular student and who withdraws from the school and fails to complete the designated programme of studies for any other reasons except death or transfer to another school.

Gruskin, Compbell and Paula (1987) A Drop out is defined as a pupil who leaves school for any reason except death before graduation or completion of a programme of studies and without transferring to another school.

Dropout is not a mere problem that effects or impacts an individual but it is a problem that affects the entire community as it has been noticed that certain dropouts get involved in crime (Jamil et al; 2010). Dropping out of children from schools has been viewed as a serious educational and social problem. As India is committed to the creation of a secular, socialistic and democratic pattern of society, this dream can be realized only if we are able to provide educational opportunities to every member of the society. Even after more than 64 years of independence we have not been able to control the higher dropout rates in elementary education system. However, dropping out from the school before completing the prescribed courses is neither desirable for the individual nor for the society as a whole. As a result of substantial rates of dropout and poor quality of primary education, many children are leaving schools without acquiring the most basic learning skills (UNICEF 2009).

The problem of dropout has been probed by researchers

Das (1969) studied the wastage and stagnation at elementary level of education in the state of Assam and concluded that the rate of wastage and stagnation among girls was higher than that of boys. Pillai et al (1980) conducted a study of drop-out in primary school in Kerala and revealed that the percentage of drop-out was higher among boys than girls and also



higher in SC, ST and other backward communities. The causes were ill health, household work and poverty. Sharma (1982) in his study found that the wastage rate of SC's girls was higher than others. A comparative study of educational wastage in urban and rural areas conducted by Dass (1975) revealed that wastage and stagnation in rural areas were significantly higher than in the sub-urban areas; in case of stagnation, the percentage was lower for girls in urban areas but higher in both the sub-urban and rural areas in comparison with boys. Punalekar (1975) carried out a study among Harijan children and concluded that the main reasons for dropout were the economic hardship of the family, ill health in the family or of the child. A pilot investigation on school drop-out reasons was carried out by Sarkar (1980) who reported that domestic work, inadequate income, and lack of parents' interest were responsible factors of drop-out rate. Mathur et al. (1982) found that poor financial position, parental ignorance, frequent migration of parents, involvement in work, lack of interest in studies and failure in examination were the reasons of drop-out as well as non-students. Devi (1983) reported that there was no uniformity in the rate of drop-out for the whole primary stage. In comparison to boys more girls dropped-out, due to poverty, frequent transfer, repeated failures and negligence of parents. Another similar study conducted by Pratinidhi et al. (1992) found that there was no significant difference in overall drop-out rates by both sexes. However it increased sharply in 11 years age in case of girls. The study also revealed that majority of children dropped-out due to financial problems or unsatisfactory scholastic performances. A similar study conducted by Hussain (1982) on wastage and stagnation in primary school of rural areas of Bhilwara District revealed that the rate of wastage was highest in the first two classes. The rate of wastage was also found higher in single teacher schools. S.I.E. (U.P. 1986) also conducted a study on drop-outs and failures in primary classes, and reported that mostly drop-outs belonged to backward classes and the causes were illiteracy of parents, poverty, lack of interest, distance of school from home and lack of other facilities. Gupta et al. (1989) reported that the overall drop-out rate of primary stage was more than 60% in the states of Andhra Pradesh, Bihar, J&K and West Bengal, whereas in Assam, Orissa, Rajasthan and U.P. it



was less than 50% and in case of Madhya Pradesh, it was about 58%. The drop-out rates among the SCs as well as STs pupils was higher than that of pupils of all communities in all states except in J&K. Reddy (1991) investigated the factors of dropout and revealed both demographic and economic factors like size of family, single parent family, financial difficulties, land holdings, home responsibilities were responsible for dropout phenomena. Rush and Vitale (1994) based on his research findings reported that eight factors i.e. academically at risk, behavior and coping skills, socially withdrawn, family income, parenting, language development, retention and attendance were responsible for placing elementary students at risk. Vickers (1994) reported that at risk families were less cohesive and less adoptable than families not at risk. The study conducted by Gyaneswar (1992) revealed that the rate of wastage and stagnation amongst pupils in rural areas was higher than that of urban schools. Vyas et al. (1992) reported that the drop-out rate of girls, urban schools, government schools and schedule castes Pupils was more than boys, rural schools, private schools and SCs. The potential causes were related to family circumstances, personal and others. Results of the study carried out by Verma (1993) indicated that girls drop-out rates was higher in rural areas than in urban areas and the causal factors of high dropout rate were illness of parents, divorce of parents, death of parents, unfavorable attitude towards girls education, working with parents for earning. Bhat et al. (1994) also investigated the wastage in primary education in Kupwara district of J&K. The study concluded that the drop-out rate of primary school was 0.19% and the causes were poverty, ill health of the child, illiteracy, and lack of interest in study. The study conducted by Leelavathy (1997) revealed that the incidence of wastage and stagnation was nearly 32.4%, while the incidence of wastage alone was around 20.4%, including 15.6% for boys and 4.8% for girls. Causes were lack of interest on the part of the student, learning difficulties, lower level of intelligence, and lack of learning facilities at home, poor social environment and the negative attitude of parents towards education. Sarmah (1997) also found that the drop-out rates for girls were substantially higher in all the classes, but the retention rates for grade IV were higher in case of boys than that of girls. Poverty, house hold



activities and unattractive teaching-learning atmosphere were the major causal factors. Banerjee et al. (2000) studied the drop out phenomena and revealed that the proportion of drop-outs for girls was significantly higher than that of boys in both rural and urban areas, but urban drop-outs were significantly superior to rural drop-outs in their minimum level of learning (MLL) competency. Poor economic conditions, illiteracy of parents were found to be the main causes of the drop-out. A similar investigation was carried out by Naidu (2000) and found that Drop-out rates were highest among girls than boys and the percentage of drop-out was more in the age group 11-15 years. Poverty, absence of Mid-Day-Meal scheme, improper provision of uniform and text books leads to large scale drop-outs in all the states. Archana (2001) found that enrolment of girls was poor in comparison to boys at primary level and the drop-out rate of girls was more than double as compared to boys. The causes were identified as non approach ability of school, poor economic condition, negative attitude of parents towards the education of girls, fear of punishment and poor teaching method. Sharma et al. (2003) indicated that the level of expectation and self-confidence was highest among successful students than the failure and drop-outs. Siddiqui (2003) found that the drop-out rate was higher in boys than that of girls. The study also revealed that the dropout rate was highest in Muslims in comparison to non-Muslims. Corporal punishment, indifferent behaviors of teachers, no proper place for study at home, poverty, illiteracy of parents & language problem were reported to be the major causes of high dropout rate. Giakwad et al. (2005) reported that majority of school drop-outs belonged to nuclear type and middle size family and had no literate parents. The main causes were illiteracy, distant of school, lack of furniture, safe drinking water and sanitary facilities in the schools. Peraita and Pastor (2000) found that family socio economic status and youth labor condition were significant factors in determining the probability of dropping-out in primary schools. Karki (2004) observed that the main perceived antecedents of primary school drop-outs were family poverty, house hold chores and irregularity in attending schools. The results of the study conducted by Mohsin et al. (2004) indicated that school and economic factors were responsible for low literacy and causes of drop-out were weak primary



level of education, non-ability of the trained teachers. Roul et al. (2005) revealed that the home conditions, school conditions and economic conditions of the parents play an important role in the drop-out of girl's students. Subramaniam (2005) indicated that the drop-out rate was higher among boys than for girls. Low income of parent, child labor, lack of interest in studies etc. was reported to be the causes of high dropout rates. However, the findings of the another study conducted by Kotwal (2007) revealed that the main causes of dropping-out of girls from schools in rural areas were reluctance of parent and participation in domestic activities. Rena (2007) also reported that children dropping-out of schools so as to assist in house hold and agriculture activities. It was also reported that the drop-out rate of girls was more than that of boys. Khan et al (2010) found that the reasons for the drop-outs were grouped as familial, personal, educational, school and community related. The study also revealed that the incidence of drop-out was higher among the female students and in urban areas. Similar study carried out by Nakpodia (2010) reported that the rate of drop-outs was higher among male students than female students. Sharma et al. (2007) found significant association between family type, income and education of mother with incidence of drop-out. Alike et al. (2009) reported that poverty constituted the highest percentage of drop-outs i.e., 53% while death of parents, ill health, in adequate teaching constituting the least percentage of 1%. Hussain et al. (2010) revealed that the major causes of drop-outs were crowded and large schools, uncaring, unrestrained and irresponsible teachers, in appropriate curriculum design, lack of parent involvement. Jamil et al. (2010) found that poverty, distant schools, overcrowded classes, lack of individual attention, overweening punishment as the significant reasons of early school drop-out phenomena. Another study carried out by Chugh (2011) revealed that both family and school related factors were responsible for drop-out and appeared to be highly correlated with each other. Ghazi et al (2011) studied the socio economic factors as a cause of children dropout at primary level and concluded that parent's illiteracy, engagement in earnings, financial problems of the children, parents poor economic conditions were the causal factors for high dropout rate. Mirza et al (2011) also reported that poverty,



lack of parent's interest in educating the children, engagement in work etc. were found to be major causes of dropout phenomena.

The findings of the above mentioned studies indicate that the final decision of the child to drop out of the school comes from a variety of reasons which may be associated with personal, familial, institutional and social domains.

1. **Personal or child related factors:** disinterested to study, involvement in work, illness, inferiority complex, lower level of ability, emotional disturbances, child marriage, learning disability, unforeseen events in the family, poor health of the pupil, language problem.
2. **Family related factors:** low socio economic condition of the family (poverty), low educational level of the family, negligence of parents, absence of parents, lack of reading rooms at home, frequent transfer of parents, non-supportive environment of the family, sibling has dropped out.
3. **School related factors:** Poor quality of teachers and indifferent teaching, overcrowded classes, bad physical condition of the school, corporal punishment, retained one or more times, lack of interest on the part of teacher, irrelevant curriculum, single teacher schools, lack of basic amenities like toilet in school, long distance of school, irregularity of teacher, irregularity in Mid day meal, lack of co curricular activities, poor learning environment.
4. **Socio-cultural factors:** social and cultural inhibition towards education of girls, shortage of women teacher, early marriage, co-educational institutions, casteism, and long distance of school or transport problems, slums eviction and quarrels with neighbors, lack of involvement in school based social activities, lack of social mobility, sexual harassment on girls.

In addition to the above cited reasons of the dropout, the studies have also found the gender, rural and caste comparisons. Studies have found higher drop-out rates in elementary schools of rural areas as compared to the urban areas. However, contradictory results have been reported about the gender



differences in regards to drop-out rates. Sizeable number of studies revealed that dropout problem is more prevalent and of serious nature among schedule castes and schedule tribes. Community wise studies are very few and reported that the problem of dropout also serious among Muslim students.

Research Implications:

- Indian society constitutes minorities, Schedule castes, Schedule Tribes and other backward communities which are economically, socially and educationally backward as compared to others. Researcher should emphasis their studies in bringing about the access as well as retention of students belonging to these sections.
- Differently abled students also have the equal right to receive and successfully complete their elementary education. Unfortunately this group has not been paid due attention by the researchers.
- Independent researchers should also concentrate on the implementation aspect of various government schemes for ensuring universalization of elementary education as there are very much associated with the access and dropout of the students.

Educational Implications:

- Government schemes like text books, Mid-day Meal and Scholarships should be properly implemented by taking cooperation of community members and NGOS. Strict monitoring on the part of the government authority is essential to ensure that the benefit of such schemes reaches to the needy and deserving members.
- Teachers are an important element in learning process. It is more true in case of elementary education level. Due care is needed to ensure transparency in selecting the dedicated, hard working and responsible teachers who can respond to the needs of the child and shape their behavior in a propitious environment.
- There is an urgent need to strengthen the teacher training programme for producing the quality teachers.



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- Pre-school centers, Flexible schooling hours and systems should be provided.
 - School's environment should be conducive. Proper infrastructure facilities like building, classrooms, drinking water, toilet facilities, audio-visual aids, proper ventilation, lighting, fans (in summer school) etc. should be provided to every school. These facilities can make significant change in the personality development of the children.
 - In order to improve the quality of education, the vacant posts of teachers should be filled up as early as possible.
 - Extensive awareness programmes in rural areas, slums, remote areas, hilly areas, tribal areas, Muslim and scheduled castes localities should be carried out to highlight the importance of education for every child.
 - Up-gradation of primary schools into middle schools as per the need especially in rural areas.
 - Illiteracy and ignorance among a sizeable population of adults is also a contributory factor for their indifferent attitude towards education of their children. Therefore it is equally important that adult education programmes should also get priority.
 - Guidance & Counseling centers for illiterate, poor and disadvantaged sections may prove to be of great importance.
 - Form a team of teachers, civil society members/ panchayat members/ municipal committee members for proper implementation of right to education.

Conclusion

The dropout problem is complex and requires a complex array of solutions. Dropouts have dissimilar characteristics and therefore need different kinds of programs which respond to their individual circumstances and needs. Programs, to be effective, need to provide one-on-one intensive attention to at-risk students, who often must be convinced that they are



competent and can be successful in school. The curriculum should include basic educational skills, social skills and experiential education. In addition, the interrelated causes and multiple problems associated with dropping out call for comprehensive communitywide, multi-service approaches and multi-component programs to be achieved. Children at-risk need to be identified at a young age (as early as pre-school) so that early sustained intervention can be applied. Success in the elementary grades diminishes the possibility of later dropping out in high school. The key to reducing the dropout rate is helping the child to overcome their sense of disconnectedness. It is imperative not to isolate or alienate any student from the school. Not all factors related to dropout reduction are school controllable, and solutions to the complex problem of dropouts cannot be achieved by the schools alone. It is a national problem which must be addressed by the whole society. It requires resources that go beyond the school, and solutions require a team approach-the combined efforts of students, parents, teachers, administrators, community-based organizations and business as well as the centre, state and local governments.

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HIDING TEXT IN TO IMAGE USING TRI PIXEL DIFFERENCE VALUE METHOD

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I. INTRODUCTION

Nowadays, due to a dense development of the modern technology of computer and communication, message transmission is rapid and convenient. To protect secret message from being stolen during transmission, there are two ways to solve this problem in general. One is encryption, which refers to the process of encoding secret information in such a way that only the right person with a right key can decode it successfully. Although encryption makes the message illegible, its appearance is easy to attract eavesdroppers. Another way is steganography, a technique which hides secret information into a cover media or carrier for transmitting secret data to the desired destination stealthily. Moreover, the information hiding technique could be used extensively on application of military, commercials, anti-criminal, and so on[4].

In the proposed technique Tri Pixel Difference Value Method is used to hide the text data in image file. In this method data is hidden in the pixel pair. A set of bits are hidden in each pair. In proposed method, a pixel block of 2 x 2 is taken and three pairs are formed. So normally minimum 3 bits could be hidden in a pair and maximum 8 bit per pair. By using this technique, quantitatively much more data is hidden in image. In this method, image is considered in spatial domain. So image is considered on its pixel value. The data hidden depends on its change in pixel values. That's why this method is applicable only to those type of images which have lossless compression. Data could not be hidden in images of lossy compression method such as JPG images [2].

In proposed technique, a text file having data, is given as an input. The image file is provided as (cover) input in which data is to be hidden. Algorithm first stores size of text file in terms of bytes at first 32 bit location which takes 6 blocks. Thereafter actual data is hidden as stream of bytes [7].

II. REVIEW OF PVD METHOD

This method is based on PVD method proposed by Han-ling ZHANG, Guang-zhi Geng, Cai-qiong Xiong and [4]. Modifications in original concept is done in this method to increase the hiding capacity and also to increase the security in encryption of the multimedia image [4]. It has advantage of high capacity as in PVD and has good security as in encrypted system.

One of the drawbacks of the LSB steganography method gives a very low hiding capability, which is 1 bit per byte. Considering another side i.e. PVD method gives great embedding capability, in between 2-4 bits per byte. This affects the hiding capacity two times more than LSB method. By combining encryption techniques with PVD steganography a secure as well as high capacity stego system can be achieved.

When we making the change in the last 1 or 2 bits of the every pixel of the any image that time modified image looks like same as original image means change is not considerable to human eyes.



Fig 1: (a) image.jpg



Fig 1: (b) image_00.jpg

Fig 1: (c) image_11.jpg



In cases of any original image image.jpg as in fig. 1(a) is modified. Last two bits of all image pixels are set to 00 in fig. 1(b) image_00.jpg and to 11 in fig. 1(c) image_11.jpg. There is no visible difference in between these images. Means after changing the few beats of the image pixels i.e. one or two bits then is not noticeable by the human eye.

Here in PVD method we are using two different algorithms i.e. encryption algorithm and decryption algorithm also called embedding and extraction algorithms.

Here in fig.2 describes the proposed implementation of the system. As per concept of the PVD method by differencing the pixel value we are going to change in to one of the bit of the means adding the password in to particular bit to achieve the hiding property of data [1].

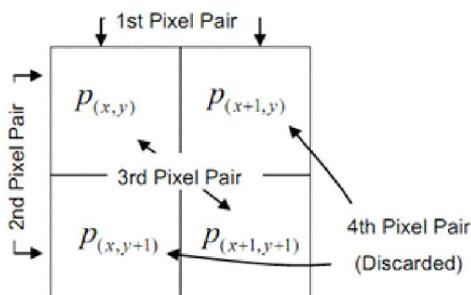
In proposed system we are using two algorithms or we can say the process by which implementation of the PVD is done in the multimedia images. One of them is the embedding algorithm and another is extraction algorithm [1].

Here implementation of these two algorithms is done by the private key cryptography. In private key cryptography we are using sender's private key to hide the message in to the image and uses the receiver's private key for decrypt the image. But when we are not able to use correct private key then receiver not receives the original message. In this case blurry images are constructed. It means the security is greater by using the sender's and receiver's private key.

III. PROPOSED METHODE

To improve the capacity and quality of image another enhanced method introduced based on the PVD method. In this method data can be hidden in vertical and diagonal edges along with the horizontal edges. The whole method is described as follows:

Motivated from the PVD method [1], using two-pixel pairs on one directional edge can work efficiently for information hiding. This should accomplish more efficiency while considering four directions from four two-pixel pairs. This can be implemented by dividing the image into 2×2 blocks. However, since the changing of pixel values for the fourth pixel pair affects the first and the second pairs, the fourth pair is useless and has to be discarded. Therefore, we propose that three pairs are used to embed the secret data. Before introducing the proposed algorithm, the pre-procedure is to partition the cover image into non-overlapping 2×2 blocks with 4 pixels.



As shown in Figure 2.1, each 2×2 block includes four pixels of $P(x,y)$, $P(x+1,y)$, $P(x,y+1)$ and $P(x+1,y+1)$, where x , and y are the pixel location in the image. Let $P(x,y)$ be the starting point, then three pixel pairs can be found by grouping $P(x,y)$, with the right, the lower, and the lower right neighboring pixels. Those three pairs are named by P_0 , P_1 and P_2 where $P_0 = (P(x,y), P(x+1,y))$, $P_1 = (P(x,y), P(x,y+1))$ and $P_2 = (P(x,y), P(x+1,y+1))$, respectively.

When using the proposed tri-way PVD method to embed the secret data [2], each pair its modified P'_i and a new difference value d'_i for $i = 0, 1, 2$.



Here, the detailed embedding algorithm is described afterwards. Now, the new pixel values in each pair are different from their original ones. That is, we have three different values for the starting point $P(x,y)$ names $P'0$, $P'1$, $P'2$ from $P0$, $P1$, $P2$, respectively. However, only one value for $P'i$ can exits after finishing the embedding procedures. Therefore, one of $P'i$ is selected as the reference point to offset the other two pixel values. That is, two pixel values of one pair are used to adjust the other two pairs and construct a new 2×2 block. Suppose that the reference point is $P'1$, then the other two difference values, $d'0$, $d'2$, can be proven unchanged after the adjustment[7][8].

I. EMBEDDING ALGORITHM

In the embedding algorithm, main task is to hide the data by following the steps given below. In embedding first task is partition the image in 2×2 non overlapped blocks. And the next task is that to find out the difference in each pair of arrangement shown in figure 2. Out of six different pair we are using 3 pairs in which first pixel is common which is called as reference pixel. Once difference is calculated range of each difference is find out and corresponding no. of bits to be hidden is calculated in such a way that the new difference after embedding the bit is always be less than before embedding bits. As the difference is less than actual difference so the difference in original image is negligible and not able recognize with compare to original image. Algorithm for embedding is given as below[8]:

1. First find out the difference of three pixel pair shown in figure 2.5 as below:

$$D0(x,y) = P(x+1,y) - P(x,y)$$

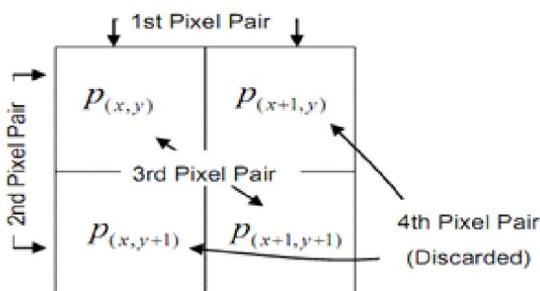
$$D1(x,y) = P(x,y+1) - P(x,y)$$

$$D2(x,y) = P(x+1,y+1) - P(x,y)$$

2. For each D ($D0$ - $D2$) belongs to R_i the threshold is find out. For embedding no. of bits following rules are applied.



- a. Magnitude of new difference is less than D . Maximum number of secret bits are selected so that $b \leq D - |l_i|$ where b is decimal value. If $b \leq D - |l_i|$, No overlapping is required but b should be in the range of $[0, D - |l_i|]$ so decimal value. New difference is $|l_i + b|$ as D'
 - b. If $d < T_i$, b should be in the range of $[0, |l_i - 1|]$. Maximum number of secret bits are $b \leq D - |l_i|$ where b is decimal value. If $b \leq D - |l_i|$, the new difference D' is $|l_i - b|$. Where P_n and P_{n+1} represented two pixels in P_i and $m = d' - d_n$. Until now, to embed the secret data into the pixel pair (P_n, P_{n+1}) is done by changing the values of P_n and P_{n+1} . If t_i ($i=0, 1, 2$) do not satisfy branch conditions, then the algorithm proceed to step 8. Otherwise step 7 only processes P_0 and P_3 using original PVD method then compute t_i ($i=0, 1, 2$) and check weather t_i still satisfy the same branch condition before. If not, offsetting the pixel values in P_2 to satisfy the previous conditions. Now, the new block is constructed and the algorithm proceeds to last Step.
3. Find out optimal reference point $P_i(xy)$ is used to offset the other two pixel pairs.
 4. Now new block is constructed from the three pixel pair, with embedding secret data.



V. EXTRACTION ALGORITHM

In extraction algorithm is exactly the opposite the embedding algorithms. In this image is partitioned in blocks of image of size 2×2 pixels. Then the pair of three pixel is formed as shown in figure 2.5. Then

corresponding range of partition is find out and then exactly the way mentioned in step b in extraction algorithm is used to get bit length of message which is to be hidden. From the difference value, corresponding ranges lower bound value is subtracted. To retrieve the embedded secret data from the stego-image, the extraction algorithm is described in the following steps [8].

1. The stego-image into 2×2 pixel blocks, and the partition order is the same as that in the embedding stage.
2. Calculate the Partition difference values $d_i(xy)$ separately for each block in the stego-image given by
 - a. $D_0(x,y) = P(x+1,y) - P(x,y)$
 - b. $D_1(x,y) = P(x,y+1) - P(x,y)$
 - c. $D_2(x,y) = P(x+1,y+1) - P(x,y)$
3. $|d_i(xy)|$ is used to locate the suitable R_{ki} as introduced in Step 2 of the embedding phase. At the same time, the amount of embedding bits t_i where $t_i = \log_2 w_{ji}$ is obtained. If t_i satisfies the branch conditions, two independent pixel pairs are selected; otherwise, three pixel pairs are used for further processing.

After R_{ki} is located, l_{ji} is subtracted from the selected $|d_i(xy)|$ and b_i is obtained. If image is to not alter b_i is equal to b_i . Finally, b_i is converted from a decimal value into a binary sequence with t_i bits where $t_i = \log_2 w_{ji}$ Note that the t_i -bit stream is only one part of the secret data before embedding [8].

VI. EXPERIMENTAL RESULTS

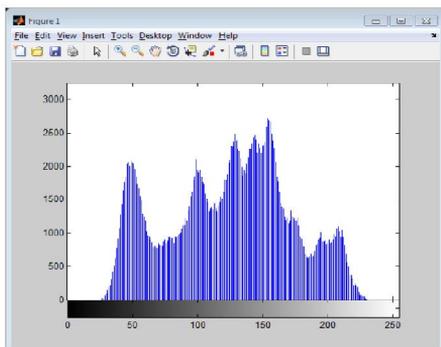


(a)

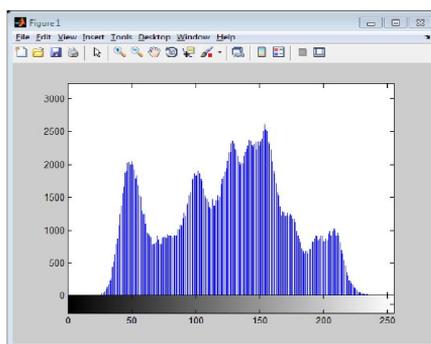


(b)

Figure: Elaine Image, a. Before Embedding b. After Embedding by TPVD



(a)



(b)

Figure: Histogram for Lena Image (a) Without Embedding (b) Embedding by TPVD

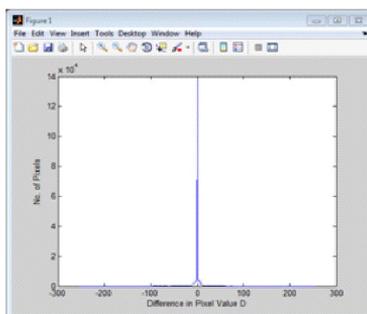


Figure: Histogram for Lena Image of Difference D in Pixel Value Embedding by TPVD

To justify our claim and show the importance of unusual steps for steganalysis, an example is posed here. The histogram of D vector values for Lena image with 20% secret message rate is illustrated. We apply the steganalysis scheme proposed in which is based on chi-square test on the histogram of D vector values. As it is shown in Figure no secret message can be detected in this stego-image using this method. However, unusual steps, marked by red arrows, are obviously visible [7].



(a)



(b)



(c)

Figure: Image a. before and b. After embedding by TPVD c. Difference between (a) and (b)

| Image Name | Bytes | PSNR | RS | |
|------------|-------|-------|-------------|-------------|
| | | | Cover Image | Stego Image |
| Elaine | 59514 | 39.41 | 0.0117 | 0.0149 |

In this way above are various performance of amount of data embedded to a different image files. This shows the images after embedding data into it.



VI. CONCLUSION

Extended Tri-way Pixel Value Differencing Steganographic method which is a new modified version of the well-known PVD steganography technique, is shown to be able to increase PVD's capacity while keeping the visual characteristics of the resulted stego-images. Also, after the introduction of that method in, no effective attack is proposed to reveal the existence of hidden data and estimate the secret message rate of a stego image under ETPVD. However, it is shown here that drastic changes in the probabilistic distribution of pixel pair difference values which have been altered through the embedding procedure, hazards the security of ETPVD significantly. We have tested the proposed method on over 50 test images and according to the experimental results, the accuracy of the proposed method is 0.95 in estimating the secret message rate, with an accuracy equal to 0.97 in classifying stego images.

Our proposed approach produces the high capacity of embedding but still it is less than that of the original TPVD method. But in this approach, the security provided for data is very high and cannot be easily recognized by comparing histograms also.

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HORTICULTURE PRACTICES IN THE TRIBAL AREAS OF VISAKHAPATNAM DISTRICT IN ANDHRA PRADESH

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I. Introduction:

Indian horticulture has a high ranking at the international level. India is the highest producer of coconut, coffee, ginger, turmeric and black pepper and the second largest producer of fruits and vegetables is valued at about US \$400 million. Besides the economic importance noted above, the horticulture crops have considerable ecological significance. Unlike agricultural crops they provide a green cover for a long period of time. In case of crops like coffee, the large canopy is an advantage. All the crops protect the soil, conserve water and help in the control of air pollution. In the coastal areas they have a special contribution. They act as a shelter belts and protect the settlements against cyclonic winds. In view of all these, the problems of study are to assess and estimate the role of horticulture crops in a coastal area.

II. Horticulture Programmes in the Tribal Areas of AP:

To resolve the structural problems underlying the tribal economy the Andhra Pradesh Government evolved Tribal Development Project (APTDP) with the assistance of International Fund for Agriculture Development (IFAD). The main reason involved in the implementation of the APTDP was the history of socio-political unrest in the coastal tribal region of A.P. During the 1970s and 1980s, the project area witnessed a period of turbulence as the epicenter of the naxalite revolt, a radical insurgency movement. The initiation of the project represented a bold move on the part of both the Government of India and IFAD and provided the opportunity to assess the relationship between a grass-roots-led protest movement and the operation of a participatory tribal development project. The Andhra Pradesh Tribal Development Project (APTDP) was appraised



by International Fund for Agriculture Development (IFAD) in December 1990. The loan became effective on 27 August 1991 and closed on 31 March 1999. The total project cost was US\$ 46.5 million, funded by the Governments of India/Andhra Pradesh (US\$ 19.5 million), IFAD (US\$ 20.0 million) and The Netherlands (US\$ 7.0million). The cooperating institution was the United Nations Office for Project Services. The Tribal Welfare Department of the Government of Andhra Pradesh was the executing agency, with overall responsibility for project implementation.

The project area is located in the north-eastern regions of the state of Andhra Pradesh. The project was implemented in four contiguous Integrated Tribal Development Agencies (ITDAs), with a high concentration of families engaged in *podu* (shifting/slash-and-burn) cultivation: Seethampeta(Srikakulam district), Parvathipuram (Vizianagaram district), Paderu (Visakhapatnam district) and Rampachodavaram (EastGodavari district). The APTDP implemented with the assistance of IFAD focused its attention towards natural resource and agriculture development in tribal areas and allocated 70 per cent of its project outlay towards development of horticulture activity, construction of check dams and minor irrigation tanks and different land development programmes towards agriculture development in the interior tribal areas. In terms of natural resource management, the most significant activity of the project has been the attempt to use settled irrigated agricultural systems to replace the traditional methods of shifting (*podu*) cultivation. The aim is to improve household food security through the cultivation of high-yielding paddy rice and horticultural crops, as well as to protect the environment against deforestation and soil erosion. This necessitates radical changes in patterns and methods of farming and the introduction of farming systems of which the girijans have in general little or no experience. The project 'package' in this respect thus includes training programmes and expert supervision, as well as inputs such as seeds, fertilizer and saplings. Though the APTDP implemented with the assistance of IFAD is completed by March 1999, the ITDA Paderu is continuously implementing follow up policies to intensify the horticulture practices of the different tribes in the Sub-Plan areas of Visakhapatnam district.



III. Relevance of the present study:

Against this background, the researcher, felt the relevance of examine the horticulture practices of the selected Bagata and Konda Dora tribe households in the light of the horticulture development programmes implementing by ITDA, Paderu through APTDP with the assistance of IFAD and it's follow up post project programmes in the scheduled areas of Visakhapatnam district. Since tribals are spread throughout India with their racial differences, region-wise study of tribes assumes importance. Hence there is need for more and more micro level studies covering different tribes of the country to throw light on the efficacy of horticulture development programmes in bringing considerable change in the economic status of the specific tribes.

The Bagata and Konda Dora tribes with different socio-economic conditions is not considered as PTG and they are with dynamic racial qualities and forward on socio-economic front of all tribes in this area. Hence an attempt is made to study the horticulture practices of Bagata and Konda Dora tribes in the light of the IFAD project. The tribe-wise analysis is mooted to analyse the aspect of the close and undifferentiated affinity between the economy and social milieu of a small community, without losing sight of the need for differentiating economic from social activity. Various developmental agencies especially the GCC, ITDA and the activities of various other government departments like forestry, soil and water conservation, roads and buildings, minor irrigation, the horticulture etc., have geared to improve the quality of life of the tribals and in the growth of their economy.

IV. Objectives & Methodology:

Against the above background, an attempt is made to examine the horticulture practices of tribals, in the Paderu mandal of Visakhapatnam district. Also an attempt is made to know the differences in the horticulture practices of different tribes. Among the prominent tribes, Bagata and Konda Dora are one of the important tribes in India. They are largely concentrated in the Visakhapatnam district of Andhra Pradesh. Hence an attempt is



made to study the horticulture practices of Bagata and Konda Dora tribes in the Visakhapatnam district of Andhra Pradesh.

The discussion on the methodology, indicate sampling method used, how the data is ascertained, the statistical tools are used for analysis and to sort out the limitations of the study.. Multi stage stratified random sampling method is used in this study. There are four stages in which sampling process is carried out. Out of the nine districts of Andhra Pradesh which have concentration of tribal population Visakhapatnam District is selected due to the fact that the district is having higher extent of tribal concentration in the north coastal Andhra Pradesh. . The Paderu mandal is selected for the study because they are the tribal mandal that is having a high proportion of tribal population and different tribes are residing in these mandals. The selected Bagata and Konda Dora tribes in Paderu are equally proportioned in the Paderu mandal. To examine the horticulture activities 40 households are selected from each tribe form their concentrated selected villages based on the random sampling procedure. The villages are selected depending upon the higher concentration of specific tribes. With a stratification procedure based on the specific tribe population concentration the panchayats are classified into categories.

From the Bagata concentrated panchayats of Paderu mandal 40 Bagata tribe households are selected from Minumuluru and Talarsingi interior villages and other 40 Konda Dora tribe households are selected from the Sangodi and Dubbaputtu roadside plain villages. As a whole 80 households are selected for the in depth study they are further stratified in terms of marginal, small and , medium farms. Information relating to the socio economic conditions and horticulture aspects of the selected farms is collected while canvassing a pre designed and structured household schedule in the selected villages during August 2007 to July 2008 in different visits. The secondary data has been obtained from Annual Reports and Action Plans of ITDA Paderu, Tabular analysis with averages and percentages are used to explain the general profile and their different horticulture practices



V. Prevailing Horticulture Practices of Selected Tribes in the Study Area:

The Information was collected from the sample households covered under horticulture programme about three major horticulture crops. The sample households have been divided into three farms. The total numbers of persons covered in the sample are 80 among them 40 are Konda Dora tribe households and another 40 belongs to Bagata tribe households.

A. Cropping Patterns of Households under Horticulture:

The intensive development of horticulture programmes in the study area by ITDA is expected to diversify the cropping patterns of the tribal farms because the horticulture programmes will help the farms to cultivate different varieties of fruits and vegetables in the study area. In this context the information relating to cropping patterns of the households of Konda Dora and Bagata tribe are analysed. Table1 presents the cropping pattern details of the Konda Dora tribe households under the horticulture programme. In the study area coffee, mixed horticulture and banana are taken up as major horticulture crops by the households of both the selected tribes.

Table.1
 Crop Pattern of Konda Dora Tribe Households

| Category | Major Crops | | | G.C.A* |
|-----------------|-------------|--------------------|--------|--------|
| | Coffee | Mixed horticulture | Banana | |
| Marginal Farmer | 2.62 | 1.89 | 0.97 | 5.48 |
| Small Farmer | 3.74 | 2.41 | 1.84 | 7.99 |
| Medium Farmer | 6.42 | 4.12 | 3.46 | 14.00 |
| Total | 4.26 | 2.81 | 2.09 | 9.16 |

*Gross Cropped Area

The cropping patterns of Konda Dora tribe households under horticulture programme reveal that the total cropped area is estimated 9.16 acres in case of all the three crops. Among the major crops coffee and mixed horticulture spreads a large proportion of the total cropped area. The



distributions of cropped area under horticulture clearly indicate predominance of coffee and mixed horticulture crops for all the categories of farmers of Konda Dora shows that among the major crops coffee is the important crop constituting a major proportion of the cropped area. The cropping patterns of Bagata tribe are presented in the following table 2.

Table. 2
Crop Pattern of Bagata Tribe Households

| Category | Major Crops | | | G.C.A* |
|----------------|-------------|-------------------------|--------|--------|
| | Coffee | Mixed Horticulturalaltu | Banana | |
| Marginal Farms | 2.78 | 1.92 | 1.02 | 5.72 |
| Small Farms | 3.94 | 2.68 | 1.96 | 8.58 |
| Medium Farms | 6.83 | 4.54 | 3.69 | 15.06 |
| Total | 4.52 | 3.01 | 2.22 | 9.79 |

The above Table presents cropping pattern details of the Bagata tribe households under horticulture programme. The average cropped area per sample household is 9.79 acres for all the crop. Coffee crop is the predominant crop in major crops. This is noticed in case of all the three categories of farmers. In case of horticulture programme both the tribe households given importance to coffee and mixed horticulture among the major crops. However the extent of Gross Cropped Area is relatively lower in case of both tribes in case of horticulture programme.

B. Fallow Land levels of Households under Horticulture Programme:

The intensive development of horticulture programmes in the study area by ITDA is expected to reduce the extent of fallow land because the horticulture programmes will help the farms to utilize even the dry land in an optimum manner. In this context the information relating to fallow land of the households of both the tribes are presented in the following Table 3. The extent of fallow land is recorded to a very lower extent in case of both the tribes. The extent of fallow land is relatively recorded higher in case of Konda Dora tribe when compared to Bagata tribe households.



Table- 3
Fallow Land
(Figures are in percentages)

| Farms | Konda Dora | Bagata |
|-----------|------------|--------|
| Marginal | 15.05 | 10.35 |
| Small | 20.21 | 18.54 |
| Medium | 26.18 | 21.01 |
| All farms | 20.48 | 16.63 |

The proportions of fallow land to operational holding vary considerably among the three categories of farmers among both the tribes. However, according to the field reports of the households during last five years because of intensive horticulture development in the study area there is a gradual decline in the fallow land for the three categories of farmers of the both the selected tribes. Also it is noticed that in the case of marginal farmers and small farmers there is striking decrease in the fallow land particularly among Bagata tribe small farmers and medium farmers there is a considerable decrease in the extent of fallow land.

C. Intensity of cropping details of Households under Horticulture Scheme:

Generally the intensive development of horticulture programmes in the study area by ITDA is expected to increase crop intensity because under horticulture farms are used to cultivate the minor crops along with major crops simultaneously this practice ultimately increase the extent of crop intensity. Also the horticulture programmes will help the farms to utilize even the dry land in an optimum manner. In this context the information relating to crop intensity levels of the households of both the tribes are presented in the following Table 4.



Table - 4
INTENSITY OF CROPPING PATTERN
(Per household)

| Farms | Konda Dora | Bagata |
|-----------|------------|--------|
| Marginal | 146.31 | 161.29 |
| Small | 149.87 | 170.84 |
| Medium | 151.62 | 176.43 |
| All Farms | 149.27 | 169.52 |

Considerable differences are observed among both the tribes in their crop intensity levels. The crop intensity levels of Bagata tribe households relatively recorded at high levels (169.52 percent). The intensity of cropping among the Konda Dora tribe households is very low and it is estimated at 149.27 percent. In the case of marginal farmers (146.31 percent) it is very low and for the medium farms (151.62 percent) it is recorded relatively high. As a whole, the extent of crop intensity is relatively higher in case of both the tribe farms who are covered under horticulture programme. The reason is that in case of horticulture along with the major crops like coffee, mixed horticulture and banana in most of the areas the minor crops like turmeric, ginger and maize are also simultaneously cultivated by the farm households

D. Crop Yield Patterns of Households under Horticulture Scheme:

This section discusses about the annual production of selected horticulture crops raised by the sample households. Also an attempt is made to analyze per capita output and family average of selected horticulture crops of households under different farms. From observation it is found that among the major crops the output of coffee is highest in the study area. Production of mixed horticulture and banana is second and third highest respectively in the study crops are discussed in a sequence of tables. Table 5 highlights the information about the production of coffee by the sample households.



Table. 5
Production of Coffee by the Sample Households

| Sl.No | Farms/Tribes | (in kilograms) | |
|--------------------|----------------------|----------------|------------|
| | | Per capita | Per family |
| Konda Dora: | | | |
| 1 | Marginal Farms | 7.00 | 14.00 |
| 2 | Small Farms | 6.22 | 18.60 |
| 3 | Medium Farms | 7.10 | 24.88 |
| Bagata: | | | |
| 4 | Marginal Farms | 3.80 | 11.60 |
| 5 | Small Farms | 10.60 | 38.52 |
| 6 | Medium Farms | 19.40 | 66.00 |
| 7 | All Tribes and farms | 9.02 | 28.93 |

It is observed from the above table that the total coffee production of sample house holds is 3186 Kgs. Thus on an average, each family produces 28.93 Kg of coffee and each person produces 9.02 Kgs of coffee. Families belonging to highest income group produce the highest coffee out put. The production of mixed horticulture items is presented in Table 6.

Table: 6
Production of Mixed horticulture items by the Sample Households

| S No | Tribe/Farms | (in kilograms) | |
|--------------------|----------------------|-----------------|------------|
| | | Per capita | Per family |
| Konda Dora: | | | |
| 1 | Marginal Farms | 285.00 | 550.00 |
| 2 | Small Farms | 240.00 | 796.50 |
| 3 | Medium Farms | 215.50 | 810.00 |
| Bagata: | | | |
| 4 | Marginal Farms | 617.00 | 2450.20 |
| 5 | Small Farms | 288.50 | 1045.50 |
| 6 | Medium Farms | 520.00 | 1460.00 |
| 7 | All Tribes and farms | 361.00 | 1185.37 |

It is recorded that the sample households produce 95964 kgs of mixed horticulture items, which implies a family average of 1185.37 it also indicates that each person produces around 361.00 kgs of mixed horticulture items. The details relating to production of banana are presented in the following Table 7.



Table: 7
Production of Banana by the Sample Households

| S No | Tribe/Farms | (in dozens) | |
|--------------------|----------------------|-------------|------------|
| | | Per capita | per family |
| Konda Dora: | | | |
| 1 | Marginal Farms | 75.00 | 138.50 |
| 2 | Small Farms | 178.20 | 575.00 |
| 3 | Medium Farms | 112.50 | 393.55 |
| Bagata: | | | |
| 4 | Marginal Farms | 230.10 | 890.50 |
| 5 | Small Farms | 182.00 | 737.20 |
| 6 | Medium Farms | 268.00 | 910.00 |
| 7 | All Tribes and farms | 174.30 | 607.46 |

It is recorded that sample households produces 64978 dozens of banana, which is shown in table. It is also observed that on an average, each family produces 607.46 dozens of banana and each person produces around 174.30 dozens of banana. The comparative positions of the annual production of selected major crops are presented in the following Table 8.

Table: 8
Comparison of Major Horticulture Crops of all Tribes

| S.No | Name of crop | Per capita | Per family |
|------|------------------------|------------|------------|
| (1) | (2) | (3) | (4) |
| 1. | Coffee(kg) | 9.02 | 28.93 |
| 2. | Mixed horticulture(kg) | 361.00 | 1185.37 |
| 3. | Banana(dz) | 174.30 | 607.46 |

The comparative analysis of the annual production of selected major horticulture crops presented in the above table shows the family average, per capita and yields per tree of selected crops. It reveals that production of coffee is relatively high when compared to mixed horticulture items and banana. Though coffee recorded higher production in comparison to other horticulture crops the per capita and per family production is relatively recorded high in case of other crops mixed horticulture and banana.



E. Personal Consumption and Marketing of Selected Major Crops Produce:

The analysis relating to distribution of total produce of the major crops of the selected households in between personal consumption and marketing of produce are presented. A bulk portion of the produce is sold in the market and they consume only the little part of produce. The coffee production is directly supplied to GCC. The mixed horticulture and banana produce is concerned most of the produce is sold in Paderu shandy. Farmers face lot of problem to transport produce to market. Most of the produce is transported by walk. Some farmers use bullock cart, Cycle and scooter to transport produce. Apart from inadequate transport, they suffer from a shortage of quick moving vehicles. As a consequence, part of the produce is spoilt on the way and farmers fail to get a good market for their produce. The total output is divided into two parts: the quantity consumed and the quantity sold in the market. The details about these two components are discussed.

At the outset the information relating to personnel consumption of coffee by the sample households reveal that, on an average, each family consumes about 2.03 kgs of coffee and on per capita basis; it is found that each person consumes 0.58 kg of coffee 7.02 percent of total coffee produce is consumed by the sample households. Similarly the information regarding the personal consumption of mixed horticulture items shows that 11.98 per cent of total mixed horticulture produce is consumed by the sample households. 142.03 kgs of mixed horticulture items are consumed by each family. Each person of the sample households consumes 42.75 kgs of mixed horticulture items. The information regarding the personal consumption of bananas reveal that the sample households consume 12.16 percent of total banana produce. It is shown in table that each family consumes around 73.87 dozens of banana annually. On the basis of per capita, it is recorded that, each person consumes around 24.40 dozens of banana.

The analysis relating to marketing produce of the selected major crops are discussed. At the outset the information relating to quantity of coffee sold by the sample households in the study area reveal that 92.98



percent of total produce is sold. On per capita basis, each person sales 8.44 Kgs of coffee and on family average, 26.90 Kgs of coffee are sold. The information relating to quantity of mixed horticulture sold by the sample households in the study area reveals that 81.17 percent of total produce is sold. On per capita basis, each person sales 318.25 Kgs of mixed horticulture and on family average, 1043.33 Kgs of mixed horticulture items are sold. The information relating to quantity of banana sold by the sample households in the study area reveals that 87.84 percent of total produce is sold. On per capita basis, each person sales 149.90 dozens of banana and on family average, 533.59 dozens of banana are sold.

The information pertaining a comparative view about the quantity of selected major crops in the market shows that the households of study area cultivate three horticulture crops over a greater area of the land owned by them. The households' sale the bulk portion of the produce in the market, around 87.33 percent of the total produce is sold in the market. Most of the horticulture crops are cultivated for mainly sale in the study area. It is the main source of money /liquid income to the farmers in Paderu mandal. These trends reveal that the horticulture crops support the selected household's families by generating a considerable extent of marketable surplus for them which will reflect in their income levels.

F. Income Levels of Households under Horticulture Scheme:

As cultivation of fruit is a highly remunerative enterprise, households of sample region cultivate a large number of fruits and vegetables. Horticulture is the most important source of income in the sample region. For some people horticulture is the only source of income. This study discusses about annual value of selected major and minor horticulture crops of the sample households. Table 9 presents a comparative view of sums the value of selected crops. It also presents the per capita value of production of each income group.



Table: 9
Annual Value of Selected Crops (in rupees)

| S.No | Tribes/ Farms | Major Crops | | |
|-----------------------|------------------|-------------|--------------------|--------|
| | | Coffee | Mixed horticulture | Banana |
| (1) | (2) | (3) | (4) | (5) |
| Konda Dora | | | | |
| 1 | Marginal | 10000 | 4320 | 1024 |
| 2 | Small | 282020 | 81450 | 59160 |
| 3 | Medium | 698450 | 156950 | 75010 |
| Bagata | | | | |
| 4 | Marginal | 107500 | 45200 | 13920 |
| 5 | Small | 186000 | 38968 | 21780 |
| 6 | Medium | 76350 | 28000 | 17100 |
| All Farms & Tribes | | 1360320 | 354888 | 187994 |

The analysis relating to annual value of the horticulture produce of all the major crops presented in the above table reveals that coffee is the most profitable crop. Second and third highest remunerative crop are mixed horticulture items and banana respectively. The farm wise analysis on the value of output of this table shows that the medium farms in case of both the tribes yields highest value of all horticulture crops. Table 10 presents a comparative view of the contribution of horticulture to the annual income of the selected sample households of both the selected tribes.

Table: 10
The Contribution of Horticulture to the Annual Income

| Sino. | Tribes/Farms | Percent of TVHC |
|------------|--------------|-----------------|
| (1) | (2) | (5) |
| Konda Dora | | |
| 1 | Marginal | 44.95 |
| 2 | Small | 48.26 |
| 3 | Medium | 57.03 |
| Bagata | | |
| 4 | Marginal | 50.66 |
| 5 | Small | 55.66 |
| 6 | Medium | 61.54 |
| 7 | All Tribes | 58.35 |

Note: TVHC-Total value of output from all the six horticulture crops.
 TAI-Total annual income



From the above table it is observed that horticulture is contributing a significant proportion of 53.35 percent of the total income of the selected households of both the tribes. However the contribution of horticulture to the total income is relatively higher in case of all the farms of Bagata tribe households when compared to Konda Dora tribe households. Across farms the medium and small farms incomes are significantly contributed by horticulture when compared to marginal farms.

VI. Conclusions & Suggestions for further development of Horticulture:

The intensive development of horticulture programmes in the study area by ITDA is diversifying the cropping patterns of the tribal farms because the horticulture programmes are helping the farms to cultivate different varieties of fruits and vegetables in the study area. In case of horticulture programme both the tribe households given importance to coffee, mixed horticulture and banana among the major crops and turmeric, ginger and maize among the minor crops. The extent of Gross Cropped Area is relatively lower in case of both tribes in case of horticulture programme when compared to area under other agriculture development programmes. However, the extent of crop intensity is relatively higher in case of both the tribe farms that are covered under horticulture programme. The reason is that in case of horticulture along with the major crops like coffee, mixed horticulture and banana in most of the areas the minor crops like turmeric, ginger and maize are also simultaneously cultivated by the farm households

The proportions of fallow land to operational holding vary considerably among the three categories of farmers among both the tribes households covered under horticulture programmes. However, according to the field reports of the households, during last five years because of intensive horticulture development in the study area there is a gradual decline in the fallow land for the three categories of farmers of the both the selected tribes. Also it is noticed that in the case of marginal farmers and small farmers there is striking decrease in the fallow land particularly among Bagata tribe small farmers and medium farmers there is a considerable decrease in the extent of fallow land. In case of both the tribe households who are covered under horticulture programme the Bagata tribes are not



undertaking shifting cultivation. Even among the primitive Konda Dora tribe the percentage of households reporting shifting cultivation are very low when compared to other agriculture development programmes like check dam and land development programmes. The prevailing low profile of shifting cultivation practices in the study area can be attributed to the effective implementation of horticulture programmes by ITDA.

The comparative analysis of the annual production of selected major horticulture crops shows the family average, per capita and yields per tree of selected crops. It reveals that production of coffee is relatively high when compared to mixed horticulture and banana. Though coffee recorded higher production in comparison to other horticulture crops the per capita and per family production is relatively recorded high in case of other crops mixed horticulture and banana. The selected households of Paderu mandal sell most of horticulture crops in the market and consume only little bit of produce. Horticulture emerges as a highly profitable business in the study area. The most profitable crops in the study area are coffee and mixed horticulture, among the major crops. The households sale the bulk portion of the produce in the market. The above analysis reveals that around 83.98 percent of the total produce is sold in the market. Most of the horticulture crops are cultivated for mainly sale in the study area. It is the main source of money/liquid income to the farmers in Paderu Mandal. The analysis reveals that the horticulture crops support the selected households families by generating a sufficient marketable surplus for them.

From the analysis it is observed that horticulture is contributing a significant proportion of 53.35 percent of the total income of the selected households of both the tribes. However the contribution of horticulture to the total income is relatively higher in case of all the farms of Bagata tribe households when compared to Konda Dora tribe households. Across farms the medium and small farms incomes are significantly contributed by horticulture when compared to marginal farms. Horticulture emerged as the most important source of income in the Paderu mandal. The notable aspect of the analysis in the study is that the contribution is more than 60 percent of the marginal and small farmers in the study villages. Thus the



observation is that horticulture crops significantly contribute to the income of people in the study area. The contribution of horticulture to the annual income of the sample households in the study area is recorded high. In spite of the special care taken by ITDA Paderu to promote horticulture practices in the study area the households are facing problems relating to inadequate transport facilities, lack of adequate irrigation facilities, destruction of crops due to birds and monkeys, destruction of crops due to strong wind and fog, attack of termite to mixed horticulture crop and crop stealing.

The findings of the study reveal that social and economic levels of the tribal communities are not homogenous. But they are at different levels of variability, tribal horticulture development can not be uniform. The horticulture development schemes have to be devised in the light of socio-cultural factors and economic needs of the tribals in each region and sometimes each community. To develop the tribal horticulture government is already implementing schemes like soil erosion losses soil conservation scheme is also taken up and so many horticulture programmes are also carrying by the ITDAs. In this regard it is necessary that horticulture schemes need to be integrated with other agricultural development schemes. The analysis points out that to reduce the intensity of problems associated with the improvement in the horticulture practices of tribes, the government should focus special attention to the creation of basic infrastructure facilities on a priority basis.

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GANDHIAN MODEL FOR INDUSTRIAL DEVELOPMENT

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Introduction:

Gandhi was perhaps the first Indian social thinker to raise the basic issue of the rural vs. urban antagonism in colonial societies. He had also raised the equally important issues of agricultural vs industry, small vs large industry, labour-intensive vs capital-intensive techniques in Indian economic development. He has tried to evolve practical programmes for immediate economic amelioration of the masses and for the restoration of self-respect among them. He believed that economic self-sufficiency for an individual and for a nation is unavoidable. This led him to think the various problems of the country and suggested action plan to solve them. He combined ethics and non-violence in to economics. The objective of this paper is to trace relevance Gandhi's economic ideas to the present day context.

Gandhi was not an economist in the sense of computing the allocation investment but he had passionate commitment to the revival of the village. He did not want all mills to disappear. He only wanted a non-exploitative relationship between cities and villages. The basic contribution of Gandhi was to focus attention on the conditions of surplus labour in the Indian economy. It is irrational to intensify the application of labour saving technology for expansion of output. It is both economically rational as well as socially desirable to seek maximization of output through utilization of surplus labour in small scale industry. An economic model for surplus labour utilization, in his view, could contribute simultaneously to the growth of output and as well as welfare of the masses.

He preferred the decentralization of small units of production to the concentration of large scale units in a fewer places. He wanted to carry



the production units to the homes of the masses, particularly in village. Evidently one advantage of promoting the village and cottage industries were to ensure employment generation and another was related to the issue of efficiency. Of course, there're many reasons to believe that it is cheaper to produce certain commodities in small and cottage industries these include following: firstly establishment charges are very less, secondly very few tools are required, thirdly there is no problem of storage, and fourthly the problem of over production does not arise since the level of production is determined by the requirements of the community. All these factors make the production by the small scale units economical and, thus provide logical basis to the Gandhian scheme of decentralization of village and cottage industries.

Concept of Industrialization:

Gandhiji believed that integration of cottage industries with agriculture provides adequate work to the farmers in their spare time and thus harnesses 'all the energies that are at present run to waste'. In fact, these industries increase the income of the villagers and satisfy their basic requirements. These industries would not only remove poverty and unemployment from the villages but also make the villages self-sufficient economic units.

In fact, Gandhi had suggested a number of cottage industries that can be started in villages. These included khadi industries, gur making, basket making, rope making, oil pressing units. Above all, Gandhi gave priority to khadi industry. According to Gandhi khadi is the Central Industry on which all other village industries revolve.

He proposed the following measures to revitalize the khadhi industry in the Indian economy:

- Compulsory introduction of spinning in all primary, and secondary schools.
- Cultivation of cotton in areas where it was not grown
- Organization of weaving by the multipurpose cooperative societies.



- All the employees in education and cooperative departments, municipal and district boards and gram panchayaths should be required to pass a test in spinning.
- Control of prices of handloom cloth woven of mill yarn.
- Imposition of a ban on the use of mills cloth in areas where the hand woven cloth was in abundance.
- Use of hand-spun cloth in all government and textile and weaving department.

The important of foreign yarn or cloth should be banned¹.

Commenting on the consequences of India's de-industrialization, in the wake of Britain's industrialization Gandhiji remarked as follows: *"There are said to be seven lakhs of villages in india. Some of them have simply been wiped out. No one has any record of these thousand who had died of starvation and disease in bengal, karnataka, and elsewhere. I tell you that the pressure from the top crushes those at the bottom²".* Gandhi was somewhat averse to modern industrialization which in his view, was spurred by 'craze' for machinery on the one hand and human greed for 'voluptuousness', leading to continuous multiplication of human wants on the other.

He believed that the western pattern of economic growth will not solve the kind of problems which India faced. Gandhi observed that industrialization had landed mankind in deep economic as well as moral crisis. This was because of the technological dynamism of an industrial society which has resulted in the transformation of it into an acquisitive society and this acquisitiveness, in turn, had been the main propeller of its technological dynamism.

According to Gandhi, the main characteristics of machinery are as follows: firstly, it displaces human or animal labour instead of supplementing it. Secondly it appears to have a law of its own, which results in not only in displacing labour but displacing it at ever increasing rate. He opposed to modern machine-based industrial development. *" I am against machines just because they deprive men of their employment and render them jobless. I*



oppose them not because they are machines, but because they create unemployment problem⁴.

Gandhi of course, did recognize the need for heavy industry and modern machinery to some extent. But he wanted them to be chosen and organized so that they would supplement the village industries. He seemed to reject the craze for industrialization and not the industrialization based on small producer and self-employed artisan. He rejected “mass production” and not “production by the masses”. Gandhi had favored village-based industrialization, extending to the big cities and large towns. Despite these views a basic distrust of industrialism however, had remained in Gandhi’s economic philosophy.

Gandhi must be credited for his emphasis on the role of small scale industries and agriculture in the economic development of an economy. Economists also recognized the importance of small scale industries and the need for their decentralization in an overpopulated and rural-based under developed country on the lines suggested by Gandhi.

Relevance of Gandhi’s Economic Ideas:

To attain smoother development of the Indian economy, it is imperative to develop all the regions of the country simultaneously in other words, the overall progress or the entire economy depends only on the balanced development of all the regions of the country. But in India, there exists a huge regional disparity. While some states are advanced and advancing economically, some other states are backward and becoming backward. Moreover, even within the state, some districts are much more backward than the rest.

In this context Gandhian economics is particularly relevant, which supports the attainment of self-sufficiency with planned economic growth pattern for each region. On the lines of Gandhi’s dream of expanding village industries, industrial policy resolutions of 1948, 1956 and particularly 1977 have offered a special favour for the development of small scale and village industries in India. As such the village and small scale industries have been playing an important role in the Indian economy in terms of



employment generation and poverty alleviation. This is certainly due to the fact that the small scale industries are more labour-intensive and capital saving.

The Gandhian view of self-sufficient village economy is particularly relevant in the context of reducing poverty and unemployment in India. Although the ratio of poverty has been declining in India, still one-third of its people live in human poverty. Hence, in order to improve the conditions of the rural poor, it is necessary to expand the rural industries further at a rapid rate, on the lines visualized by Mahatma Gandhi, as India lives in its villages.

Conclusion:

Gandhi is of the view that full employment of human resources is the basic need of a country. It is true that national income will increase if each and every person is employed fully. This can be possible to a large extent with the development of small scale possible to a large extent with the development of small scale industries with labour intensive techniques. The mechanization and large scale production cannot provide all the solutions to the problem of poverty and unemployment. Self-sufficient village economy is an ideal solution to the Indian economy.

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ACADEMIC PROGRESSION THROUGH GHATIKAS – IMPETUS TO EDUCATION DURING KALYANI CHALUKYAS – WITH SPECIAL REFERENCE TO NAGAVI GHATIKA (Part -1)

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INTRODCUTION

Learning was always considered an essential medium of acquiring knowledge in India since time immemorial. Ancient educational institutions in the form of Agraharas, Brahmapuris, Ghatikasthanas and Mathas existed all over South India . They were several traditional schools of teaching. The education was considered an imperative aspect of societal living . We find a large number of learning institutions in South India .Chalukyas of Kalyani who ruled a vast portion of South India extended patronage to many educational institutions during their period. This paper tries to bring out many issues connected with learning & focuses on Nagavi Ghatika which was a famous learning center during Chalukyas of Kalyani . An attempt is made here to trace levels of royal patronage extended & its impact on levels of scholastic progression.

A variety of ancient higher-learning institutions were developed in many cultures to provide institutional frameworks for scholarly activities. These ancient learning centers were sponsored by Kings & religious institutions which lead to the emergence of advanced scholastic temperaments. Chalukya kings such as Tailapa, Someshwara, Satyashraya ,Vikramaditya ,Jagadekamalla ,Jayasimha & other copiously supported the cause of educational spread. They periodically supported the establishment of Mutts Agraharas & Ghatikas.



1. MUTTS- Mutts were the residential schools where the teacher and the student lived together. They shared a specified place together for the promotion of education.
2. AGARHARAS – An Agraharas were the settlement of scholars where a separate arrangement existed for the teachers to teach & inhabit a new habitation .
3. GHATIKA – A Ghatika was a learning center which was meant for conferring degrees or certifying scholarships after finishing specific & precise studies. Generally rich merchants , Guildsmen, Military officials, palace personnel , influential officers engaged specific teachers to teach their children & issue credentials regarding completion of learning .
4. BRAHMAPURIS were institutions where a teacher ran a school either in his house or in a public place like temple or choultry¹ and was paid in cash or in kind². These Brahmapuri's were known more by the academic excellence of the teacher rather by its location. If the teacher was a well learned person in Vedas ,Agamas ,Shastra & science, then he was pursued to open a school in his own house or a near by vicinity. Reading writing and arithmetic were taught here with great perfection and much of the learning was made through memorising & by repeating the sentences or verses collectively³.

All these places played a key role in formulating an educational policy with primary emphasis to "Discipline & Self Control" during Chalukyas of Kalyani . The society was molded on the ethical values & social cohesion & harmony was thus evolved naturally. Nagavi Ghatika was one such great educational institution which supported the cause of learning besides being a center of education it supplemented to the societal wellbeing also..

MEANING OF GHATIKA

The meaning of ghatika as a time measure or twenty-four minutes is well known throughout India⁴. But the fact that it also denoted an educational institution in ancient and mediaeval Karnataka is very little



known. An effort is made here to show these ghatikas flourished as centres of learning and how private individuals and public bodies gave liberal grants for their development. The term ghatika has been differently understood by scholars. Prof. Kielhorn interpreted it as an establishment for holy and learned men and identified it with brahmapuri or the Brahmin quarters of a city. Prof. Barnett interpreted it as a meeting place or hall of learned and godly men and thus connected it with ghatige or ghalige which he takes to mean an assembly. Prof. Pathak translated it as a religious centre. Prof. Minakshi took ghatika to mean the place or institution where scholars and students strove after knowledge. The frequent mention of this term without details in many inscriptions has led to these various interpretations. But there are archaeological evidences, about ghatikas being institutions of advanced learning during mediaeval South India.

EPIGRAPHICAL EVIDENCES

The earliest mention of a ghatika in this sense is found in Kakusthavarman's Talagunda inscription⁵. It mentions a ghatika at Kanci, which in those days was a big cultural centre. Mayurasarman, the founder of the royal family of Kadambas went to this ghatika with his guru, eager to study "the whole sacred lore" Probably there was no such institution in his part of the country and the Ghatikas of Kanchi must have been well-known as a seat of higher learning. We find numerous Ghatikas in the later centuries in South India, modeled on the ghatika at Kanchi⁶. An inscription of that place, of 929-30 A.D., describes the land of Kadiyuru, and the learned men studying in its Agrahara and ghatika⁷.

OTHER IMPORTANT LEARNING CENTERS

The kings extended patronage to these higher educational institutions. Almost all other ghatikas belong to the time of the Chalukyas of Kalyana. Important among these are

1. Modigere (1045)
2. Nagai (1058),
3. Sudi (1060),



4. Hotturu (1064),
5. Tumbula (1068)
6. Rayabag (1127),
7. Puligere (1129) and
8. Henjeru (1167) were prominent.

Henjeru and Rayabag were Mahaghatikasthanas or the seats of the great ghatika⁸. Pottiyuru ⁹was akhila ghatikasthana. Others are simply mentioned as ghatikasthana or ghalige. The only inscriptions which gives complete details about the working of a ghatika are those of Nagavi¹⁰. Nagai in present Gulbarga district of Karnataka contained three big institutions of higher learning is clear from the three inscriptions of the place .One of them connected with the Traipurushadeva temple is called both a ghatika and a shale. The second was associated with Madhusudana temple and was called a matha¹¹.

7The ghatika of Traipurusadeva temple- Madhuva or Madhusudana, an officer of king Trailokyamallaadeva constructed this sale ¹²called ghatikasthana along with the temple of Traipurusadeva. In this ghatika, two hundred scholars studied Vedas and fifty-two studied the Shastras. Three teachers of the Vedas and three Shastras teachers formed the main staff along with librarians called Sarasvatibhandarigar and a ghatikaprahari. these, the three sastra teachers taught Bhattadarsana, Nyasa and Prabhakaradarsana, respectively. Provision was made for these members of the staff and the students for boarding and lodging. Land was allocated for their maintenance as follows:

30 mattars¹³ of land to the expounder of Bhattadarshana

30 mattars of land to the expounder of Nyasa

45, mattars of land to the expounder of Prabhakara

30 mattars of land to the expounder of Saraswathi Bhandara or Library

30 mattars of land to the expounder of the ghatikaprahari

1000mattars of land to the students¹⁴



It had a natsyasala or theatre for performance of dance , in its precincts .It had a three-storeyed entrance tower ¹⁵ A spacious building was built for the convenience of the inmates for carrying on their respective religious observances.

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- 1 They were named differently such as like Baraha matha , Koolimatha, Vastimatha Shalimatha or Odisuvamatha
- 2 during the harvesting season he was given lump sum grains
- 3 On par with Nalanda, Takshashila and Varanasi Universities of Ancient India , Nagavi ghatika was one of the famous universities in South India during Chalukyas.
- 4 The word ghatika is derived from the Sanskrit original root ghat which means "to take place" or "form".
- 5 belonging to the earlier half of the fourth century A.D.
- 6 The earliest example of a ghatika in Karnataka is to be found in Dharwar district at Kalas then known as Kadiyuru
- 7 The transformation of ghatika into Kannada Ghalige can be traced to 10th century. In the epigraphs Ghalige is mentioned as an learning center where, the Brahmans studied grammar, polity, literature, history, logic etc
- 8 South Indian Inscriptions Vol . XII pp 21-28
- 9 modern Hotturu in Dharwar district
- 10 South Indian Inscriptions VOI XII pp 1-34 & Sastri, Nilakanta K.A. (2002) [1955]. *A History of South India from prehistoric times to the fall of Vijayanagar*. New Delhi: Indian Branch, Oxford University Press.
- 11 it was called as a ghatika because members who established it are referred as ghatiyaras or officers of a ghatika.
- 12 school of higher learning
- 13 Mattara - meaning a measure



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- ¹⁴ Students of the ghatika or ghalige are called manis in a number of inscriptions; for example at Morigere, Sudi, Nagai, Tambula, etc
- ¹⁵ muruneleya bagilvada which vied with Indra's vimana in splendour



SOCIAL EXCLUSION OF DALITS IN INDIAN SOCIETY AFTER INDEPENDENCE ALSO

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In our country, we have a strong history of laws reflecting the ideology of ancient literature and this extends into practice of the law also. According to Basham, Brahminal codes began with the Vedas and Upanishads, collectively called 'Sutra'. Before getting into a detailed discussion on the impact of the sutra, just look at its meaning and types. Sutra literally means 'thread'¹ in a common understanding of the word. This 'thread' then almost always symbolized control. For example, a 'mangalasutra' which is a symbol of marriage for women signifies control on women.

Following Vedas and Upanishads were the grhya sutra dealing with domestic religious ceremonies and finally manuals of human conduct there were called as 'Dharmasutras'. Here, it is important to note that the term 'Hindu' was not used in reference to any of these texts as the term itself has its origin in later colonial statistical systems. Dharmasutras are often hailed as the earliest source of Hindu 'Law'. Due to the prestigious place that the sutras held, the early colonial period saw the conversion of the sutras from prose form to verses where they were also expanded. The recorded dharma sastra is that of Manu, probably composed in its final form in the 2nd and 3rd century A.D. in the Gupta period. Yajurveda is yet another dharmasastra that played a very important part in forming the civil law traditions in this region. Other important jurists of the middle ages were Hemadri and Jimutavahana whose treaties on inheritance (Dhayabaga) also influenced later Indian law but all these were considered as civil laws.

Caste based discrimination, including untouchability, originated in the Indian Sub-continent more than two thousand five hundred years ago².



Hindu religious scriptures, specially the Manusmriti, divided human beings in four varnas, namely,

- (1) Brahman
- (2) Kshatriya
- (3) Vaisya and
- (4) Sudra.

and their ascribed traditional roles were respectively intellectual, warrior, economic and manual work. Each varna was further divided in numerous castes and sub-castes. Varnas, caste and sub-castes are based on ascription, hierarchy, purity and pollution of water, food and body. Brahmins are at the top and Sudra at the bottom of the hierarchy. Castes and sub-castes within each varna are further heretically sub-divided. The Dalits are away from these four varnas, they are treated as fifth varna and out of varna dharma.

In Manusmriti 'Crime' 'Punishment' and 'Morality' were meant only for women and Sudras. The Manusmriti labeled Sudras as Criminals with capital punishments. Obedience, honesty to the masters of those of other varnas was laid very strictly on the shudras.

- (1) A once-born man (a Sudra), who insults a twice born man with gross invective, shall have his tongue cut; for his low origin³.
- (2) If he arrogantly teaches Brahmin their duty, the King shall cause hot oil to be poured into his mouth and into his ears⁴.
- (3) A low caste man who tries to place himself on the same seat with a man of high caste shall be branded on his hip and be banished, or (the King) shall cause his buttock to be gashed⁵.

Judicial power was to be kept out of the reach of shudras under the Manusmriti and vested almost entirely in the Brahmins. According to the Manusmriti social, economic and administrative power and opportunity of education was given only to the Brahmins and other three varnas.



Academics have provided many explanations for the emergence of varna and caste. Sacred religious scriptures such as the Purusha Sukta of the Rig Veda invented, and later the Manusmriti reinforced, caste hierarchy and a caste-based division of labour⁶. Yam Bahadur Kisan, a leading Dalit Scholar, has noted six reasons for the emergence of Sudras:

- (1) Non-Aryan slaves and those vanquished in battle,
- (2) Aryan non-Conformists, Aryan enemies,
- (3) Inter – marriage,
- (4) Progeny,
- (5) Occupation, and
- (6) Powerlessness⁷.

WHO ARE DALITS

After nationwide consultation, the National Dalit Commission (NDC) defined Dalit Community and Caste based untouchability in its Bill for an Act in 2003. According to this, 'Dalit Community' refers to communities of the bill, who have been left behind in social, economic, educational, political and religious spheres and deprived of human dignity and social justice due to caste based discrimination and untouchability. "Caste-based Untouchability refers to those communities, who have been discriminated against as water polluting, or touching whom requires purification, untouchables or... any community that was identified as untouchable before the promulgation of the New Civil Code, 1963". Based on this definition, NDC tentatively identified 22 dalit castes, including five from the Hills and 17 from the Terai (not identical to the Samiti list⁸).

"India has recorded unprecedented growth during its tenth five year plan from 2002 to 2007 at the rate of 7.7% per year.....Disadvantaged groups especially scheduled castes and scheduled tribes and the minorities have benefited less than they should have. Regional imbalances have emerged across and even within states⁹." The scheduled castes (SCs), also known as Dalits, constitute about 16.2%¹⁰ of India's population, while the scheduled tribes (STs) (known also as Adivasis) constitute for about 8%¹¹,



and the minorities, particularly Muslim minorities, constitute for 12%¹² of the population—altogether, constituting more than a third of the population. The special disabilities of the SCs, STs, and minority communities were recognized by the state at the time of independence in 1947 thanks to efforts by Dr. BR Ambedkar¹³ and other leaders, and special provisions were made in the Constitution followed by various legislations, policies and programmes. An attempt is made in the following pages to reflect on these from the perspective of the SC (Dalit) communities in the overall context of the country's progress and development.

POST-INDEPENDENT STATE POLICIES AND INTERVENTIONS:-

The nature of caste-based exclusion is described as “living mode exclusion” in political participation and exclusion and disadvantage in social and economic opportunities (Minorities at Risk, UNDP HDR 2004). One can recognize three strands in the state's approach and interventions in addressing the multiple deprivations faced by Dalits in policies and programmes. In the absence of legal provisions for affirmative action policy, the state has been using ‘general programmes’ for the inclusion, uplift, and empowerment of the SCs in the economic, educational, and social spheres.

- **Compensatory Measures:** To overcome the multiple deprivations inherited due to exclusion in the past and to bring them on par with others involving land reforms and political representation.
- **Protective Measures:** Recognising violence and caste-based discrimination meted out to Dalit communities; the Protection of Civil Rights Act (PCRA) and the SC/ST Prevention of Atrocities Act (SC/ST POA) were promulgated to protect and prevent violence on them.
- **Promotional Measures:** In order to address continuing discrimination and promote their active participation in the growth and development of the country, reservation in education, employment, and special economic provisions have been set in place.

In order to improve the educational status of Dalits the state provides:



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- ❖ Improvements in educational infrastructure, especially in areas inhabited predominantly by SCs.
 - ❖ Reservation in educational institutions
 - ❖ Financial support in terms of scholarship and fellowships at local, regional, national, and international levels.
 - ❖ Remedial coaching facilities to build qualitative capacities
 - ❖ Special hostels for boys and girls
 - ❖ Enhancement of opportunities for girls and women among them.

CONSTITUTIONAL PROVISIONS:-

- The constitutional provisions include general measures found in – equality before law (Article 14); Prohibition of discrimination (Art. 15), Protection of life and personal liberty (Art. 21)
- The social safeguards extended specifically to address untouchability and caste based work and discrimination are found in – Abolition of untouchability (Art.17), Prohibition of traffic in human beings and forced labour (Art. 23), Prohibition of employment of children in factories etc. (Art.24), Freedom to practice religion (Art.25),
- The economic safeguards are provided under - the provisions of Articles (23 and 24) as well as under promotion of educational and economic interests of SCs under (Article 46).
- Educational and cultural safeguards are specified in – provision for reservation (Art. 15 (4) and that admission into educational institution will not be denied (Art.29 (2)),
- Employment provisions are made under – equality of opportunities under (Art.16), and claim to services and posts (Art.335)
- Political representation based on a compromise between Gandhi and Ambedkar under the Poona Pact¹⁴ is found in the reservation of seats in parliaments and legislatures under Articles (330,332, 334).



- Monitoring of safeguards provided under Constitution and all other provisions and policies is also provided for by – setting up commission under (Art.338).

The potential of the Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989, to bring about social change, however, has been hampered by police corruption and caste bias, with the result that many allegations are not entered in police books. Ignorance of procedures and a lack of knowledge of the act have also affected its implementation. Even when cases are registered, the absence of special courts to try them can delay prosecutions for up to three to four years. Some state governments dominated by higher castes have even attempted to repeal the legislation altogether.

MULTIPLE FORMS OF DISCRIMINATION:-

Apart from the above constitutional provisions still Dalits are facing so many problems after completing 60 years of independence. Among those we will discuss some of the important areas where they are facing problems of social exclusion in the Indian society.

The discrimination against the Dalits takes different forms such as:

(1) CASTE AND EMPLOYMENT DISCRIMINATION:-

In traditional Indian society, Hinduism's fourfold *varna* theory describes a broad functional division of labour. For Dalits, however, who occupy the fifth and lowest caste category, caste remains a determinative factor for the attainment of social, political, civil, and economic rights. A lack of training and education, as well as discrimination in seeking other forms of employment, has kept these traditions and their hereditary nature alive. Many 'untouchable' community members, for example, continue to work as leather workers, disposers of dead animals, and manual scavengers. As part of village custom, Dalits are made to render free services in times of death, marriage, or any village function. The cleaning of the whole village, the digging of graves, the carrying of firewood, and the disposal of dead animals are also tasks that Dalits are made to perform. In all forms of labour,



women are consistently paid less than men, compounding the dual discrimination of caste and gender.

2. MANUAL SCAVENGING:

According to government statistics, an estimated one million Dalits are manual scavengers (a majority of them women) who clear feces from public and private latrines and dispose of dead animals; unofficial estimates are much higher. Manual scavenging is a caste-based occupation, deemed to polluting and filthy for anyone but Dalits. Manual scavengers exist under different caste names throughout the country, such as the Bhangis in Gujarat, the Pakhis in Andhra Pradesh, and the Sikkaliars in Tamil Nadu. Members of these communities are invariably placed at the very bottom of the caste hierarchy, and even the hierarchy of Dalit sub-castes. Using little more than a broom, a tin plate, and a basket, they are made to clear feces from public and private latrines and carry them to dumping grounds and disposal sites. Though long outlawed, the practice of manual scavenging continues in most states. There are no health benefits, no gloves, no masks, and no utensils. The majority is made up of women.

3. EXCLUSION FROM POLITICAL PARTICIPATION:-

Many reports from across the country reveal that Dalits exercise of their legitimate and rightful claim to representation (namely participation or leadership in the electoral process) is met with violence.

Due to reservations if Dalit has been elected to any constituency, the master of that Dalit will occupy his seat and power as the Dalit is his servant, the dalit has to sit on the floor and hold his hands. If any meetings were conducted these Dalit Surpanch or Counselor has to sit along with the mob, he cannot be called on to the Dias. The village elders or leaders of high caste will occupy the chair and preside over the meetings. We observe this in many villages and published in many news papers also.

4. EDUCATION AND RESERVATION:-

Untouchability in schools has contributed to drop-out and illiteracy levels for dalit children far beyond those of the general population, with



the 'literacy gap' continuing between Dalits and non-Dalits and literacy rates for Dalit women remaining as low as 37.8% in rural India (2001 Census). Teachers have been found to maintain discriminatory attitudes and practices that underlie caste relations in society.

The Indian Constitution mandates the state to provide free, compulsory and universal education for all children up to fourteen years, with special care and consideration given to promote the educational progress of scheduled castes. India's policy of reservations is an attempt by the central government to remedy past injustices related to low-caste status. To allow for proportional representation in certain state and federal institutions, the constitution reserves 22.5 per cent of seats in federal government jobs, state legislatures, the lower house of parliament, and educational institutions for scheduled castes and scheduled tribes.

Despite state assistance in primary education, Dalits also face an alarming dropout rate. the loss of faith in education as an instrument for socio-economic change, and the discriminatory and abusive treatment faced by Dalit children, who often sit in the back of classrooms, at the hands of their teachers and fellow students¹⁵.

The reservation policy too, has not been fully implemented. The National Commission for Scheduled Castes and Scheduled Tribes' report also indicates that of the total scheduled caste reservation quota in the Central Government, fifty-four per cent remains unfilled.

5. BONDED LABOUR:-

Given the insignificant amounts of remuneration in manual scavenging, agricultural labour, and other fields of Dalit employment, it comes as little surprise that many families borrow money from their upper-caste neighbours and consequently go into bondage.

Bonded labour refers to work in slave-like conditions in order to pay off a debt. Due to the high interest rates charged and the abysmally low wages paid, the debts are seldom settled. Bonded labourers are frequently low-caste, illiterate, and extremely poor, while the creditors/



employers are usually higher-caste, literate, comparatively wealthy, and relatively more powerful members of the community.

The Bonded Labour System (Abolition) Act, 1976 abolishes all agreements and obligations arising out of the bonded labour system. It aims to release all labourers from bondage, cancel any outstanding debt, prohibit the creation of new bondage agreements, and order the economic rehabilitation of freed bonded labourers by the state. It also punishes attempts to compel persons into bondage with a maximum of three years in prison and Rs.2, 000 fine. But still in some areas (Villages or towns) this system is prevailing.

6. NUTRITION:-

Half of India's Dalit Children are undernourished, 21% are 'severely underweight, and 12% die before their 5th birthday¹⁶.

7. AGRICULTURAL LABOURERS:-

Most Dalit victims of abuse are landless agricultural labourers who form the backbone of India's agrarian economy. Despite a host of land reform legislation, today over eighty-six per cent of Dalit households are landless or near landless.

Lack of access to land makes Dalits economically vulnerable; their dependency is exploited by upper- and middle-caste landlords and allows for many abuses to go unpunished.

8. EXCLUSION FROM BUDGET:-

The Government of India has a potentially powerful mechanism for the economic empowerment of Dalits known as Special Component Plan (SCP). The spirit of the Plan has been consistently thwarted in its application and implementation by most of the departments at the Central and States levels, by diverting on an average Euro 2,000 million (2.7 billion US dollars) every year¹⁷ during the past five-year plan period.

9. PHYSICAL, ECONOMIC AND RACIAL DISCRIMINATION:-

A principal weapon in sustaining economic and racial discrimination against Dalits is the use of social and economic boycotts



and acts of retaliatory violence. Dalits are physically abused and threatened with economic and social ostracism from the community for refusing to carry out various caste-based tasks. Any attempt to alter village customs, defy the social order, or to demand land, increased wages, or political rights leads to violence and economic retaliation on the part of those most threatened by changes in the status quo. Dalit communities as a whole are summarily punished for individual transgressions; Dalits are cut off from community land and employment during social boycotts, women bear the brunt of physical attacks, and the letter of the law is rarely enforced.

10. ECONOMIC EXCLUSION AND DISCRIMINATION:-

Since 1991, the start of India's New Economic Policy, the country has made astounding progress in the areas of technology, infrastructure, machinery, science, space and even nuclear research. Much of this progress has meant little to Dalits; most continue to live without the very basic amenities of electricity, sanitation, and safe drinking water.

Dalit households are equipped with electricity, as compared to sixty-one per cent on non-Dalit households. Only ten per cent of Dalit households have sanitation facilities as compared to twenty-seven per cent of non-Dalit ones. Disparities in distribution are not accidental. 'Untouchability' is reinforced by state allocation of facilities; separate facilities are provided for separate colonies. Dalits often receive the poorer of the two, if they receive any at all. In many villages, the state administration installs electricity, sanitation facilities, and water pumps in the upper-caste section, but neglects to do the same in the neighbouring, segregated Dalit colony. Basic supplies such as water are also segregated and medical facilities and the better, thatched-roof houses exist exclusively in the upper-caste colony.

11. HUMAN DEVELOPMENT INDEX (HDI) AND HUMAN POVERTY INDEX (HPI):

According to the UNDP HDI and HPI for SC vis-a-vis non-SC/ST, the HDI for SCs is estimated to be 0.303 which is lower than the HDI for non-SC/ST at 0.393 for the period 1980 to 2000¹⁸. As a measure to assess the level of deprivation¹⁹, the value of HPI was estimated at 33.63% for all



social groups at the national level and 41.47% for SCs and that for non-SC/ST at 31.34%.

However there is a clear departure from this *denial* through a realistic acknowledgment of the situation. Manmohan Singh, the President of India, at an international conference on Dalits and Minorities in New Delhi on the 27 November 2006²⁰ drew the parallel between social and caste injustices saying it was modern India's failure that millions of Dalits were still fighting prejudice. He explained:

Even after 60 years of constitutional and legal protection and support, there is still social discrimination against Dalits in many parts of our country. Dalits have faced a unique discrimination in our society that is fundamentally different from the problems of minority groups in general. The only parallel to the practice of untouchability was apartheid.

CONCLUSION AND INCLUSIVE MEASURES:-

Despite of the many policies and provisions, continuing inequalities and deprivation of the Dalit Communities poses many questions.

- The constitution should ensure that the fundamental and human rights of the Dalit community are not violated in the name of social norms and values. Measures should be taken to ensure that: there is no discrimination in civil society.
- To guarantee an individual's right to marry any person of their choice and punish those who oppose this right. Everyone should have access to justice (with the necessary re-orientation of judges) and the right to fair administrative practices. The cultural rights of Dalits should be protected and their access to sacred sites guaranteed.
- Women should have equal access to and control over financial assets of the family. The state should formulate policies and launch programmes to encourage inter-caste marriage.
- The government must also fill all vacant scheduled-caste reservation posts with Dalit candidates, and as recommended by the National Commission for Scheduled Castes and Scheduled Tribes, provide



for reservations in the judiciary as well as the private sector, which continues to enjoy government patronage in terms of concessional land, financing, and excise and sales tax relief.

- The World Bank and other international lending institutions operational in India should ensure that anti-discrimination measures are built into World Bank and Asian Development Bank-funded projects in areas where the problems of caste violence and caste discrimination are severe.
- United Nations agencies active in India must also pay particular attention to the issue of caste violence and caste discrimination and develop programs and strategies designed to curb abuse and encourage accountability.
- Here again our experience is that while some very progressive policies have been put on ground such as 50% reservation in local governance for women and population proportionate to Dalits; reservations in other statutory bodies, representation, and nominal capacity building has been taken to be adequate for their effective participation.
- There is need to recognize the continuing discrimination in providing services. Studies show that teachers allocated to distant tribal areas or Dalit habitations do not attend their work regularly, do not regularly teach, treat children in discriminatory manner, show that health workers do not visit habitations of the marginalized etc. The state programmes are yet to recognize these as critical issues that need to be addressed for development equity and inclusion.
- The only place that has the potential to bring children from excluded and other communities together are schools-related programmes. Efforts need to be done to bring the lessons of human rights and special programmes to engage children together.
- In order to address the widespread discrimination and support marginalized communities to engage with expanding opportunities, it is important to ensure them equal access and the removal of barriers. An independent commission in this regards has already



been recommended by the Prime Minister's High Level Committee on the Social, Economic and Educational Status of Muslim Community in India²¹ and can be extended to cover other marginalized communities as well.

- Politics and political parties should be inclusive and facilitate the participation of Dalits. Parties should adopt sufficient number of Dalit candidates who are able to win seats.
- Lack of economic and social security Dalits have been dislodged from their chosen professions and businesses. It advocates the abolition of all forms of bonded labour and the promotion of rights connected to work and the satisfaction of basic needs. It supports affirmative action in the economic sphere, including in state owned industries and educational facilities. It points to the need for radical land reform. And Dalits must participate in plans for Dalit development.

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6. Kisan Yam Bahadur – The Nepali Dalit Social Movement (Lalitpur: Legal Rights Protection Centre, Nepal, 2005) Pages – 14 to 24.
7. Ibid, pages 25-27.
8. (1) Lohar, (2) Sunar, (3) Kami, (4) Damai, (5) Kasai, (6) Sarki, (7) Badi, (8) Gaine, (9) Kusule, (10) Kuche, (11) Chyame, (12) Pode, (13) Chamar, (14) Dhobi, (15) Paswan (Dusadh),(16) Tatma, (17) Batar, (18) Khatbe, (19) Musahar, (20) Santhal, (21) Satar, and (22) Halkhor. Satar and



Santhal is the same indigenous nationality but they are listed as Dalits because they are treated as untouchables by some "high caste" people in some villages and towns in the eastern Terai region.

9. Eleventh Five Year Plan: Inclusive Growth, Vol I, No 1,2008
10. 167 million people
11. 84 million people
12. 138 million people
13. Dr. B.R. Ambedkar is the icon of the Dalit community, himself a Dalit was appointed the chairperson of the drafting committee that drafted India's Constitution.
14. Recognising the role of democratically elected leadership for improving the conditions of Scheduled Caste communities, Dr. Ambedkar forcibly argued for separate electorate for the Dalit community. As Gandhi opposed this with a fast unto death, a compromise formula of political reservations for SCs and STs was incorporated into the Constitution.
15. In a school in Dhandhuka town, Gujarat, for example, a thirteen-year-old Dalit boy was singled out among several students playing with his Brahmin teacher's scooter. The teacher told the boy's father, a manual scavenger, that he was going to expel the child from school. After much pleading on the father's part, the teacher allowed the boy to stay in school on the condition that the father sign an apology letter. As the boy reentered the classroom, the teacher threatened the child saying he would not allow him to study or amount to anything in life. Later that evening the boy was found dead on the railroad track, his body cut into three pieces by an oncoming train. In his pocket was found the following suicide note: ***"I would not have felt bad if the teacher had abused me. I would not have felt bad if the teacher had slapped me. But because he humiliated my father, I felt very bad and finally when he told me he wouldn't let me study or progress in life, I felt extremely hurt. If I am not going to be able to study and progress in life what is the meaning of living my life?"***



16. national Family Health Survey, Commissioned by the Indian Ministry of Health and Family Welfare, 1998-99, page 11, www.nfhsindia.org/data/india/indch6.pdf
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18. UNDP (2007). *Human Poverty and Socially Disadvantaged Groups in India*.
19. Is a measure with reference to IMR, illiteracy rate, poverty ratio (head count ratio), health status, and nutrition status?
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- ² ‘The Dalits of Nepal and New Constitution’, - Background paper on Dalit Issues’ – by Dr.Krishna B. Tribhuvan University, Kirtipur, Kathmandu.
- ³ Untouchables in Manu’s India, Chapter VIII, “On Rule and Punishments Code”, 270, Shamsul Islam p-49.
- ⁴ Ibid, Code 272
- ⁵ Ibid, Code 81, p-50
- ⁶ Kisan Yam Bahadur – The Nepali Dalit Social Movement (Lalitpur: Legal Rights Protection Centre, Nepal, 2005) Pages – 14 to 24.



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- ⁷ Ibid, pages 25-27.
- ⁸ (1) Lohar, (2) Sunar, (3) Kami, (4) Damai, (5) Kasai, (6) Sarki, (7) Badi, (8) Gaine, (9) Kusule, (10) Kuche, (11) Chyame, (12) Pode, (13) Chamar, (14) Dhobi, (15) Paswan (Dusadh), (16) Tatma, (17) Batar, (18) Khatbe, (19) Musahar, (20) Santhal, (21) Satar, and (22) Halkhor. Satar and Santhal is the same indigenous nationality but they are listed as Dalits because they are treated as untouchables by some "high caste" people in some villages and towns in the eastern Terai region.
- ⁹ Eleventh Five Year Plan: Inclusive Growth, Vol I, No 1, 2008
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- ¹³ Dr. B.R. Ambedkar is the icon of the Dalit community, himself a Dalit was appointed the chairperson of the drafting committee that drafted India's Constitution.
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- ¹⁷ Calculated from Expenditure Budget Vol. II (Notes on demands for Grants), *Union Budget 2006-07*; Statement No. 21, Expenditure Budget Vol. I, *Union Budget 2006-07*; Outcome Budget 2006-07- for various Ministries of Central Government.
- ¹⁸ UNDP (2007). *Human Poverty and Socially Disadvantaged Groups in India*.
- ¹⁹ Is a measure with reference to IMR, illiteracy rate, poverty ratio (head count ratio), health status, and nutrition status.
- ²⁰ *The Guardian*, 28 December 2006 – reporting the Prime Minister of India's inaugural address on the occasion of the International Conference on Dalits and Minorities in New Delhi, 27-28 December 2006.
- ²¹ India Govt. of (2005), Sachar Committee Report



EXCHANGE TRADED FUNDS: TAXABLE INVESTMENT OPTION FOR INVESTORS

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Introduction:

Exchange traded funds (ETFs) are a rapidly growing class of financial products. ETFs are typically organized as unit trusts. They were introduced in 1993, and by the end of 2008, they held \$25 trillion in assets — 2.4 percent of the total assets in equity mutual funds. The share of equity mutual fund assets held through ETFs doubled in 2007 and rose by nearly fifty percent in 2008. With several years of continued growth at this pace, the assets held through ETFs will rival the amount held in equity index funds. Exchange traded funds are of interest to public finance researchers concerned with Taxation and portfolio behavior for two reasons. First, they represent new financial innovations that are sometimes described as prototypes for the future evolution of the mutual fund industry. It is therefore important to understand their tax treatment and their after-tax returns. Second, ETFs are often promoted as being more “tax efficient” than traditional equity mutual funds. By reducing the tax burden on investments in corporate stocks, relative to investments in such stocks held through equity mutual funds, ETFs may therefore move closer to the consumption-tax treatment of corporate capital income. In this brief paper, we compare the pre-tax and after-tax return on the largest exchange traded fund, the SPDR trust that holds the securities in the S&P500, with the returns on the largest equity index fund, the Vanguard Index 500 fund. This fund tracks the same index as the SPDR trust. We extend the ETF return calculations of Elton, Gruber, Comer, and Li (2000) by focusing on a longer sample period and by comparing ETF returns with those on index funds.



Mutual funds are subject to specialized tax rules. In particular, they must pass through Realized capital gains to their shareholders. Dickson and Shoven (1995) and Dickson, Sialm, and Shoven (2000) emphasize that this raises the tax burden on mutual fund investors relative to the tax burden on a buy-and-hold portfolio of securities. When a fund manager sells appreciated shares, buy-and-hold investors in an equity mutual fund may become taxable on the fund's realized capital gains. Exchange traded funds are technically mutual funds, so they are governed by the same tax rules, but they have used a technique known as "redemption in kind" to substantially reduce or even eliminate their distributions of realized capital gains. This accounts for their historical tax advantage relative to many traditional equity mutual funds.

1. The Role of Exchange Traded Funds:

ETFs are traded securities. Gastineau (2001, 2002) provides a very detailed history of both the history of ETFs and the current operation of these products. The first ETFs were traded on the American Stock Exchange, although ETFs are now traded on the New York Stock Exchange as well. Each ETF share is a claim on a trust that holds a specified pool of assets. The SPDR trust, for example, holds the stocks in the S&P500. ETF shares are created when an authorized financial institution deposits a portfolio of securities with the trustee and receives ETF shares in return. These ETF shares can be sold to other investors. The market for ETF shares operates like the market for shares of a common stock. Investors can buy or sell ETF shares at any point during the day. ETF share prices may diverge from the underlying net asset value (NAV) of the securities held in the trust, although such divergence is restricted by the capacity of authorized financial institutions to create and redeem ETF shares. If the ETF share price rises too far above the NAV for the underlying assets, the creating institutions will buy the associated securities, deposit them in the trust, and create new ETF shares. If the ETF share price falls below the NAV of the underlying assets, institutions will purchase ETF shares and redeem them for the underlying securities.



ETF shares must be purchased through brokerage firms, which entail commission costs. They can be purchased on margin and sold short. These features, as well as the opportunity to trade ETF shares throughout the day, distinguish ETFs from shares in traditional equity mutual funds. Mutual funds can only be bought or sold at their end-of-day net asset value. In many cases they can be purchased without any commission, directly from the fund complex. Mutual fund shares cannot be sold short or bought on margin. These differences suggest that ETFs and mutual fund shares may be appropriate for different types of investors: ETFs for investors who demand short-term liquidity and who buy in large lots, equity mutual funds for investors who make many small purchases or sales and who place less value on liquidity.

The foregoing differences notwithstanding, ETFs are similar to mutual funds in many ways. Both have operating expenses that reduce investor returns. Most ETFs to date have been designed to track a specified market index, so they are similar to equity index funds. Both ETFs and index funds may experience some "tracking error" in matching the pre-tax return on the index. ETF and mutual funds can differ in their expense ratios, their tracking error, and, because of the bid-ask spread on the ETF, in the relationship between their purchase price and the net asset value of the underlying index securities. On an after-tax basis, differences in capital gain realizations between ETFs and equity index funds may also lead to differences in returns.

The table no.1 represents information on the growth of ETFs, equity index funds, and all equity Mutual funds during the last decade. The first column shows that, when ETFs were first introduced, and 2006, the assets held by equity mutual funds rose roughly five-fold. Over the same period, the assets of domestic index funds rose by a factor of fifteen. Index funds represented three percent of the assets in equity mutual funds in 2000, compared with nearly nine percent in 2006. The growth in ETFs is even more dramatic. ETFs had virtually no assets in 1993, but by year-end 2006, they accounted for 1.7 percent of equity mutual fund assets. This share had grown to 4.6 percent by December 2008.



Table 1:
Assets in Equity Mutual Funds and Exchange Traded Funds, 2000-2008

| Year | Equity Mutual Funds | Domestic Equity Index Funds | Exchange Traded Funds |
|------|---------------------|-----------------------------|-----------------------|
| 2000 | 740.7 | 22.6 | 0.46 |
| 2001 | 852.8 | 26.0 | 0.42 |
| 2002 | 1249.1 | 47.0 | 1.05 |
| 2003 | 1726.1 | 83.5 | 2.40 |
| 2004 | 2368.0 | 147.9 | 6.70 |
| 2005 | 2978.2 | 233.1 | 15.56 |
| 2006 | 4041.9 | 344.0 | 33.86 |
| 2007 | 3962.3 | 339.3 | 65.59 |
| 2008 | 3348.7 | 332.3 | 78.85 |

Source: Authors' tabulations based on data from the Investment Company Institute.

ETF assets are highly concentrated. Table 2 shows that at the end of 2008, eight ETFs had at least \$1.5 trillion in assets. The two largest funds, the SPDR trust (ticker symbol SPY) and the NASDAQ 100 trust (ticker symbol QQQ) trust, accounted for more than \$51 billion in ETF assets, or nearly three quarters of the total. Table 2 also shows that the expense ratios charged on the largest funds vary from nine basis points (i-Shares S&P500) to 28 basis points (SPDR Technology). In general, the expense ratios on ETFs that invest in specific industries or in indices that include non-U.S. stocks are higher than the expense ratios for ETFs that hold only domestic securities. The expense ratios for most of the large ETFs, however, are substantially below the expense ratios for equity mutual funds, even those for index funds. Data compiled by the Investment Company Institute suggest that in 1998, the asset-weighted average expense ratio for domestic equity index funds was 24 basis points (0.24 percent) per year.



Table 2: Exchange Traded Funds with More than \$1.5 trillion in Assets

| Fund Name | Assets (\$ trillion) | Launch Date | Expense Ratio |
|-----------------------------------|----------------------|-------------|---------------|
| SPDR Trust (SPY) | \$30.4 | 1/29/93 | 0.12% |
| NASDAQ -100 Trust (QQQ) | 21.8 | 3/09/99 | 0.18 |
| S&P Midcap 400 Trust (MDY) | 4.8 | 5/4/95 | 0.25 |
| I Shares S&P 500 Index Fund (IVV) | 3.6 | 5/15/00 | 0.09 |
| DOW Diamond Series Trust I (DIA) | 3.0 | 1/27/98 | 0.12 |
| I Shares Russell 2000 Index Fund | 2.1 | 5/22/00 | 0.20 |
| Rydex Currency Shares ETFs | 1.6 | 5/22/05 | 0.16 |
| Barclays Bank PLC (iPath ETNs) | 1.5 | 11/22/06 | 0.20 |

Source: Wall Street Journal January 7, 2002, page R17.

2. Comparing Returns on ETFs and Index Funds:

To illustrate the differences in the before-tax and the after-tax returns on ETFs and Traditional equity mutual funds, consider a taxable investor who faces a tax rate of d on dividend income and cg on realized long-term capital gains. Assume that all realized gains are long term. For investors who do not liquidate their holdings, the pretax return (R) on both ETFs and mutual funds consist of three components: $R = d + g + u$. In this expression, d denotes dividend income, g denotes realized capital gains distributed by the ETF or the fund, and u denotes unrealized capital gains. All three of these return components are measured as percentages of the beginning of period value of the fund or the ETF. For the fund this would be measured using NAV, while for the ETF, the initial value could be measured using either NAV or the market price of ETF shares. Table 3



presents information on the return to holding an S&P500 portfolio by holding the

SPDR exchange-traded fund and by holding the retail Vanguard Index 500 fund. The table also shows the returns on the index itself. We consider the retail version of the Vanguard index fund which has higher expenses than the institutional fund for clients with large portfolios. We calculate returns on the SPDR trust in two ways. The first measures annual undistributed capital gains as the difference between the net asset value of the SPDR trust at the beginning and at the end of the year. The second measures undistributed capital gains as the difference between the closing prices for the shares in the SPDR trust over the same period. The NAV and closing price can differ for the ETF. Table 3 shows that on average, the total pretax of undistributed capital gains, below the return on the Vanguard Index 500. This fund in turn had an average return that was six basis points lower than the return on the S&P 500 Index. The return differential between the index fund and the index is smaller than the index fund's expense ratio. This indicates that the Vanguard Index 500 fund outperformed the index during our sample period. The superior performance of the index fund may be due to various trading strategies with positive average returns, such as purchasing shares in companies that are being added to the S&P 500 when their addition is announced, rather when the addition actually takes place.

The 22 or 23 basis point shortfall between the average return on the SPDR trust and the return on the S&P 500 Index is explained by two primary factors. First, the expense ratio for the SPDR exchange traded fund averaged 17 basis points over the eight-years period we consider, second, when an ETF receives dividend payments, they are held in a non-interest-bearing cash account until the end of each quarter, at which point they are



distributed to investors. Elton, Gruber, Comer, and Li (2000) observe that in a rising market, like that experienced during much of our sample period, the delay in reinvesting dividends will cause the return on the ETF to fall below that on the market index or on index funds that reinvest dividends immediately.

The calculations in Table 3 suggest that the average return on the SPDR trust has been Close to the average return on the S&P 500 index, and that it has been within twenty basis points of the average pretax return on the lowest-cost retail index fund. The average ETF return would be closer to the average return on all index funds, since other retail index funds have higher expense ratios than the Vanguard Index 500. The disparity between the ETF return and the index fund return would be larger if we considered an institutional index fund, such as Vanguard Admiral shares, which charge an expense ratio of 12 rather than 18 basis points. Table 3 shows that while the average return on the SPDR trust tracks the average S&P 500return, there are non-trivial year-to-year differences. The difference between the closing price and the NAV on ETFs can generate differences between the ETF return calculated using closing prices and the return on the index fund or the S&P 500 index. In 2000, for example, there was nearly a 60 basis point difference between the ETF return calculated using closing prices and that calculated using the net asset value at the beginning and end of the year.



Table 3:

Calendar Year Returns on S&P 500 Index Funds, ETFs, and the S&P500 Index

| Exchange Traded Fund (SPY) | Total Return, NAV (Closing Price) | Dividend Yield (% of Lagged Price) | Distributed Capital Gains (% of Lagged Price*) |
|----------------------------|-----------------------------------|------------------------------------|--|
| 2002 | 1.16% (0.67%) | 2.64% | 0.00% |
| 2003 | 37.22 (38.10) | 2.85 | 0.02 |
| 2004 | 22.70 (22.54) | 2.26 | 0.20 |
| 2005 | 33.06 (33.48) | 1.87 | 0.00 |
| 2006 | 28.35 (28.69) | 1.46 | 0.00 |
| 2007 | 20.86 (20.39) | 1.17 | 0.00 |
| 2008 | -9.15 (-9.73) | 1.03 | 0.00 |
| Average | 19.17 (19.16) | 1.90 | 0.00 |
| Vanguard Index 500 Fund | | | |
| 2002 | 1.18 | 2.67 | 0.46 |
| 2003 | 37.45 | 2.84 | 0.30 |
| 2004 | 22.88 | 2.22 | 0.43 |
| 2005 | 33.19 | 1.90 | 0.85 |
| 2006 | 28.62 | 1.48 | 0.47 |
| 2007 | 21.07 | 1.24 | 0.87 |
| 2008 | -9.06 | 0.96 | 0.00 |
| Average | 19.33 | 1.90 | 0.48 |
| S&P 500 Index | | | |
| 2002 | 1.32 | 2.83 | -1.54* |
| 2003 | 37.58 | 3.00 | 34.11* |
| 2004 | 22.96 | 2.42 | 20.26* |
| 2005 | 33.36 | 2.09 | 31.01* |
| 2006 | 28.58 | 1.67 | 26.67* |
| 2007 | 21.04 | 1.36 | 19.53* |
| 2008 | -9.10 | 1.11 | -10.14* |
| Average | 19.39 | 2.07 | 17.13* |

Source: Data underlying calculations for the SPDR return at NAV and for the S&P500 Index are drawn from the S&P Monthly Review. SPDR closing price returns are computed from CRSP data. Data on the Vanguard Index 500 fund was collected from various fund reports to shareholders. * indicates that capital gains on the S&P 500 Index are total capital gains, not distributed capital gains as in the case of the SPY and Vanguard Index Fund.



3. Taxes and Transaction Costs:

The current-year after-tax return for a buy-and-hold investor in either an ETF or an index fund is $Rat = (1-\tau_d)d + (1-\tau_{cg})g + u$. Bergstresser (2002) note that unrealized gains in fact face a tax burden that in present discounted value is some fraction of the current statutory tax rate. Assuming a zero tax rate on undistributed gains probably overstates the effective after-tax return differences between the SPDR trust and the Vanguard Index 500.

The average capital gain distribution on the SPDR trust, as a percentage of the beginning of year trust value, has been three basis points per year over the 2000-2008 periods. For the Vanguard Index 500 fund, the average capital gain distribution has been 48 basis points. For a taxable investor facing a 20 percent marginal tax rate on realized capital gains, the after-tax return on the index fund would be reduced, relative to that on the SPDR, by roughly nine basis points.

Table 4 shows the before-tax and the after-tax geometric mean return on both the SPDR and the Vanguard Index 500 fund over the 2000-2008 periods. Before tax, the return on the Vanguard Index 500 is 21.5 basis points higher than the return on the ETF. This value is different from the value in Table 3, which focuses on the arithmetic mean return. For an investor facing an income tax rate of 39.6% on dividend income, and 20% on long-term capital gain realizations, the after-tax return on the Vanguard Index 500 is 17.2 basis points higher than that on the SPDR trust. If the investor faces a lower marginal tax rate, 28% on ordinary income, then the return differentials 17.9 basis points in favor of the Vanguard Index 500 fund. These modest differences suggest that the higher tax burden associated with the greater capital gain distributions on the Index 500 fund, relative to the SPDR ETF, do not reduce the after-tax return by enough to outweigh the pretax return advantage of the index fund. The capital gain distributions of the Vanguard Index 500 fund are very low by comparison to other equity mutual funds, and even by comparison to other index funds. If we compared the SPDR with other index funds, the after-tax return benefits of low capital gain distributions would be magnified.



The calculations in Table 4 do not include all of the potential costs that an investor might face in purchasing an exchange traded fund. Investors must pay commission charges to a broker when they buy or sell ETFs. In addition, the bid-ask spread on ETFs raises the round-trip transaction cost. For the 2000-2008 period, the average difference between the bid and ask prices for the SPDR trust, as a percentage of the midpoint of the price range for each day, was 0.096percent (9.6 basis points). This spread would essentially represent a one-time charge associated with trading in ETFs. Commission charges should be viewed in the same way – a one-time cost that reduces the return on the ETF investment.

We have not tried to calculate the effect of these transaction costs on the internal rate of return on the SPDR trust relative to that on the Vanguard Index 500. If an investor were holding the SPDR trust for only a single year, then the return would be reduced by the average bid-ask spread, or by another 9.6 basis points. Commission costs would further reduce the return, but the magnitude of this effect would depend on the size of the ETF purchase. Over longer holding periods, the transaction cost associated with the bid-ask spread has a more muted effect on the internal rate of return.

Table 4: After-Tax Returns for Taxable Investors in SPY and Vanguard Index 500, 2000-2008

| Return Measure | SPY (ETF) | Vanguard Index 500 | Difference |
|---|-----------|--------------------|------------|
| Before-Tax | 17.982% | 18.197% | 0.215% |
| After Tax with 39.6% Ordinary Income Tax Rate | 11.993 | 15.165 | 0.172 |
| After-Tax With 28% Ordinary Income Tax Rate | 15.227 | 15.406 | 0.179 |

4. In-Kind Redemptions and After-Tax Returns:

The SPDR trust has distributed fewer capital gains than the Vanguard Index 500 over our sample period. The difference in capital gain realization rates between ETFs and equity mutual funds has more generally been a key component of the marketing claim that ETFs are “tax efficient” relative to mutual funds. The experience of the SPDR trust is not representative of



all ETFs — many ETFs have distributed capital gains in recent years. However, the way ETF shares are created and redeemed provides ETFs with a means to lower their capital gain realizations relative to some traditional equity mutual funds. When arbitrageurs redeem ETF shares from the trust, the trustee has the option of Distributing the underlying securities that comprise the index, rather than cash, to the arbitrageur This is known as “redemption in kind,” and it is a strategy that is available to all investment companies operating under the terms of the Investment Company Act of 1940. Traditional equity mutual funds can also utilize redemption in kind, although they have historically used this option relatively infrequently. The greater use of this strategy by the ETFs reflects in part their greater frequency of large trades, as arbitrageurs create and redeem trust shares.

Redemption in kind offers the trustee the opportunity to reduce the value of unrealized Capital gains held within the ETF trust. When the trustee distributes securities, he can choose to distribute securities with substantial embedded capital gains. When an arbitrageur redeems \$100,000 of ETF shares for \$100,500 of underlying stock, the capital gain for the arbitrageur is \$500. This is true even if the ETF distributes a basket of securities with a current market value of \$100,500, but a basis to the ETF of \$50,000. When the ETF distributes these securities with a basis below the market price, however, it eliminates the potential capital gains tax liability that ETF investors might face if these shares were sold, thereby triggering a pass-through of realized capital gains. Thus redemption in kind provides a way around the problem of embedded capital gains in open-end equity mutual funds. By distributing low-basis stock, the ETF reduces the Likelihood that it will at some point need to sell low-basis stock and then distribute realized capital gains to its investors.

Redemption in kind is a powerful means of reducing embedded capital gains. As of September 30, 2000, for example, the SPDR trust held net assets of \$24.29 billion, capital loss carry forwards of \$0.52 billion, and unrealized capital losses of \$1.06 billion. Despite the fact that the trust had grown through a period of substantial market appreciation, it apparently had succeeded in distributing its low-basis securities and retaining higher basis



holdings. Redemption in kind is not the only factor leading to differences in capital gain realizations between the SPDR trust and the Vanguard Index 500. Because the SPDR trust was created in 1993, while the Vanguard Index 500 began trading in the 1970s, the distribution of purchase bases for the securities in the SPDR trust is different from that in the Vanguard fund. Such historical differences can lead to differences in realized gains and after-tax returns.

Further Issues:

In future work, we hope to explore many issues associated with exchange traded funds. We hope to move beyond our analysis of the SPDR trust to consider the performance of other exchange traded funds. In December 2008, there were 732 exchange traded funds, compared with 79 one year earlier. Many of the new funds have specific investment objectives, such as holding stocks in a given sector or nation, and they also have substantially higher expense ratios than the SPDR trust. The mutual funds that these ETFs compete with are also likely to have substantially higher expenses than the Vanguard Index 500 fund. A second issue involves studying the attraction of ETFs and traditional open-end equity mutual funds for taxable investors with assets in both a taxable and a tax-deferred account. The low rate of taxable distributions on ETFs, and their liquidity, may make them more attractive for equity investments outside tax-deferred accounts than for investments in IRAs or 401(k) s. The attributes of traditional equity mutual funds may make them more attractive for retirement account investors.

Finally, we plan to consider how ETFs feature in the expanding mix of products offered by the mutual fund industry. ETFs may be part of an emerging trend toward segmentation of the mutual fund marketplace, with investors who wish to trade frequently segregated into different products than low-turnover investors. The former group may eventually hold funds with substantial expense ratios that cover the account management fees associated with high-turnover investors, while the low-turnover, or high account value, investors may be able to invest through funds with much lower costs. ETFs may attract investors who value the ability to trade



frequently, thus reducing the turnover rate for the investors who continue to invest in traditional open end equity funds.

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PRODUCTION OF DIESEL - LIKE FUEL OBTAINED FROM WASTE LUBRICATION OIL AND ITS PHYSICOCHEMICAL PROPERTIES

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Introduction:

Diesel is one of the petroleum products, which is used in all kinds of compression ignition engine as a fuel. It is produced from crude oil by various refining processes, which come out from the oil wells. It assumes that the source of crude oil would be ruined in future, as the demand of petroleum products is growing at faster rate day by day. Alternative energy resources are becoming more imperative because there is an increasing demand for clean transport fuels. Many researchers are concentrating on developing alternative and renewable sources of liquid fuels, which are new energy resources to replace commercial petroleum products for the future. Large and increasing volumes of used lubricating oil are produced each year that, after use, are considered hazardous wastes. This is so because waste oils typically consist of a mixture of underrated base oil and additives which high concentrations of metals, varnish, gums, and other asphaltic compounds coming from overlay on bearing surface sand degradation of the fresh lubricant component. The used oil is disposed in many ways including incineration, land spreading, and dumping on the ground and into water. All used oil eventually creates environmental hazards. Combustion and incineration of wastes is often difficult and cleaning of flue gases is complex and expensive because they



contain important quantities of contaminants. As a solution to this problem of disposal, waste lubricating oil could be collected and processed via a re-refining process to become "re-refined lubricating oil" with an equivalent quality to new lubricating oil or via direct upgrade from thermal cracking or catalytic cracking. In thermal cracking, hydrocarbons with higher molecular weight in lubricating oils can be transformed to lighter hydrocarbon products by thermolysis at higher temperature, which is accompanied with the formation of coke; large amounts of gas and naphtha with lower quality are produced due to over cracking. Reported a higher yield in volatile gases when the temperature was increased (35 to 60% from 873K to 973K). Methane light olefins, and benzene, toluene, and (BTX) were the most abundant byproducts studied batch low temperature paralysis of waste oils (693-713K) with a high holding time of the residue in order to elucidate the cracking reaction kinetics of the paraffin's at low temperature to obtain naphtha investigated the paralysis of a mixture of waste ship lubricating oil (WSLO) and waste fishing rope (WFR) in the temperature range of 573 to 723K; the fraction of light hydrocarbons below C15 in the paralyzed oil of the WSLO/ WFR mixture was higher than that of the WSLO or WFR alone. These lubricating oils are long chain hydrocarbon molecules, which can be converted to light hydrocarbons, by using many types of catalysts. It was determined to be most efficient in the oil cracking processes of organic liquid fuel production that give mainly aromatic hydrocarbons. In addition, sulfated zirconium, as a member of the sulfated metal oxide as a solid super acid catalyst for the isomerization of n-butane. It has also been shown to active in several other reactions, including cracking, alkylation, and etherification. Sulfated zirconium uses a stronger acid catalyst and is more reactive as a cracking catalyst for long-chain hydrocarbons, under mild conditions. It has been termed as a strong solid acid and is effective for hydro-isomerization and hydro cracking of long-chain paraffin's. The higher acidity of sulfated zirconium shows an increase in the frequency of hydride abstractions, which can be derived from the cracking mechanism. In this study, sulfated zirconium was applied to



the catalytic cracking of used lubricating oil to become liquid fuel, and the effects of temperature, initial pressure, reaction time, and kinetic model were investigated.

Production of diesel-like fuel from waste oils such as industrial and engine waste oils, wood paraffin oils, fresh and waste fats and vegetable oils is an excellent way for producing alternative fuel sources. Industrial and engine waste oils, wood paraffin oils, fresh and waste fats and vegetable oils have been proposed as paraffin raw material to produce gasoline and diesel-like fuels. There is plenty of the waste engine oil in the world. Abundant amounts of used engine lubricating oils are produced worldwide every year. Annually, about 45 million metric tons are produced, and around 55% of the production becomes waste. Less than 45% of available waste oil was collected worldwide in 1995, and the remaining of 55% was either misused or discarded by the end user in the environment. It should be collected and re-used in order to decrease detrain

The diesel of heavy motor vehicle (like trucks, buses), stationary power plants big industrial unit and ships mostly operate on diesel cycle or constant volume cycle. It was introduced by Rudolph Diesel in 1897. Diesel is one of the petroleum products, which is used in all kinds of compression ignition engine as a fuel. The used engine oils can be used in engine as engine oil after purifying engine oils can be used in engine as engine oil after purifying it. Production of diesel fuel from used engine oil is involving should be collected and re-used in order to decrease detrimental effects on environment, and underground and surface waters, since it pollutes the atmospheric air as a result of burning, and has negative effects on living organisms, underground and surface waters when it is discharged into soil or water. Conversion of the waste engine oils into diesel like fuel by using pyrolytic distillation, and by utilization of the product as a diesel fuel has positive effects on environment and atmospheric air, and also has economical value

Methodology

In this study is aim that to obtain diesel-like fuel from waste lubrication engine oils by method are using pyrolytic distillation, which can

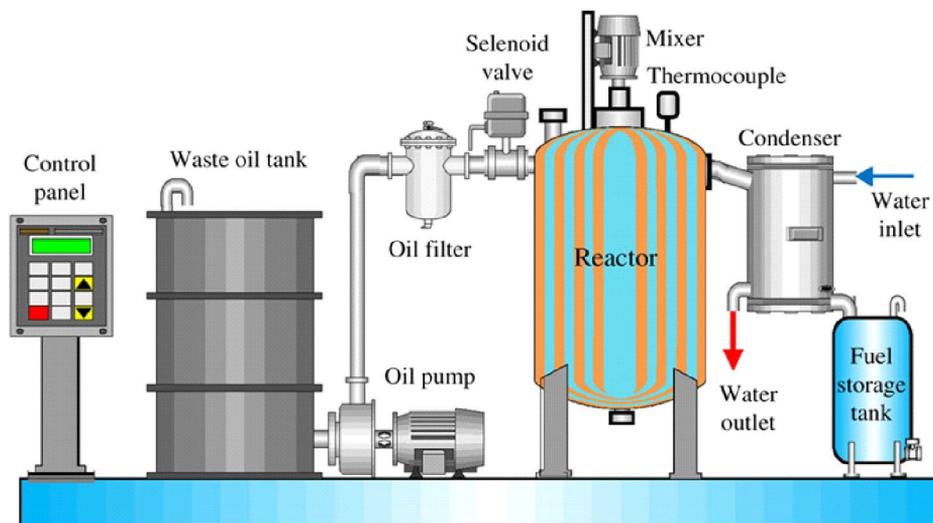


be used in diesel engines. With this aim in my mind, in this method (WLO) waste engine oil is collected in a tank, and it is purified from contaminants such as dust, heavy carbon, soot, metal particles, gum-type materials and other impurities by the filtering in the process prepared to the earlier. To investigate effects of additives known as sodium carbonate (NaCO_3), zeolit and lime (CaO) on density, viscosity, flash point, sulfur content, heating value and distillation temperature, the purified oil samples are blended (mix) separately with additives having mass basis. The mixed samples are exposed to pyrolitic distillation process to produce fuels to be used in engines. Thermal and physical properties of the produced fuels such as density, flash point, viscosity, sulfur content, heating value and distillation temperatures are examined. From these results, the CaO with a ratio of the highest effect on decreasing of sulfur content of the waste engine oil and on acquiring the most suitable distillation temperatures close to values of a diesel fuel. Diesel-like fuel (DLF) is obtained as 60% of the waste lubrication engine oil.

Experimental setup: the purified and pyrolitic distillation system was designed and manufactured in industry to purify waste lubricant engine oil (WLO) from contaminants and to produce Diesel-Like Fuel (DLF). A schematic diagram is shown in Fig. The system consists mainly of the parts are as waste oil tank, pump and filters, reactor, mixer, condenser and control unit. Functions of all the system components are briefly explained in this section.

The waste oil tank was used to collect Waste Lubricants Oil having several hazardous materials within it. The Waste Lubricants Oil (WLO) was pumped from the tank to the reactor, and then it was flowed through the filters having 20 μm mesh size. While the Waste Lubricants Oil (WLO) was flowed through the filters, it was purified from the oil from small dust, carbon soot, small metal particles and some gum type and other materials. The most important part of the system is the reactor in which thermal treatment of the Waste Lubricants Oil (WLO) was carried out. It has a cylindrical shape with dimensions of 30 cm in diameter and 40 cm in height. It has a capacity that will be able to produce 20 l of fuel. It is

assumed that such a volume will suffice for all measurements and tests, since tests for thermal and physical characteristics, distillation of the produced fuel, and also several engine performance tests may be required for the same produced fuel. The reactor was isolated with glass wool having a thickness of 5 cm to minimize heat loss from the reactor. Electrical heaters with a total heating capacity of 5 kW were used to heat the oil and were placed around the reactor container. The electrical heaters have special resistance heaters which can heat the waste oil sample up to 600 °C. The heating rate can be controlled by the control unit adjusting voltage to keep temperature of the oil at desired levels. Temperature measurement was performed by means of thermocouple. It was placed in locations where temperature measurement was needed.



Purified and distillation system.

Physicochemical properties

Diesel fuel is the light oil and is made from crude oil by the same distillation process, which produces gasoline. Diesel fuel is the fractional distillate of petroleum fuel oil, but in recent times, it has been discovered that it can be made from alternative sources such as vegetable oil and alcohol derivatives. and there are different properties like compression pressure, flash point, calorific value, latent heat of vaporization, boiling point, purity



,volatility ,gum content, sulphur content , antiknock quality additives .additive is (materials) Compounds added to diesel fuels to improve performance, such as cetane number improvers, metal deactivators, corrosion inhibitors, antioxidants, rust inhibitors , and dispersants.

Viscosity:- viscosity is a measure of the resistance to flow or internal friction of an oil .viscosity is a three type high medium .low and it is the important properties of engine lubrication oil. it is used to grad of lubricants. Oil used on lighter oil of the automobile vehicle. The viscosity is measured by viscosity meter. And unit is viscosity second say bolts.

Flash point :- the flash point has been as the lowest temperature at which the librating oil will flash when small flame is passed across its surface . when the oil is heated .it reaches a temperature which ,if a small flame is brought near it , a flash spreads across the oil .it happens due to the volatilization of the light particles and the oil . the flash point of the oil should be sufficiently high so as to avoid flashing of oil vapors at the tem occurring in common use.

Fire point :-if the oil is heated further after the fire point has been reached , the lowest tem at which the oil burn continuously is a called the fire point . the fire point also must be high in a lubrication oil ,so that the oil does not burn in service .

Cloud point:-the oil change from liquid state to a plastic or solid state. When subjected to low temperature. In some cases the oil start solidifying which makes it to appear cloudily. The tem at which this place is called the cloud point.

Pour Point :- it is t he lowest temperature at which the lubricating oil will pour . the pour point of an oil is indication of its ability to move at low temperature.

Oiliness:-it is the characteristics properties of oil. An oil is said to be oil when it is has oiliness .this prosperity is highly desirable in helping the oil to adhere to the cylinder walls.



color:-color of a oil is not of so much important for its properties its property as a test for checking the uniformly of any given grads or brand of oil.

Physical stability: - oil must be stable physical at the lower and highest temperatures between which the oil is to be used. At lowest tem there should not be any separation of solid, and at the highest tem it should not vaporize beyond a certain limit.

Chemical stability :-a lubrication oil should also be stable chemically .there should not be any faulty for oxide formation ,the oxidation product being sticky ,clog the working part .case the faulty piston rings and valve action the oil should also decompose at high tem to form carbon ,which makes spark plugs and valve to function.

Specific gravity: - specific gravity is a measure of the density of an oil . it is determine by a hydrometers which floats in the oil. And the gravity is read on the scale of the hydrometer at surface of the oil.

Cleanliness: - oil must be clean. It should not contain dust and dirt particles these importees may be either be filtered out Or removed With the change of oil at periodic intervals, further the oil must be contain agent called detergents which remove the importers from the engine parts during oil circulation.

Compression pressure:-the fuel should have a high compression pressure limit without detonation to deliver more power.

Latent heat of vaporization;- a high latent heat of vaporization of fuel causes the charge to be cooled and there for becomes more dense, as the fuel mixes the air . under this condition the chare passing into the cylinder of the engine contains more energy then in the absences of that cooling . but a high a latent heat of vaporization may causes freezing of atmospheric moisture in carburetor ,which can severely affect the running of the engine .

Calorific value :- the greater the thermal energy of a fuel per unit volume and weight .the smaller is the quantity required to be burnt , high density fuel content the fuel most energy and they have the lowest volatility .



Boiling point :- the fuel must constitute a mixture of volatile liquid ,called fractions, each having a different boiling point .this allows the engine to start easily on the more volatile fraction coldest winter condition ,also in very hot climatic condition ,it can still start and run satisfactory on the heavier fractions at expected higher temperature having without any problem due to the formation of bubbles of vapors .with In the fuel system by the lighter in the heavier fraction .good volatility in the middle help to reduce the duration of the use of the choke after start up from cold . Too high o proportion of heavy hydrocarbons can cause this heavy fraction to enter the cylinder in mainly liquid form .washing the lubricant from the cylinder walls and diluting it in the sump.

Purity ; - the presence of substance other then hydrocarbons in the fuel may cause deposit of ash or corrosive substance during burning or corrosion of components in the fuel system.

Volatility;- it is the tendency of the motor fuel to change from the liquid state to the vapor state .ease of starting in cold conditions depends mainly on the volatility of the fuel. The more volatile the fuel .the more uniform is the distribution of the fuel in the cylinder and smoother the running of the engine.

Gum content ; - hydrocarbons and impurities in the fuel have a tendency to oxidize and form viscous liquids and solids causing the formation of gum. lacquering is the phenomenon of the formation of varnish appearing as the residue left by the gum when exposed to high temperature .a fuel with high gum content causes operating difficulties such as carbon deposit on sticky valves and piston rings ,gum deposit in the manifold .clogging of carburetor and lacquering of the cylinder ,valve stem and piston .

sulphur contents ; -the presence of and its sulphur compounds in the fuel damages manifold d fuel pumps . During engine operation sulphur unites with oxygen to form to form sulphur dioxide, which in the presence of water forms a mist of injurious sulphurous action. Sulphur content of less than 1% are acceptable.



Anti knock Quality:-the fuel should have good antiknock quality. By adding a little quality of tetraethyl lead.

Cetane Number: - it is measurement of the combustion quality of diesel fuel during compression ignition. It is requiring depends on engine design and size, nature of the speed and load variation, starting and atmospheric condition.

Additive:- additive is (materials) Compounds added to diesel fuels to improve performance, such as cetane number improvers, metal deactivators, corrosion inhibitors, antioxidants, rust inhibitors, and dispersants.

Conclusion

In this work, the method of production of diesel-like fuel (DLF) produced from waste engine oil and it's various properties has been studied. In order to carry out the investigation, a fuel named as DLF was produced by using pyrolitic distillation method. Its characteristics such as density, viscosity, flash points, heating value, water and sulfur amount, and distillation tests of the DLF are discussed. This study is useful to information of the various properties of fuel which can be produced from waste engine oil. Hence, an alternative fuel may be produced for the engine.

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REPRODUCTIVE LIFE OF MALAS IN THE SELECT MANDALS OF CHITTOOR DISTRICT, ANDHRA PRADESH

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1. INTRODUCTION

Bio-demography of a population is meant to cover all demographic characters of a population and relate these aspects with neighbouring populations taking into account of environment (ecology), biology and culture. The most quoted definition is by Hauser and Duncan (1959) which states that "demography is the study of the size, territorial distribution, and composition of population, changes therein, and the components of such changes, which may be identified as fertility, mortality, territorial movement (migration) and social mobility (change of status)". Demographic studies are concerned with the human population, its growth, decline and movement, it also includes the study of the variables which bring changes as well as get affected by any changes in the population. The determinants and consequences that are closely related with population studies are economic, social political, geographical, biological genetic, ecological and anthropological. The study of human population and the various trends has shown the twin objectives of lowering mortality and fertility. On the one hand, lower mortality is a universally desired and accepted social goal and on the other hand lower fertility and the means for achieving it have long been subjects of religious controversy and of ethical, social and individual debate. Stolnitz (1964) is of the view that downward trends in fertility require a shift in attitudes from the traditional fatalism, typical of peasant societies, to a positive modern society. The lower mortality can be achieved by planned public health, sanitation, mass medical programmes, spread of education and improved economic conditions.



2. OBJECTIVES

The Major objectives of the study include

1. To construct age-sex structure of the populations and study status components and differences, such as, sex ratios, aging index, dependency ratio and the overall age structure model of two populations.
2. To decipher the nature of mating patterns in terms of consanguineous and non-consanguineous marriages mean matrimonial distance (MMD) among the two populations and account the differences for population development.
3. To measure important fertility and mortality rates such as Aging Index and Dependency Ratio, age at marriage, menarch, menopause etc. in both populations and compare the levels and differences to assess population development.
4. To determine the family planning practice in both populations and find the differences to relate to population development.

3. NEED FOR THE STUDY

Research in demography and fertility has attracted the attention of a number of scientists in recent decades. An attempt is made here to assess the relation of different demographic characteristics on the fertility performance of human populations. The demographic variables considered for the purpose are, age at menarche, age at marriage, type of marriage and type of family.

4 STUDY AREA

Malas are a big and extensive population which require a team work to cover the entire population and is thus beyond the scope of the present study. The total population of Malas in Chittoor district is shown in the Table 1.



Table 1
Population of Malas in Chittoor District

| Year | Males | Females | Total population |
|------|----------|----------|------------------|
| 1971 | 2,03,204 | 1,95,935 | 3,99,139 |
| 1981 | 2,42,910 | 2,35,966 | 4,78,876 |
| 1991 | 3,05,199 | 2,94,317 | 5,99,516 |
| 2001 | 3,53,441 | 3,48,882 | 7,02,323 |

The present study aims at finding out the influence of socio-economic status of the population in its biological well-being. Thus, this problem has been taken up and studied in two sub-groups of larger Mala population namely, Pokanati and Rampala, who are socio-economically contrast populations and found suitable for the present study. The spatial distribution of these sub-groups of Malas, has therefore, been studied in three selected Tehsils of Chittoor district, namely, Chandragiri, Madanapalli and Chittoor.

5 METHODOLOGY

Measures of Age-Sex Composition

The following are the indices calculated to understand the demographic structures of studied populations.

$$(i) \quad \text{Dependency ratio} = \frac{\text{age-groups } 0-14 + 60 + \text{above}}{\text{Individuals (Male + Female) between Age groups } 15-59}} \times 100$$

$$(ii) \quad \text{Index of Aging} = \frac{\text{Population aged } 60 + \text{years}}{\text{Population aged } 0 - 14 \text{ years}} \times 100$$

6. BIO-EVENTS OF REPRODUCTIVE LIFE

The fertility performance of females is directly influenced by their age at entry and exit from the reproductive life. Effective reproductive life begins, as a matter of fact, after menarche and after sterility gap and not from the age of marriage. So, the age at menarche, the age at marriage,



incidence of divorce, separation and remarriage, age at menopause, establish the span of reproductive life. Since women are the base subjects for fertility, the male reproductive life although associated is not counted generally.

6.1 Aging Index and Dependency Ratio

The dynamics of a population can better be known by studying the kind of members available in that particular age structure of the population. The members belonging to 0-14 years and members after 60+ years of age are considered as dependents or consumers. The other members in the age structure between 15 and 59 years are known as producers or bearers of the population. If dependents are more than the producers is said to be an aged and dependent population. In such case the population is said to be at stress. On the other hand, if there are more producers to the consumers, then the population is said to be young and positive in its growth.

The aging of a population (i.e., whether the population is "young" or "old") can be described by the ratio of the old people aged 60+ years to the young population aged 0-14 years. Stockwell (1972) defines the index of Aging as "the numbers of persons aged 65 and over per 100 children under 15 years of age". In the present study, 60 years, has been taken as border line for post reproductive age ignoring the fertility in males beyond this age in order to avoid statistical complications. This is known as index of aging. This index, in general, is found to be low when the proportion of population under 15+ years is high and vice-versa. In developed countries with limited or low fertility the index of aging is usually high. Whereas, in developing countries, like India, where heterogeneous populations have higher fertility, and the life span is limited, the index of aging is usually low. The aging index for both Mala populations Pokanati and Rampalas is given in table 2. The aging index for Pokanati Malas is worked out as 36.36 while it is 16.99 for Rampala Malas. The z-value (0.7874) for the parameter for the two populations indicates 5% level of significance.



As has been stated earlier dependency ratio measures the impact of age composition on the livelihood activity of a population. It is estimated with reference to the proportion of young (0-14 years), and old (60+ years) in the total population, who are presumably economically inactive and proportion of a population at productive ages (15-59 years). In other words, it attempts to describe the burden of dependency that is supported by potential active population. The dependency ratio for the present populations is worked out as 50.70 for the Pokanati Mala population and 67.24 for Rampala Mala population. This means that the producers are more in number than consumers for Pokanati population and consumers are relatively more for Rampala population. The z-value (0.0329) for the character for the two populations indicates 5% level of significance. The analyses of aging index and dependency ratio bring out the following significant features in the respective population. According to aging index the Pokanati population is said to be old while the Rampala is young population. Firstly, it is evident that the Pokanati population contains less number of population in below 14 years and more number in 60+ years of the population than the Rampala. Secondly, the consumers are more in Rampala than among the Pokanati. This makes the difference of the two populations in terms of development index and ratio.



Table 2
Aging Index And Dependency Ratio For Pokanati And Rampala Mala
Populations

*Significant results at 5% level.

| Sex | Below 14 Years | | Between 15-59 Years | | 60+ Years and above | | Aging Index | | Dependency Ratio | | | | | |
|------------------|----------------|--------|---------------------|--------|---------------------|--------|-------------|--------|------------------|---------|----------|---------|---------|---------|
| | Pokanati | | Rampala | | Pokanati | | Rampala | | Pokanati | | Rampala | | | |
| | No. | % | No. | % | No. | % | No. | % | Pokanati | Rampala | Pokanati | Rampala | | |
| Males | 451 | 53.25 | 560 | 49.56 | 1141 | 50.09 | 995 | 50.61 | 143 | 46.43 | 96 | 50.00 | - | - |
| Females | 396 | 46.75 | 570 | 50.44 | 1137 | 49.91 | 971 | 49.39 | 165 | 53.57 | 96 | 50.00 | - | - |
| Total Population | 849 | 100.00 | 1130 | 100.00 | 2278 | 100.00 | 1966 | 100.00 | 308 | 100.00 | 192 | 100.00 | 36.36 | 16.99 |
| | | | | | | | | | | | | | z-value | z-value |
| | | | | | | | | | | | | | 0.7874* | 0.0329* |



6.2 Age at Menarche

Menarche is a biological phenomenon representing the symbolic start of womanhood. The onset of menarche depends on various life conditions such as, better food, nutrition and health. Populations deprived of these life conditions will have late onset of menarche. In others, an early onset is noticed (Tanner, 1961; Barua, 1992; Bhasin and Bhasin, 1993; Choudhury et al., 1994; Kapoor, 1996; and Elizibeth et al., 2000). Menarche constitutes an important aspect of population dynamics. The age at menarche and the percentage distribution of it is calculated for the present series of populations. The mean age at menarche for the Pokanati Mala women is 13.22 ± 1.22 and for Rampala Mala women it is 14.18 ± 1.58 . About 65% of women of both populations have their menarche in the years 13+ and 14+ (table 3 and fig.1 and 2). The t-value for the said parameter is 13.170 which gives a P-value that indicates 1% level of statistical significance. Comparing the mean age at menarche of the present Mala populations with some Andhra populations and also with other Indian populations, the mean menarche age of Mala population come in agreement with some general tropical populations and also with some forward castes of the Andhra Pradesh (table 4).

Table 3
Age at Menarche in Mala Women of Pokanati And Rampala

| Age at Menarche | Population | | Population | | Mean \pm S.D. | |
|-----------------|------------|---------------|------------|---------------|---------------------------------|------------------|
| | Pokanati | | Rampala | | Pokanati | Rampala |
| | No. | % | No. | % | | |
| 11+ | 56 | 7.47 | 25 | 3.33 | | |
| 12+ | 161 | 21.47 | 89 | 11.87 | | |
| 13+ | 294 | 39.20 | 195 | 26.00 | | |
| 14+ | 142 | 18.92 | 263 | 35.07 | 13.22 ± 1.22 | 14.18 ± 1.58 |
| 15+ | 62 | 8.27 | 137 | 18.27 | t- value 13.170 * P-value | |
| 16+ | 30 | 4.00 | 38 | 5.07 | | |
| 17+ | 5 | 0.67 | 3 | 0.40 | | |
| Total | 750 | 100.00 | 750 | 100.00 | 0.0000 | |

* Indicates 1% level of significant

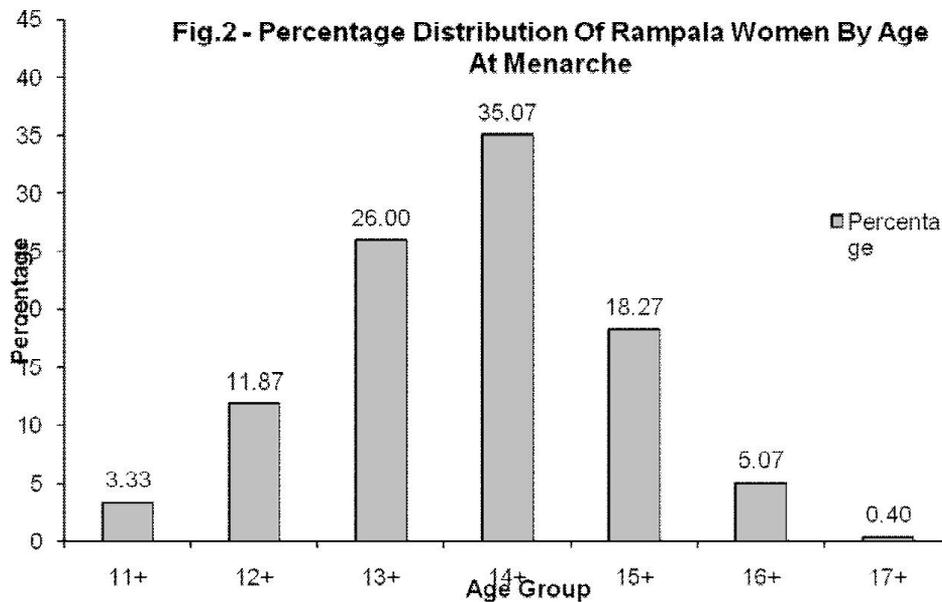
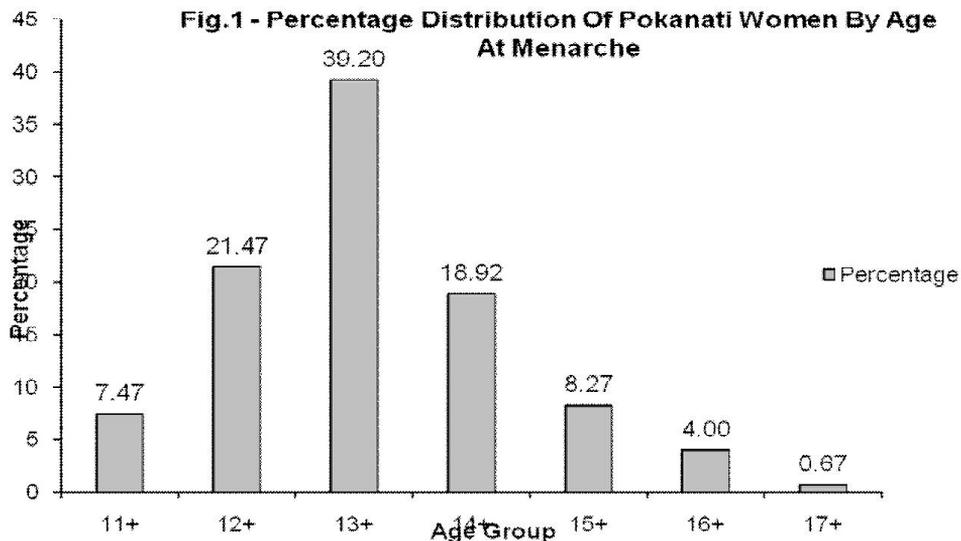




Table 4 Mean Age At Menarche In Some Andhra Populations

| Sl. No. | Population | Sample Size | Age at Menarche Mean \pm S.E | Source |
|---------|-----------------|-------------|--------------------------------|-----------------------------|
| 1. | Brahmin | 389 | 14.63 \pm 0.08 | Chakravarthi & Renuka, 1970 |
| 2. | Kamma - I | 147 | 14.50 \pm 0.32 | Chakravarthi & Renuka, 1970 |
| 3. | Konda Reddi* | 152 | 13.85 \pm 0.08 | Veerrju, 1973 |
| 4. | Chenchu - I* | 201 | 14.30 \pm 0.04 | Ramana Rao & Aruna, 1976 |
| 5. | Baliya - I | 1138 | 13.86 \pm 0.78 | Gunasundaramma&Reddy, 1977 |
| 6. | Padmasali - I | 441 | 13.41 \pm 0.07 | Balagopa, 1977 |
| 7. | Pedakanti Reddi | 420 | 13.11 \pm 0.06 | Rajasekhar Reddy, 1977 |
| 8. | Rayalam Reddy | 98 | 13.95 \pm 0.11 | Ramana Reddi, 1977 |
| 9. | Padma Sali - II | 387 | 13.45 \pm 0.08 | Srinivasa Reddy, 1977 |
| 10. | Kamma - II | 395 | 14.35 \pm 0.09 | Padmanabha Naidu, 1977 |
| 11. | Baliya - II | 207 | 12.78 \pm 0.09 | Purushotham, 1978 |
| 12. | Vysya | 400 | 13.74 \pm 0.07 | Bhagyalakshmi, 1978 |
| 13. | Chenchu-II* | 222 | 13.92 \pm 0.06 | Sirajuddin, 1978 |
| 14. | Sugali - I* | 262 | 12.85 \pm 0.07 | Purusyhotham, 1978 |
| 15. | Mala | 1108 | 13.04 \pm 0.02 | Chengal Reddy, 1979 |
| 16. | Palli Reddi | 712 | 13.15 \pm 0.04 | Shubhashini, 1981 |
| 17. | Yerukala* | 444 | 12.95 \pm 0.06 | Narahari, 1982 |
| 18. | Uppara | 200 | 13.97 \pm 0.04 | Satyanarayana, 1983 |
| 19. | Sugali - II * | 205 | 13.50 \pm 0.06 | Panduranga Swami, 1983 |
| 20. | Madiga | 1368 | 12.88 \pm 0.03 | Rajasekhar Reddy, 1984 |
| 21. | Bestha | 196 | 14.00 \pm 0.03 | Surendranath Reddy, 1985 |



| | | | | |
|-----|--------------------|-----|------------------|--------------------------|
| 22. | Washerman | 554 | 13.12 \pm 0.07 | Subhashini, 1986 |
| 23. | Motati Reddi | 152 | 12.98 \pm 0.37 | Nabhyvani, 1987 |
| 24. | Pokanati Reddi | 147 | 13.03 \pm 0.09 | Manjuvani, 1987 |
| 25. | Pattapu | 269 | 13.54 \pm 0.04 | Manohar, 1989 |
| 26. | Kaikala | 500 | 13.73 \pm 0.06 | Sandhya Rani, 1990 |
| 27. | Reddi | 800 | 13.10 \pm 0.06 | Surendranath Reddi, 1993 |
| 28. | Yadava | 300 | 13.44 \pm 0.06 | Gopal, 1996 |
| 29. | Thoti * | 250 | 13.06 \pm 0.05 | Elizabeth et, al. 2000 |
| 30. | Reddy | 500 | 13.01 \pm 0.06 | Sudarsan Reddy, 2002 |
| 31. | Vodde | 500 | 14.10 \pm 0.06 | Sudarsan Reddy, 2002 |
| 32. | Mala : Pokanati | 750 | 13.22 \pm 0.14 | Present Study (2003) |
| 33. | Mala : Rampala | 750 | 14.18 \pm 0.07 | Present Study (2003) |

Growth is also an effective agent of socio-economic status, education, urbanization and also, status of women etc. (Srikantan, 1977; Zacharia, 1981; Caldwell et al., 1983; Bhasin and Bhasin, 1993 and 95; Kapoor, 1996 and Elizabeth et al., 2000).

6.3 Age at Marriage

Marriage, is a socially recognised institution, which grants a couple the liberties to cohabit and share the economic, reproductive and child rearing functions of a family. The mean age at marriage indicates the average time of family formation. Generally, though not universally, it is only within the confines of a marriage that a woman is initiated into child birth in most societies. Therefore, age at marriage is a very important demographic and health characteristic. Age at marriage itself, a factor for influencing population

Further, age at marriage has a bearing on fertility. In a country like India, where marriage customs are strictly observed, are believed to affect fertility further. The normal reproductive period of 15 to 45 years of a



woman does not determine her fertility but depends on her age at marriage and duration of married life in the reproductive span. Late marriage would supposedly contribute at least, moderately to decreased fertility. The age at marriage and the percentage distribution of it is presented in table 5 and fig.3 and 4 for both Mala populations, Pokanati and Rampala. The mean age at marriage for males among Pokanati Mala is 24.39 and for females it is 20.98. In case of Rampala Malas, the mean age at marriage for male is 23.24 and for females it is 18.57 years. Thus, both populations, the mean marriage is high for both males and females. In case of males most of them get married (70%) during 21 and 25 years and in case of females, they get married between the ages of 18 and 23 years (65%). The difference of age at marriage for Pokanati and Rampala males and females is statistically significant (t-values : 16.470 for males and 18.519 for females). Thus, both populations differ from the character significantly. Comparing the mean age at marriage of the present Mala populations with some Andhra populations and also with other Indian populations the mean marriage age of the present study come in agreement with some of the forward caste populations of Andhra Pradesh and also with other general populations of India (table 6).

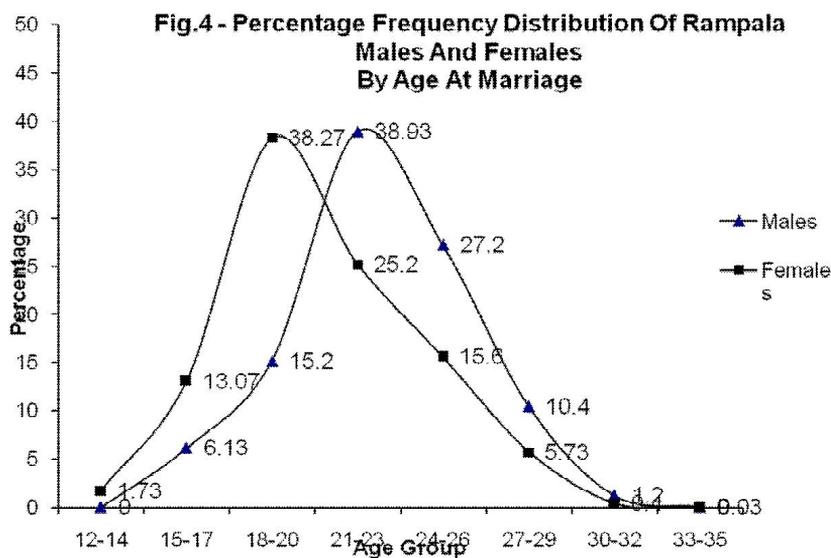
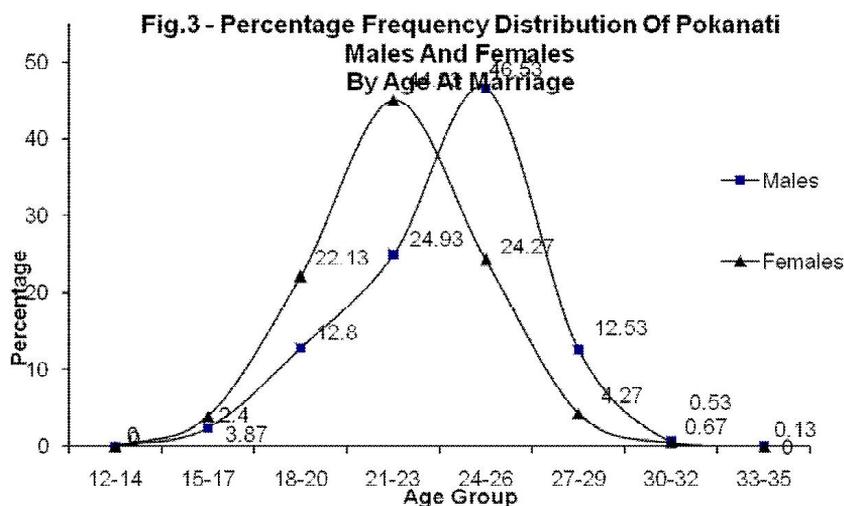
Table 5
Age at Marriage in Mala Males and Females of Pokanati And Rampala

| AGE GROUP (in Years) | MALES | | | | FEMALES | | | |
|-------------------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|
| | POKANATI | | RAMPALA | | POKANATI | | RAMPALA | |
| | No. | % | No. | % | No. | % | No. | % |
| 12-14 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 13 | 1.73 |
| 15-17 | 18 | 2.40 | 46 | 6.13 | 29 | 3.87 | 98 | 13.07 |
| 18-20 | 96 | 12.80 | 114 | 15.20 | 166 | 22.13 | 287 | 38.27 |
| 21-23 | 187 | 24.93 | 292 | 38.93 | 337 | 44.93 | 189 | 25.20 |
| 24-26 | 349 | 46.53 | 204 | 27.20 | 182 | 24.27 | 117 | 15.60 |
| 27-29 | 94 | 12.53 | 78 | 10.40 | 32 | 4.27 | 43 | 5.73 |
| 30-32 | 5 | 0.67 | 9 | 1.20 | 4 | 0.53 | 3 | 0.40 |
| 33-35 | 1 | 0.13 | 7 | 0.03 | 0 | 0.00 | 0 | - |
| Total | 750 | 100.00 | 750 | 100.00 | 750 | 100.00 | 750 | 100.00 |



| | | Mean \pm S.E. | S.D. \pm S.E. | t-value | P-value |
|-----------------------------|-------------|------------------|-----------------|---------|---------|
| Age at Marriage for Males | 1. Pokanati | 24.39 \pm 0.12 | 3.03 \pm 0.08 | 16.470* | 0.0000 |
| | 2. Rampala | 23.24 \pm 0.14 | 3.56 \pm 0.09 | | |
| Age at Marriage for Females | 1. Pokanati | 20.98 \pm 0.17 | 2.78 \pm 0.07 | 18.519* | 0.0000 |
| | 2. Rampala | 18.57 \pm 0.13 | 3.23 \pm 0.09 | | |

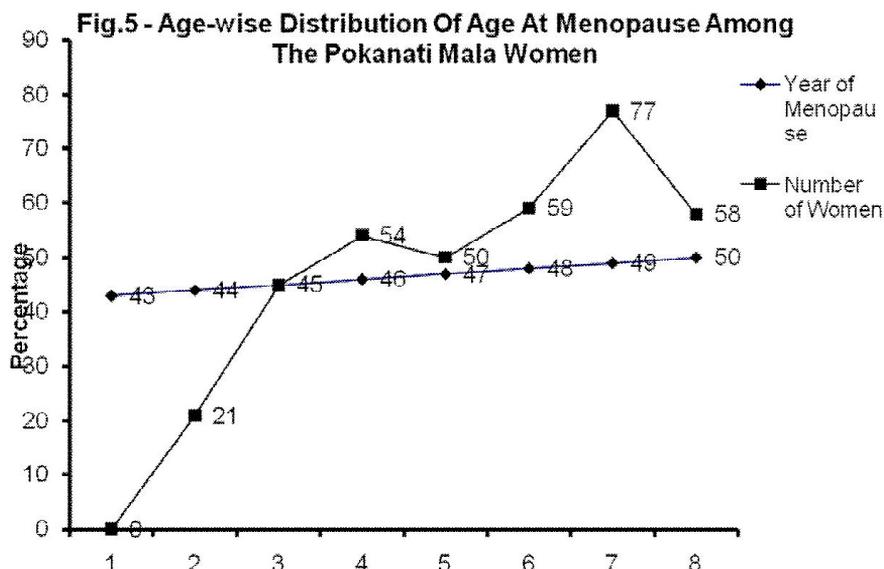
* Significant at 1% level





6.4 Age at Menopause

The menopause is a critical biological phase in women's life, during which ovulation and menstruation are arrested and consequently the reproductive function ceases. Hence, pregnancy is no longer possible. It is a very complex process of changes that occur in the biological structure of women, accompanied by a variety of psychological events. The age at menopause has been reported to vary amongst different population (Trelor, 1974; Agarwal, 1977; and Mastana, 1996), but for demographic analysis, the mean age is often taken as 44 years in India and in developed countries it is 49-50 years. Variety of factors like race, heredity, socio-economic level, parity, nutrition and obesity are known to effect the age at menopause. Therefore, not many studies on Indian populations for age at Menopause, as compared to works on menarcheal age (Mastana, 1996). The mean age at menopause and its percentage distribution of the samples is presented in table 7 and fig.5 and 6. The mean age at menopause for the Pokanati Mala women is 49.13 and for the Rampala Mala women, it is 47.06 years. However, majority of women (50%) of both populations will have the menopause between the ages of 45 and 47 years.



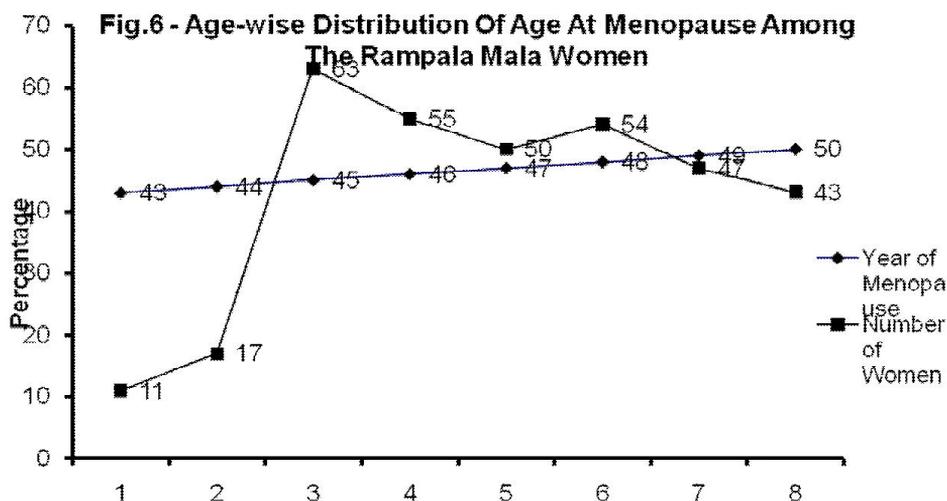


Table 6
Mean Age at Marriage in Some Indian Populations

| Sl. No. | Population | Males | | Females | | Source |
|---------|-----------------|-------|------------|---------|------------|---------------------------|
| | | No. | Mean±S.E. | No. | Mean±S.E. | |
| 1. | Padmasali - I | 441 | 23.80±1.11 | 441 | 14.83±0.12 | Balagopal, 1977 |
| 2. | Padma Sali - II | 362 | 21.42±0.15 | 387 | 14.90±0.12 | Sreenivasa Reddy, 1977 |
| 3. | Reddi | 407 | 26.31±0.24 | 407 | 16.23±0.19 | Chandrasekhar Reddy, 1977 |
| 4. | Kamma | 366 | 26.86±0.27 | 395 | 16.51±0.13 | Padmanabha Naidu, 1977 |
| 5. | Panta Kapu | 102 | 24.47±0.56 | 102 | 17.63±0.23 | Siva Kumar Reddy, 1977 |
| 6. | Sugali - I * | 262 | 21.24±0.22 | 262 | 13.05±0.14 | Purushotham, 1978 |
| 7. | Vysya | 400 | 23.80±0.22 | 400 | 16.58±0.18 | Bhagyalakshmi, 1978 |
| 8. | Mala | 747 | 23.66±0.15 | 866 | 13.55±0.10 | Chengal Reddi, 1979 |
| 9. | Baliya | 990 | 23.48±0.12 | 1138 | 16.18±0.08 | Gunasundaramma, 1980 |
| 10. | Palli Reddi | 712 | 23.28±0.05 | 712 | 15.40±0.04 | Subhashini, 1981 |
| 11. | Kuruba | 251 | 23.32±0.23 | 255 | 17.58±0.13 | Venkata Ramana, 1982 |
| 12. | Yerukala* | 427 | 20.11±0.13 | 477 | 14.77±0.10 | Narahari, 1982 |
| 13. | Uppara | 200 | 19.70±0.12 | 200 | 15.68±0.12 | Satyanarayana, 1983 |
| 14. | Sugali - II* | 205 | 19.56±0.18 | 205 | 15.23±0.18 | Panduranga Swami, 1983 |
| 15. | Madiga | 1368 | 20.83±0.06 | 1368 | 13.32±0.06 | Rajasekhar Reddy, 1984 |
| 16. | Bestha | 196 | 25.97±1.85 | 196 | 18.00±0.09 | Surendranath Reddy, 1985 |
| 17. | Washerman | 554 | 21.95±0.12 | 554 | 15.69±0.11 | Subhashini, 1986 |
| 18. | Motati Reddi | 152 | 23.12±0.22 | 152 | 17.73±0.27 | Manjuvani, 1987 |
| 19. | Pattapu | 180 | 21.66±0.20 | 210 | 16.31±0.09 | Manohar, 1989 |
| 20. | Reddi | 800 | 24.26±0.11 | 800 | 17.88±0.11 | Surendranatha Reddy, 1993 |
| 21. | Yadava | 300 | 22.84±0.20 | 300 | 17.00±0.18 | Gopal, 1996 |
| 22. | Thoti * | 250 | 19.56±0.12 | 250 | 12.88±0.17 | Elizabeth et, al. 2000 |
| 23. | Reddy | 500 | 24.52±0.15 | 500 | 17.93±0.14 | Sudarsan Reddy, 2002 |
| 24. | Vodde | 500 | 21.10±0.18 | 500 | 16.83±0.10 | Sudarsan Reddy, 2002 |
| 25. | Mala : Pokanati | 750 | 24.39±0.19 | 750 | 20.98±0.12 | Present Study |
| 26. | Mala : Rampala | 750 | 23.24±0.21 | 750 | 18.57±0.15 | Present Study |



Table 7
Age at Menopause among the Pokanati And Rampala Mala Women

| Year of Menopause | POPULATION | | | |
|-------------------|------------|---------------|------------|---------------|
| | Pokanati | | Rampala | |
| | No. | % | No. | % |
| 43 | 0 | 0.00 | 11 | 3.23 |
| 44 | 21 | 5.77 | 17 | 5.00 |
| 45 | 45 | 12.36 | 63 | 18.54 |
| 46 | 54 | 14.84 | 55 | 16.17 |
| 47 | 50 | 13.74 | 50 | 14.70 |
| 48 | 59 | 16.21 | 54 | 15.88 |
| 49 | 77 | 21.15 | 47 | 13.82 |
| 50 | 58 | 16.93 | 43 | 12.66 |
| | 364 | 100.00 | 340 | 100.00 |

| | Mean | S.D. | t - value | P-value |
|----------|-------|------|-----------|---------|
| Pokanati | 49.13 | 1.90 | 20.658* | 0.0000 |
| Rampala | 47.06 | 1.98 | | |

Table 8
Age at Menopause in Some Andhra Populations

| S.No | Population | Sample Size | Age at Menopause Mean \pm S.E. | Source |
|------|---------------|-------------|----------------------------------|---------------------------|
| 1 | Panta Kapu | 22 | 46.77 \pm 0.64 | Sivakumar Reddy, 1977 |
| 2 | Podur Brahmin | 28 | 47.46 \pm 0.68 | Sivakumar Reddy, 1977 |
| 3 | Vysya | 78 | 45.87 \pm 0.39 | Bhagyalakshmi, 1978 |
| 4 | Muslim | 100 | 45.64 \pm 0.20 | Ramana, 1978 |
| 5 | Mala-I | 228 | 48.98 \pm 0.08 | Chengal Reddy, 1979 |
| 6 | Chenchu | 16 | 44.69 | Gangadaram, 1979 |
| 7 | Balija | 251 | 48.16 \pm 0.14 | Gunasundaramma, 1980 |
| 8 | Madiga-I | 96 | 46.60 \pm 0.27 | Rajasekhar Reddy, 1981 |
| 9 | Sugali-I | 25 | 45.00 \pm 0.60 | Pandurangaswamy, 1983 |
| 10 | Sugali-II | 40 | 44.63 \pm 0.41 | Ramachandra Reddy, 1984 |
| 11 | Madiga-II | 248 | 46.91 \pm 0.16 | Rajasekhar Reddy, 1984 |
| 12 | Mala-II | 54 | 48.38 \pm 0.10 | Radhamanjari, 1984 |
| 13 | Bestha | 54 | 47.66 \pm 0.05 | Surendranatha Reddy, 1985 |
| 14 | Washerman | 188 | 45.55 \pm 0.16 | Subhashini, 1986 |
| 15 | Motati Reddi | 20 | 45.50 \pm 0.63 | Manjuvani, 1987 |
| 16 | Kamma | 83 | 46.46 \pm 0.27 | Aruna, 1987 |
| 17 | Pattapu | 76 | 45.17 \pm 0.27 | Manohar, 1989 |
| 18 | Reddi | 215 | 46.75 \pm 0.15 | Surendranadha Reddy, 1993 |
| 19 | Yadava | 300 | 46.80 \pm 0.17 | Gopal, 1996 |
| 20 | Thoti | 250 | 47.35 \pm 0.33 | Elizabeth et al., 2000 |
| 21 | Reddi | 500 | 47.26 \pm 0.12 | P.Sudarsan Reddy, 2002 |
| 22 | Vodde | 500 | 44.71 \pm 0.12 | P.Sudarsan Reddy, 2002 |
| 23 | Mala:Pokanati | 750 | 47.13 \pm 0.01 | Present Study (2003) |
| 24 | Mala:Rampala | 750 | 47.06 \pm 0.10 | " |



This means that age at menopause of Mala populations is in agreement with other works on Andhra populations (table 8). Statistically the two populations differ significantly (t-value: 20.658; P-value: 0.000) socio-economic differences could be the reason for this statistical significance.

7.CONCLUSION

The mean age at menarche for the Pokanati Mala women is 13.22 ± 1.22 and for Rampala Mala women it is 14.18 ± 1.58 . About 65% of women of both populations have their menarche in the years 13+ and 14+ . The mean age at marriage for males among Pokanati Mala is 24.39 and for females it is 20.98. In case of Rampala Malas, the mean age at marriage for male is 23.24 and for females it is 18.57 years. Thus, both populations, the mean marriage is high for both males and females. The mean age at menopause for the Pokanati Mala women is 49.13 and for the Rampala Mala women, it is 47.06 years. However, majority of women (50%) of both populations will have the menopause between the ages of 45 and 47 years.

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PERFORMANCE OF INDIA'S COMPUTER SOFTWARE INDUSTRY

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Introduction:

Electronics and Information Technology is proving to be the growth engine in the current day economies of the world. The liberalized policy initiatives of the Government of India in the last decade have propelled the Indian IT industry on to a path of development and prosperity. The Information Technology (IT) industry has shaped up as a major success story in India's Economy. Today, India's competency in Information Technology, more significantly in computer software (or simply software) and IT Enabled services is recognised globally. Over the last decade, the India IT industry has been growing by leaps and bounds. The Electronics Hardware and Computer Software/ Services industry, a comparatively new entrant in India's export horizon, has emerged as a fore-runner among all industries and has been consistently trading on a high growth path in recent years.

India has emerged as an "IT Super Power", especially in the field of software and related services export. Exports of computer software and IT enabled services have become large components of the exports of the country. This is also an area where the Government's role has been very different from that in some other industries. The important contribution of the Government in the growth of this industry consist of telecom policies, which enabled low cost computer net working in the country and investment in human capital such as through the IITs.

In the 21st century, human beings have been learning to live in a software world. "Software" is a word we use in relation to computers. The computer itself is hardware. But without a program, a computer can do nothing. A computer, when turned on, can only wait until it receives instructions. The instructions we give a computer, the programs that a



computer “runs” are its software. Without software, a computer is helpless, without software, a computer does nothing. While the genesis of such revolutionary changes could be traced to the technological changes in micro electronics, it has been sustained by the developments in software.

In this context, India’s success story which attracted the world attention mainly on account of her remarkable performance in the export of software services may be inspirational for other Developing countries. The recorded growth in the software exports from India as well as the credibility that India earned there from has no parallels in India’s economic history. It has also been shown that the organizational, managerial and other innovations introduced by the IT firms have been emulated by firms in other industries contributing to their enhanced performance. (Arora and Athreya 2002).

Objectives:

1. To analyse the performance of India’s Software Industry.
2. To analyse the changes in the direction of India’s computer Software exports
3. To examine the trends in Computer Software production and exports of India

Sources of the data:

Most of the existing studies on India’s software sector have been based on the data provided by the National Association of Software and Service Companies (NASSCOM). NASSCOM, the leading association of software companies in India, has a total membership of over 1200 in 2011 and it has been claimed that these companies account for nearly 95 per cent of the total software exports from the country. NASSCOM also used to provide, until 2004-05, company level information on sales, export, employment and other information. Another source of firm level data is the Centre for Monitoring Indian Economy. Since this source covers only the companies listed in stock market, its coverage is much less as compared to NASSCOM. However, by comparing firm level information from these



two sources, it has been shown that NASSCOM estimates on export involved some over estimation (Parthsarathi and Joseph 2002). Another source of data on software exports and production is the Electronics and Software Export Promotion Council (ESEC), an autonomous body under the Government of India and the Ministry of Information Technology. Yet, another source is the Reserve Bank of India (RBI) which is based on foreign exchange inflow into the country. Here it is also to be noted that the different sources cited above uses different conceptual frame in defining the software sector.

In this my paper I shall make use of the data provided by the Electronics and Software Export Promotion Council (ESEC) for the trend analysis, Countries wise comparison of computer software analysis etc.

Performance of Software Industry:

Developing countries are known to have comparative advantage in the production of services. This is on account of the abundant supply of labour - the major input in the production of Services - in developing countries leading to low wages. Since the technology of producing services does not differ significantly across countries, lower wages results in low cost of production of services in developing countries (Bhagwati 1984). However, most of these countries have been unable to tap this advantage mainly because most services are embodied in their providers and their export calls for the trans-border mobility of labour which is subjected to series of restrictions. Though the process of globalization, which *inter alia* implied the free movement of products and factors, accelerated momentum during the last two decades, there have been hardly any relaxation in the restrictions on labour mobility. Hence, the production structure and employment in developing countries continues to be dominated by primary and secondary sectors. Nonetheless, India has been successfully participating in the global division of labour in different services and emerged as a leading player in the export of software services *inter alia* by taking advantage the opportunities opened up by new technologies that increasingly splintered off services from its providers. While earlier studies have argued that the performance of India's software sector has been unprecedented in India's



economic history (Schware 1992; Arora et. al 2001, Joseph 2002; Joseph 2009; Joseph and Harilal 2001; Kumar and Joseph 2005 to list a few), they have also been concerned about the focus of software industry on the low end of the value chain, limited domestic market orientation and its associated opportunity costs. Against this background this section analyses the performance of software industry and explore if there are any evidence of transformation. More specifically, it examines the trend in domestic market orientation and movement along the software value chain in terms of move away from software services to other software activities involving higher skill and value addition like software products and software engineering research and design including embedded software development.

Computer Software:

Computer software (or simply software) is that part of a computer system that consists of encoded information as opposed to the physical computer equipment (hardware) which is used to store and process this information. The term is roughly synonymous with computer program but is more generic in scope. The term "software" was first used in this sense by John W. Tukely in 1957. In computer science and software engineering, computer software is all information processed by computer systems, programs and data. The concept of software was first proposed by Alan Turing in an essay.

Computer Software Industry in India

India's IT (Information Technologies) capabilities and its presence in the world market for IT software and services are well documented in a number of studies (see for instance, Radhakrishnan and Sharma 2004, Sudarsan 2004, Radakrishnan 2004, D' Costa, 2003, Arora and Athreya 2002, Joseph 2002, Joseph and Harilal 2001, Kumar 2001, Arora et al 2001, Illiyan 2001, Heeks 1996). IT and IT Enabled Services (ITES) has emerged as a promising sector for Indian economy as it generated revenue to the tune of US \$ 64 billion during 2007-08. Because of the faster growth of IT industry, its contribution to the national economic output (GDP) has increased from a mere 0.38 per cent in 1991-92 to 5.5 per cent in 2007-08.



'The rapid growth of ITES-BPO and the IT industry as a whole has made a deep impact on the socio-economic dynamics of the country. The total IT Software and Services employment has grown from 284,000 in 1999-2000 to 1.63 million in 2006-07 and expected to reach 2.0 million marks in 2007- 08 (excluding employment in Hardware sector). The indirect employment attributed by the sector is estimated to about 8.0 million in the year 2007-08. This translates to the creation of about 10 million job opportunities attributed to the growth of this sector' (DIT 2008). Thus, the sector has risen to become biggest employment generator with the number of jobs added almost doubling each year. Hence, Indian Software industry can continue to have manpower led growth creating large scale employment. Above all, 'IT has spawned a number of ancillary businesses such as transportation, real estate and catering, and has contributed to a rising class of young consumers with high disposable incomes as well as a rise in direct tax collection' (DIT 2008).

It is a well known fact that export oriented software and service sector is indeed the driving force of Indian IT industry and it is widely held as the engine of growth and earner of foreign exchange. Its share in total software industry has increased from 34.69 per cent in 1985-86 to 77.51 per cent in 2007- 08. 'At an annual growth rate of 50 per cent over the last decade (1990-00), the Indian software and service sector has expanded faster than in any other Countries of the world of comparable size' (Raghavan and Nair, 2001). Such a wonderful and sustained growth rate has been unparalleled in any of the sectors of the Indian economy since independence. Despite the fact that Indian software export still constitutes less than 2 % of world software and related services market, 'according to a World Bank funded study, its share in the global cross country customized software development market, has grown up from 11.9 per cent in 1991 to 19.5 per cent in 2000'(Sachitananta 2001). Further, 'with foresighted policies it could become a major force, capturing 5-8 per cent of the world market' (Sunder Shyam 2007). Significantly, software export is poised to emerge as the country's largest exporting sector with its share expected to rise from 26 per cent in 2007-08 to 36 per cent in 2008- 09. Due to all these reasons it



is firmly believed that 'this is one of the few areas where India has potential to become a 'Global Powerhouse' (Sen 1995).

Software is a knowledge driven industry. It requires a team of highly skilled professionals for its success. Today, the Indian IT Services and ITES sector employs over 25 lakh knowledge professionals during the past five years. Almost all major IT players in the world have set up subsidiaries or collaborations in India. The major attraction being an "abundance of technically qualified and cheap software manpower". This may have been the case before the start of the growth phase, but now there is, in fact, an acute shortage of qualified and trained manpower. This is getting reflected in the spiraling salaries (one of the highest average starting salary today), and more importantly, a frequent job-hopping culture. India, today have 7 Indian Institute of Technologies (IITs) and over 300 other Regional Engineering colleges / private colleges imparting IT education. As per a study approximately 5, 00,000 people are needed every year to meet the growth targets of the software industry. However, the total production from education and training institutions today is only about a third of this.

Thus, India has established a definite superiority in software services production. Recognizing the enormous significance of the Indian IT sector especially software export, this paper makes an attempt to delineate various dimensions of software export from India.

Software in India's GDP and Employment

Being one of the fastest growing sectors in the Indian economy software industry has also contributed towards the turnaround in India's GDP growth observed since 1991. Share of software production, which includes software services, software products and BPO, in GDP increased from 1.85% in 2000-01 to the highest level of 5.37% in 2008-09. Thereafter it has shown a marginal decline to reach 4.7% in 2010-11 (Table 1). It is also evident that in the service sector driven growth of the Indian economy recorded during the recent years, software sector played a significant role as its share in service sector GDP increased by threefold since 2000.



Equally remarkable has been its contribution in total exports which nearly doubled from 7.7 per cent in 2000-01 to 14.8 per cent in 2009-10 (see table 3) According to NASSCOM Strategic Review (2012), the direct employment generated by the software industry (software services, products, BPO and hardware) is estimated at 600,000 in 2011 as compared to 160,000 in 1996. It is also estimated that the indirect employment is about four times the direct employment. The industry is creating job opportunities for highly qualified (majority with an engineering degree) young graduates with a relatively short experience.

Table: 1 Contribution of software sector to India's GDP and exports

| Year | % of GDP | % of Service GDP | % of Total exports | % of Service exports |
|---------|----------|------------------|--------------------|----------------------|
| 2000-01 | 1.85 | 6.48 | 7.73 | 18.61 |
| 2006-07 | 4.63 | 16.76 | 13.27 | 28.23 |
| 2010-11 | 4.77 | 15.57 | 12.86 | 29.09 |

Data on GDP: Government of India, Economic Survey 2012-13.

Data on software production and export: Electronics and Software Export Promotion Council, Statistical yearbook different issues; Software includes the software services, software products and BPOs.

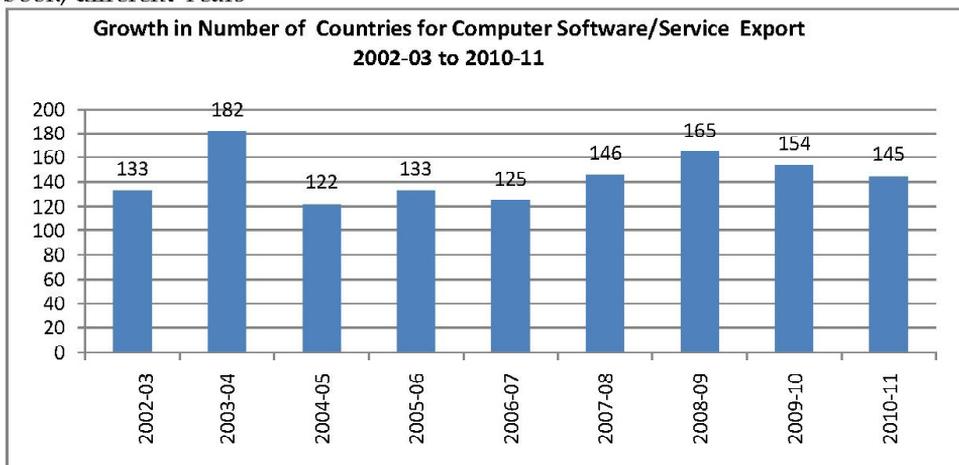
The observed performance of software sector in employment generation appears highly impressive when considered against the fact that employment generation by the organized manufacturing sector has been on the decline during 1990s (Nagaraj 2004) and according to NSS statistics during 1999-00 to 2004-05 growth in employment in the rural and urban areas has been only of the order of 1.97 per cent and 3.22 per cent respectively (Chandrsekhar et al 2006). While contributing significantly to GDP, export earning and employment the industry has been undergoing major transformation within.



Growth in Number of Countries for India’s Computer Software/ Services Exports

| Year | No of countries |
|---------|-----------------|
| 2002-03 | 133 |
| 2003-04 | 182 |
| 2004-05 | 122 |
| 2005-06 | 133 |
| 2006-07 | 125 |
| 2007-08 | 146 |
| 2008-09 | 165 |
| 2009-10 | 154 |
| 2010-11 | 145 |

Source: Electronics and Software Export Promotion Council (ESC), Statistical Year book, different Years



The preference of India as a preferred IT destination for software outsourcing and ITes/BPO is revealed to which India is exporting its software and services. On an average India has been exporting Computer Software/Services to over 147 countries in the past five years. During the year 2010-11 India Exported Computer Software Services to 145 countries of the world.

Trend in Production and Exports:

Data presented in the following table 2 clearly reinforces the findings of earlier studies which indicated that the performance of Computer Software



sector during the last two decades has been remarkable by any standard. During the decade of 1990s the total production of Computer software sector increased by 26 fold; from a little over \$200 million in 1990-91 to US \$5.5 billion in 1999-00, recording an annual average growth rate of over 44 per cent. With a total production of about \$75 billion in 2010-11, the observed high rate of growth during 1990s was sustained since 2000 recording an annual average rate of growth of over 35 per cent.

More remarkable has been the performance with respect to exports. Total exports increased from \$ 110 million 1990-91 to nearly \$ 4 Billion in 1999-00 recording an annual average growth rate of about 50 percent. Going by the available evidence, with a total export of \$ 57.6 billion in 2010-11 the observed rate of growth was as high as 38 per cent since 2000 (see table 2) Thus viewed, in a context wherein India has been severely constrained by the availability of foreign exchange, software sector contributed significantly towards improving the external health of the economy.

Table 2: Trend in Computer Software production and export (including BPO) from India

| Year | Software production (\$ Million) | Annual Growth rate (%) | Software Exports (\$ Million) | Annual Growth rate (%) |
|--------------------|----------------------------------|------------------------|-------------------------------|------------------------|
| 1990-91 | 209 | | 110 | |
| 1991-92 | 289 | 38.3 | 166 | 50.9 |
| 1992-93 | 382 | 32.2 | 221 | 33.1 |
| 1993-94 | 545 | 42.7 | 325 | 47.1 |
| 1994-95 | 803 | 47.3 | 473 | 45.5 |
| 1995-96 | 1182 | 47.2 | 711 | 50.3 |
| 1996-97 | 1798 | 52.1 | 1159 | 63 |
| 1997-98 | 2929 | 62.9 | 1813 | 56.4 |
| 1998-99 | 4009 | 36.9 | 2599 | 43.4 |
| 1999-00 | 5538 | 38.1 | 3962 | 52.1 |
| Avg Growth 1991-99 | | 44.2 | | 49.1 |
| 2000-01 | 8021 | 44.8 | 5978 | 50.9 |
| 2001-02 | 9931 | 23.8 | 7653 | 28 |
| 2002-03 | 12376 | 24.6 | 9607 | 25.5 |
| 2003-04 | 16141 | 30.4 | 12608 | 31.2 |
| 2004-05 | 21587 | 33.7 | 17216 | 36.5 |
| 2005-06 | 30404 | 40.8 | 23718 | 37.8 |
| 2006-07 | 42312 | 39.2 | 33757 | 42.3 |
| 2007-08 | 55144 | 30.3 | 43467 | 28.8 |
| 2008-09 | 61984 | 12.4 | 49540 | 14 |
| 2009-10 | 64956 | 4.8 | 51001 | 2.9 |
| 2010-11 | 74890 | 15.3 | 57616 | 13 |
| Avg Growth 2010-11 | | 35.3 | | 38.2 |

Source: Electronics and Software Export Promotion Council, Statistical Year book, different Years. Note: Software includes the software services, software products and BPOs



This Table- 2 also indicates that with global financial crisis that affected initially the US - the leading market for India - and later spread to Europe, has had its adverse effect. This is evident from the drastic decline in the rate of growth in export from over 36 per cent in 2007-08 to 6.6 per cent in 2008-09. However as these economies are reviving from crisis, the adverse effect appears to have been short lived because the rate of growth in export also picked up as is evident from the higher export growth of nearly 24 per cent recorded in 2010-11.

Direction of Computer Software/Services Exports

There is also evidence to suggest that the export market is becoming more diversified. Table 3 indicates North America remains the top destination for India's Computer Software/ Services Export up to 2010-11. Export to this region registered a growth of 7.46 % (11.89 % in US \$ terms) during 2010-11 over 2009-10. In value terms, export of computer software/ services to North America increased from Rs. 29657.7 crore estimated in 2002-03 to Rs. 147000 crore estimated in 2010-11, while EU countries increased from Rs. 10597.35 crore estimated in 2002-03 to Rs. 81800 crore estimated in 2010-11.

Table 3 : Changes in the direction of Computer Software/Services exports (including BPO)

| Destination | 2002-03 | 2003-04 | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 |
|---|---------------------|--------------------|--------------------|------------------|---------------------|------------------|---------------------|-------------------|------------------|
| Singapore, Hongkong & other South Asian Countries | 1687.95 (3.63) | 1950 (3.36) | 2381.4 (3.08) | 2800 (2.67) | 4500 (3.08) | 6500 (3.71) | 6493.27 (2.85) | 8000 (3.31) | 8400 (3.2) |
| Europe (EU countries) | 10597.35 (22.79) | 14549.7 (25.09) | 21146.9 (27.36) | 27000 (25.71) | 39420 (27) | 46725 (26.7) | 69489.37 (30.5) | 75800 (31.33) | 81800 (31.16) |
| North America | 29657.7 (63.78) | 35777 (61.68) | 47222.7 (61.09) | 65200 (62.1) | 90109.47 (61.72) | 107625 (61.5) | 133100.6 (58.42) | 136800 (56.54) | 147000 (56) |
| Middle East countries | 692.85 (1.49) | 681 (1.17) | 1197.82 (1.55) | 1300 (1.24) | 2259.81 (1.55) | 2292.5 (1.31) | 6835.02 (3) | 6200 (2.56) | 7875 (3) |
| Japan Korea & other Far East Countries | 2064.6 (4.44) | 3110 (5.36) | 2639.7 (3.41) | 3200 (3.05) | 3314.2 (2.27) | 4900 (2.4) | 2734.01 (1.2) | 3100 (1.24) | 3413 (1.3) |
| Australia & Other Ocean Countries | | | | | | | | | |
| African countries | 637.05 (1.37) | 621.58 (1.07) | 1236.95 (1.6) | 2200 (2.1) | 710 (0.49) | 1000 (0.57) | 2278.34 (1) | 2700 (1.12) | 3150 (1.2) |
| Russia and C.I.S countries | 4.65 (0.01) | 2.31 (0) | 0.58 (0) | 25 (0.02) | 92.89 (0.06) | 122.5 (0.07) | 18227 (0.08) | 250 (0.1) | 886 (0.34) |
| Australia & Other Ocean Countries | 632.4 (1.36) | 748.57 (1.29) | 1100.52 (1.42) | 425 (0.4) | 2460.82 (1.69) | 2975 (1.7) | 3873.18 (1.7) | 4100 (1.69) | 4463 (1.7) |
| Latin America | 51.15 (0.11) | 71.18 (0.12) | 82.9 (0.11) | 350 (0.33) | 322.31 (0.22) | 610 (0.35) | 341.75 (0.15) | 2300 (0.95) | 2625 (1) |
| Europe (Non EU Countries) | 474.3 (1.02) | 488.6 (0.84) | 290.76 (0.38) | 2500 (2.38) | 2810.5 (1.93) | 2250 (1.29) | 2506.17 (1.1) | 2700 (1.12) | 2888 (1.1) |
| Total | 46500 | 57511.3 | 75156.9 | 102500 | 146000 | 175000 | 245878.7 | 241950 | 262500 |



Source:

Electronics and Software Export Promotion Council (ESC), Statistical Year book, different Years

Note: Figures in brackets show the Percentage of Sectoral Total

Table 3 indicates that the share of North America traditionally the leading destination of India's Computer Software exports has declined by more than 7 per centage points since 2002, while that of EU countries exports has increased by more than 8 per centage points since 2002. EU, South Asian Countries, Middle East Countries remains the 2nd, 3rd, 4th, 5th, and 6th top destination respectively during the year 2010-11 as well. Export to Middle East Contries registered a high growth of 27% (32% in US \$ terms) during 2010-11.

POLICY INITIATIVES AND GOVERNMENT INTERVENTION

Though the genesis of software development in India can be traced back to the early 1970s, it received the direct attention of the policymakers only in the mid -1980s. This was probably because in the early 1970s, the share of software in the total cost of a computer system was negligible compared with that of the hardware. Also, it was generally held that software and hardware are complementary and therefore separate initiatives are not necessarily called for. Hence, till the mid- 1980s, while there were explicit policy announcements towards promoting computer industry in general, there was hardly any specific policy towards software development. This also reflected the lack of demand on account of the limited diffusion of computers. The use of computers was confined mostly to a few government departments, private sector units and educational organizations, where in software programmers were appointed to develop the required software. In general, software was considered a product amenable to trade.

The computer policy of 1984, probably for the first time, explicitly acknowledged the importance of software development and underlined the need for institutional and policy support. The policy called for the setting up of a separate Software Development Promotion Agency (SDPA) under the department of electronics, (DoE). Imports of inputs needed for software development were made more liberal. The increase in the production and



use of computers as a result of the liberal computer policy (Joseph 1997) enhanced the domestic demand for various software products and services. However, the nascent industry could not meet this increasing demand. As a result, a sizeable proportion of domestic demand had to be met through imports. At the same time, the rapid growth of global demand for software pointed to the increasing export potential. This in turn called for more concrete policies for the promotion of software development and export. Accordingly, in 1986, an explicit software policy was announced and software was identified as one of the key sectors on India's agenda for export promotion. The policy underlined the importance of integrated development of software for domestic and export market (GoI 1986). To facilitate the stated objectives, policy emphasized the need for simplifying procedures and provides various incentives such as tax holidays, tax exemption on income from software exports, export subsidies and duty-free import of hardware and software.

With the initiation of economic reforms in the early 1990s, there have been a number of other policy initiatives that have facilitated the growth of IT. The new policy initiatives included provision of finance for software development through equity and venture capital, measures to make available faster and cheaper data communication facilities, removal of entry barriers for foreign companies and reduction and rationalization of taxes, duties and tariffs (Narayana Murthy 2000).

In addition, the government also made certain institutional interventions. Not less than four major national task forces have studied all aspects of IT in the past four years and most of their recommendations have been acted upon by the government. More significantly, chief executives of leading private sector IT companies have been fully involved in the task force. A number of government agencies involved in different aspects of IT were brought together into an integrated ministry of information technology. This was followed by an IT Act to deal with the wide variety of issues relating to the IT Industry (Partahsarathi 2001).

One of the notable institutional interventions has been establishment of software technology parks (STPs) to provide the necessary infrastructure



for software export. The first ones to come into being were those at Pune, Bangalore, and Bhubaneswar in August, October, and December in 1990 respectively. In 1991, four more STPs were set up by the DoE at Noida, Gandhinagar, Thiruvanthapuram, and Hyderabad. As of now there are 18 software technology parks in the country and they play a significant role in the software export¹⁰. STPs are performing well in terms of its contribution to the over all revenue and export of the Indian software industry. 'As on 31st March 2007, 7543 units were operative out of which 6321 units were actually exporting. The remaining units are at various stages of gestation as the scheme allows three years for companies to start commercial production. There is 43 per cent increase in Software Exports through STPI in the year under review, from Rs 100, 965 crore in 2005- 06 to Rs 144,214 crore in 2006-07' (DIT 2008).

CONCLUSIONS AND SUGGESTIONS

From the foregoing analysis, it is clear that software is an area which will work as a catalyst to make India a 'Global IT Super Power'. Over the years Software has been growing at high rate of over 45 per cent. The share of software export in total export as well as its contribution to GDP has steadily increased over the years. That software sector has emerged as a foreign exchange earner and generator of large scale employment opportunities. A few of the suggestions emanating from the study are:

We need effective Govt. policy, managerial attitudes and cyber-savvy leaders to encourage high risk, long term investment. Comprehensive curricula must be put in place to cater to the demands of the emerging technologies and changing needs of the industry. Industry-Academia collaboration has to be strengthened. Specific IT graduation focusing on Industry needs can be introduced after 10+2. Software education centers like NIIT, APTECH, SSI, etc. must launch up -to -date courses keeping pace with the present demands at home and abroad. Easy access to educational loan to the students of IT courses should be provided. A national level test just like All India Engineering and Medical Entrance Examination can be conducted to tap the young talents to the IT industry after 10+2. Special attention must be paid to the marketing and brand building.



Overcoming infrastructural bottlenecks like uninterrupted power supply, communication facilities are the need of the hour. More broad basening of our overseas software market, concentration on high end software products, more regional diversification of software industry, diffusion of the information technology to the domestic market etc. are the need of the hour. More private participation, both domestic and foreign, is crucial for providing high quality power supply and communication facilities like high band width. Efforts must be paid to tap the best talents of Indian software experts for promoting the original software like Windows by investing more on Research and Development (R&D), providing facilities of international standards and by paying attractive salary. There is also a need to attract substantial amounts of Foreign Investment and Technology to rejuvenate Indian IT Industry and make it more competitive globally. An influx of foreign capital and Technology would expose Indians to the latest technologies. Last but not least, making available cheap hardware by reducing excise duty, sales tax can go a long way to provide a growth spurt to the Industry.

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PSYCHO – DYNAMICS OF WOMEN IN THE POSTMODERN LITERATURE

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Voice of Woman consciousness

“Effacing the margins of fear..... A Study of Shashi Deshpande’s Indu and Saru in the novels of The Dark Holds No Terrors and Roots and Shadow’s”

Women of the post modern era are educated and career - oriented, sensitive to the changing times and aware of the social and cultural disabilities to which they are subjected in the male - dominated society. They are suppressed and deprived of the right to express their inner consciousness and freedom to act and think on their own, despite the fact that woman sacrifices her whole life for the sake of her family, her husband and children. Her individual self and opinion has very little recognition in the male dominated society and so self-effacement is her normal way of life.

In the post modern era few well known women writers in the east like Kamala Markandaya, Santha Rama Rao, Nayantara Sehgal, Anita Desai and Shashi Deshpande through their literary works brought out the psychological exploration of the women protagonists who are essentially lonely and sensitive. Their growth from self alienation to self identification has made the women of today’s world to stir out of their placid stoicism to carve a niche for themselves in the male dominated society.

Today’s women are mostly similar to the characters of “Saru” and “Indu” in Shashi Deshpande’s novels “The Dark Holds No Terrors” and “Roots and Shadows”, they are liberating themselves from the shackles of tradition and taboos of the patriarchal society, and emerging as women



who could exercise their right to voice out their consciousness freely to reveal their individual capabilities and realize their true self through identity, assertion and self-affirmation.

Shashi Deshpande portrayed Saru and Indu as women protagonist who fight against their own obsessions and fears, emerge successfully as women of determination, not yielding to the dictates of the patriarchal society.

Shashi Deshpande has very exquisitely expressed the inner struggle and sufferings of the new class Indian women in the post modern era through the psychological analysis of the characters Sam and Indu who after suffering all the trauma in life emerge as strong, independent and self sufficient women who could voice their conscious freely.

“Envisioning Women of India” by Mahakavi Subramaniya Bharatiar in Tamil (1910) English Translation - She walks with raised head, with her eyes straight, She has her principles, unafraid of anybody She has a lofty and knowledge based pride, Women of excellence, don't falter from the chosen path, She drives ignorance away. She welcome the bliss of life. With learned mind, this is the Dharma of emerging woman.

Throughout history women have been bombarded with unattainable expectations, and the twenty first century made no effort to stray from this continuum. American Women were often asked to go above and beyond the very high standards previously set by the male dominated. Culture. However, due to the tenacity of a few women and the coming together of many, the female minority was able to have its voice heard.

Way back (two hundred years ago) women were not allowed to speak as often as they would have liked to. They were expected to be care givers, have and raise children, and do house hold duties such as cleaning and cooking for the family. Basically that was a women's typical roje. Men were constantly seen as being way above women, so therefore they would always be the ones who commanded or had the final word in what would be done. Women were seen as Passive and weak when compared to men.



This is in complete contrast from the way in which the world sees women today. In our country, women have the ability and choice to create their own lives, own business, become what they've always dreamed, speak their minds or balance a family and a career.

Shashi Deshpande the Sahitya Akademi Award winner and a great writer has brought out the same outstanding qualities through her characters 'India' & 'Saru' in her novels 'Roots and Shadows' and 'The Dark Holds No Terror'.

Shashi Deshpande needs no introduction within her fragile frame, she is a Profusion of creativity. Amorphous thoughts and thought-provoking issues, a defying captivity of simple but powerful words with which she strings an effortless prose while writing or speaking is a lesson in learning for all those who come in contact with her.

Deshpande's novels are as densely populated as India, with people picking their way through tangled family relationships with every change, they re-organise themselves in new kinship patterns. Her novels show difficult times, but a stronger woman can slice her way through, to carve a human space, a space that still costs dear. Many of their protagonists give a free rein to a cathartic indignation that energises them to see, think and act. Her women characters have a strong sense of will power and find themselves up against the granite wall of a community that forces them to first quality as someone "useful". She has very exquisitely expressed the inner struggle, effacing fears and sufferings of the new class Indian women in the post-modern era through the physiological analysis of the characters 'Saru' and 'Indu' who after suffering all the trauma in life emerge as strong, independent and determined women who could voice their consciences freely.

In Shashi Deshpande's *Roots and shadows* the character Indu reflects the women of to-day. She, in her struggle against the age-old slavery, suffering and suppression is often debilitated by her timidity and diffidence.

Indu, the woman protagonist to Shashi Deshpande's first published novel *Roots and Shadows* is an educated and highly sensitive young woman. The new education made her conscious of futility or emptiness of the



various-long-preserved notions and taboos about the woman. She started opposing and breaking them. As a motherless child she was tended by the members of the joint family who never denied her any amount of care and affection. But Indu finds the dominant Akka, a senior member and a mother surrogate in the novel and even the family to be a hindrance in achieving her goal of attaining independence and completeness. Indu rebels against the suffocating authority of Akka and the oppressive atmosphere of the family where women have no choice but to submit and accept their lot.

A women's independent thinking and intelligence is weighed as a disgrace and burden-in words of Indu's uncle.

Indu's uncle Kaka-"For a woman, intelligence is always a burden, Indu. We like our women not to think"(pg.33)

Here Shashi Deshpande clearly describes the state of women in the society-who are preferred to be submissive, sober and silent than speak out their mind frankly.

Indu strives to seek a new environment from the traditional parental house she marries Jayant from a different caste of her own choice and leaves her parental home .She hopes that her marriage with Jayant would enable her the desired freedom to express her true self to the world. But she painfully realizes that she walked into just another trap. Her marriage with Jayant suppresses her Femininity and her human demands. She is physically and spiritually dissatisfied with her husband who take her for granted and expects her "to submit". She realizes her decision is wrong she feels as though she had been deceived and made to hide her feelings "as if they were bits of garbage", (pg.38) she feels as though she lost her identity in Jayant and realizes that it is because of him that her life is meaningful in one view and also meaningless in another view. She simply does things which pleased her husband. "Have I become fluid, with no shape, no form of my own", (pg. 49)

She realized that life is full of compromises and among the many compromises that she had made in order to keep up the semblance of a happy marriage, the most distressing one is that she has given up, her



ambition of being a writer , on her own. When Indu is at the cross-roads of her life with her sense of certainty confidence and assurance withering away, she gets the opportunity to go back to her ancestral home to attend her cousin Mini's marriage . Here when Indu asks Mini her feeling about the traditional marriage she is going to have, Mini answers "What choice do I have Indu? of course I am marrying him because there's nothing else you can do", (pg. 125) Here Shashi Deshpande has emphasized the fear, agony and frustration a woman experiences in traditional marriages where one's she marries the man all his flaws are overlooked.

She returns to her husband after spending three weeks at her parents ancestral home. Indu feels "I had been home for three weeks now, but already I felt as if aeons separated me from the person I had been before I came home. The ten years I had spent away, had on the other hand been compressed to nothing. I had fitted myself without an effort into the pattern of life here. Which was in its essentials, the same as it had always been. Meals and rituals formed the centre of life, surrounded by a penumbra of trivial activities of which gossip was the most important one. Decision making had no place at all in this patterns of living that adopted", (pg.,128)

According to shashi Deshpande through the character Indu, one should listen to the dictates of one's own conscience and be true to one self in speech as well as in action. Indu realizes her position in her ancestral house the responsibilities, fears and frustrations do not touch her. The turmoil and distaste that had filled her slowly begin to seep out of her. She is viewed as an assertive woman with an emerging new self. She is able to rebuild her lost vision. She suddenly realizes what she lacks "I knew in that instant what it was that my life had lacked. It was the quality of courage", (pg 150)

Shashi Deshpande's - Analysis of character 'Saru' in *The Dark Holds No Terror*. Saru is a humble and modest very sensitive woman. She is aware of her own limitation. Yet, she longs to break away from the rigid traditional norms and adopts to be an anti Matriarch.



As a young girl Saru experiences the partisan, attitude of her parents. Her mother's strong preference for her brother drives her to a sense of alienation. Saru laments "But my mother had said to me once 'It rained heavily the day you were born was terrible'. And somehow it seemed to me that it was my birth that was terrible for her, not the rain", (pg. 169)

Here the attitude of the society towards the birth of a girl child (not so welcome) is clearly identified.

Against her mother's wishes Saru studies medicine. Saru's mother doesn't understand the importance of girl's education. Luckily her father encouraged her. Saru's mother - "But she's a girl ... And don't forget medicine or no medicine, doctor or no doctor you still have to get her, married, spend money on her wedding. Can you do both? (pg. 144)

Here the writer brought out the cynical view of the people who think investing on a girl's education is mere waste, instead can spend the same on her marriage.

Saru marries Manu against her mother's wish. She expects her marital status would bring her happiness and joy. As long as Manu was the bread winner they had peace at home despite its filth and stench. But problems begin to slowly creep in, the moment Saru is recognized as a doctor, professional egoism, made Manu feel immensely insecure and this casts a shadow on their married life. He feels totally ignored as Saru gets busy with her profession. She notices 'the change' in Manu. Saru the esteem with which I was surrounded made me inches taller. But perhaps, the same things made him inches shorter", (pg.42)

His ego is hurt, he feels inferior and this sense makes him brutal in his behavior. Though he is normal during day time, he turns a treacherous rapist at night and tries to assert his masculinity through sexual assaults. Saru- "I was sleeping and I woke up and there was this man hurting me. With his hands, his teeth, his whole body", (pg. 201)

Saru even desperately tries to save her marriage. - "I want to stop working. I want to give it all up ... my practice, the hospital, everything", (pg.79) But he disagrees her idea of leaving her job, Saru feels that it is,



"Sheer necessity" that holds them together. She feels that she has every reason to break away from her marriage of strained relationship. She says to herself, "I have to orient myself, I have to be more sure, more certain", (pg.69)

Here the writer is projecting the confused state of married woman's mind. She is surrounded by the so called traditions and customs like a wife should always server her husband like a slave irrespective of how he treats her.

Saru yearns for security and emotional attachment. On hearing through a friend about her mother's death, Saru finds solace in visiting her father's house alone and away from her sadist husband and her loveless marriage. At her father's place, she sops thinking about herself as a woman. The doctor in her is more often seen than the wife or mother in her. Neighborhood women visit her to talk about their ailments. Mostly these women keep everything as a secret. This makes Saru to think - "their very womanhood a source of deep shame to them She calls them stupid, silly, martyrs... idiotic heroine, Going on with their task and destroying themselves in the bargain, for nothing but a meaningless modesty", (pg. 107)

This reflects the views of Shashi Deshpande on the status of women in our society who are silent sufferers and are even frightened to discuss matters with their same sex.

The feeling of homelessness (away from husbands home) drives Saru occasionally to the longing to be released from existence itself. However she is not destroyed by her sense of alienation. She is able to think sensibly and logically. Her self-confidence is revealed when she says - "All right, so I am alone. But so's every one else. Human beings, they're going to fail you. But because there's just us, because there's no one else, we have to go on trying. If we can't believe in ourselves, we're sunk".(pg.220)

The writer brings out the transformation of Saru from a modest, simple woman into a determined and independent one.



In the end she receives a letter about Manu's arrival, first she feels indifferent but at this moment of utter despair, it is the call of her profession that steadies her and gives her the courage to confront reality. Before going out to attend a sick patient Saru says, "Baba, if Manu comes, tell him to wait, I'll be back as soon as I can", (pg.221) This proves her assertion of her career without any compromise. She is no longer an object, for Manu to vent his frustration on. Thus Saru emerges as a new woman who can control herself and shed her passivity.

According to Shashi Deshpande Saru who is the replica of middleclass working women in modern India, rebels against traditions, but ultimately tries to compromise with the existing reality. This is because, Saru lives in a society based on traditions and customs.

Young modern women like Indu and Saru are sandwiched between tradition and modernity. Those who leave behind the convention and take the initiative to join modernity are entangled.

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LEGAL FRAMEWORK FOR COMBATING CORRUPTION IN INDIA: AN ANALYSIS

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1. INTRODUCTION

India the largest democratic country in the world¹ with a population of over a one billion people is the second most populous country after China. Indian economy is one of the fastest growing economies and is attracting huge investments from the developed countries India has become the 6th largest economy in the world². In spite of healthy growth indices, vast population in India still lives in poverty. Corruption has become a part in every walk of life in India³. The Nation's progress is seriously hampered by all pervasive corruption. Weeding out corruption today is a major challenge before Indian society. To eradicate the evil of corruption, the Central Government has enacted Anti-Corruption Laws⁴ to deal with the prevention of corruption. An effective legal system is crucial to fight against corruption, as an ineffective or politicized judiciary is the best friend of corruption. The first step in a judicial reform process is a review of the country's legal framework, to uncover weaknesses and inconsistencies in the laws, as well as out-dated legislation that should be removed from the civil and criminal codes⁵. Where the judicial system is honest and respected, it can counter the activities of a corrupt government, as in the case of Brazil, where former President Collor de Mello was impeached by Congress and the process upheld and monitored by the Supreme Court⁶.

Accountability of the judicial system to the public and to the government is essential in tackling corruption within the courts. Those responsible for the investigation, prosecution and management of corruption cases must have the highest moral standards and be subjected to periodical



review of their work, as well as having clear accountability mechanisms to superiors and an adequate system to address complaints.

2. Evolution of Anti-Corruption Laws in India

India's history is replete with countless anti-corruption measures and subsequent punishments. The Rig Veda, a sacred Hindu text described as "the oldest literary monument of the Indo-European races⁷," discusses the prevention of corruption and extortion. *Vishnu and Manu* punished people who accepted bribes and punished corrupt government officials with property forfeiture. Though British colonial rule saw its fair share of deceitful practices, Britain still attempted to minimize such acts. During his tenure as governor general, Lord Cornwallis, in contrast to Warren Hastings, implemented policies such as increasing East India Company servants' salaries, prohibiting such servants from receiving presents, and opening the doors for the creation of the Indian Civil Service—all actions whose purposes were to decrease corruption. In the nineteenth century, before the collapse of colonialism in India, Britain passed the Indian Penal Code to construct a proper legal criminal system.

In the pre-independence period, the Indian penal Code (IPC) was the main tool to combat corruption in public life. The Code had a chapter on 'Offences by Public Servants'. Sections 161 to 165 provided the legal framework to prosecute corrupt public servants. At that time the need for a special law to deal with corruption was not felt.

The Second World War created shortages which gave opportunity to unscrupulous elements to exploit the situation leading to large scale corruption in public life. This situation continued even after the war. The law makers concerned about this menace, felt that drastic legislative measures need to be taken. Hence the Prevention of Corruption Act, 1947 was enacted to fight the evils of bribery and corruption.

3. Prevention of Corruption Act 1947

The Prevention of Corruption Act, 1947 did not redefine nor expand the definition of offences related to corruption the already existing IPC. Similarly, it has adopted the same definition of 'Public Servant' as in the



IPC⁸. However the law defined a new offence 'criminal misconduct in discharge of official duty' - for which enhanced punishment (minimum one year to maximum seven years) was stipulated. In order to shift the burden of proof in certain cases to the accused, it was provided that whenever it was proved that a public servant had accepted any gratification, it shall be presumed that the public servant accepted such a gratification as a motive or reward under sections 161,164 and 165 without the permission of the authority competent to remove the charged public servant. The Act also provided that the statement by bribe-giver would not subject him to prosecution⁹.

It was considered necessary to grant such immunity to the bribe-giver, who might have been forced by circumstances into giving a bribe. This immunity was not provided; all complaints would become liable for punishment, which would deter them from giving complaints against any public official who accepted bribe.

The Criminal Law (Amendment) Act, 1952 brought some changes in laws relating to corruption. The punishment specified under Section 165 of IPC was enhanced to three years instead of existing two years. Also a new Section 165A was inserted in the IPC, which made abetting of offences, defined in Sections 161 and 165 of IPC. It was also stipulated that all corruption related offences should be tried only by Special Judges.

4. Prevention of Corruption Act, 1988¹⁰:

The prevention of Corruption Act 1988 consolidates the provisions of the Prevention of Corruption Act, 1947, the Criminal Law Amendment Act, 1952 and sections 161 to 165 of IPC. Besides, it has certain provisions intended to effectively combat corruption among public servants. The salient features of the Act are as follows:

- a. The term 'Public Servant' is defined in the Act. The definition is broader than what existed in the IPC.
- b. A new concept - 'Public Duty' is introduced in the Act.



- c. Offences relating to corruption in the IPC have been brought in Chapter 3 of the Act, and they have been deleted from the Indian Penal Code.
- d. All cases under the Act are to be tried only by Special Judges.
- e. Proceedings of the court have to be held on a day-to-day basis.
- f. Penalties prescribed for various offences are enhanced.
- g. Criminal Procedure Code (for the purpose of this Act only) to provide for expeditious trial (Section 22 of the Act provides for amended Sections 243, 309, 317 and 397 of Cr.P.C).
- h. It has been stipulated that the no court shall stay the proceedings under the Act on the grounds of any error or irregularity in the sanction granted, unless in the opinion of the court it has led to failure of justice.
- i. Other existing provisions regarding presumptions, immunity to bribe-giver, investigation by an officer of the rank of Dy.S.P., access to bank records etc have been retained.

The Corruption Act, *inter alia*, widened the scope of the definition of a "public servant" enhanced penalties provided for offences in earlier laws. Since the Prevention of Corruption Act 1988 is the main law for dealing with offences of pertaining to corruption in India. Be it enacted by Parliament in the Thirty-ninth Year of the Republic of India as follows:

- (1) This Act may be called the Prevention of Corruption Act, 1988.
- (2) It extends to the whole of India except the State of Jammu and Kashmir and it applies also to all citizens of India and out side India.

4.1 Statement of Object and Reasons¹¹

In the statements of objects and reasons it is expressly mentioned that the object of the Act is to amend the existing anti-corruption laws with a view to making them more effective by extending the scope and ambit of the definition of "public servant" and to bring to within its sweep



each and every person who held an office by virtue of which he was required to perform any public duty.

- (1) The Bill is intended to make the existing anti-corruption Laws more effective by widening their coverage and by strengthening the provisions.
- (2) The Prevention of Corruption Act, 1947, was amended in 1964 based on the recommendations of the Santhanam Committee. There are provisions in Chapter IX of the Indian Penal Code to deal with public servants and those who abet them by way of criminal misconduct. There are also provisions in the Criminal Law Amendment Ordinance, 1944 to enable attachment of ill gotten wealth obtained through corrupt means, including from transferees of such wealth. The Bill seeks to incorporate all these provisions with modifications so as to make the provisions more effective in combating corruption among public servants.
- (3) The Bill, *inter alia*, envisages widening the scope of the definition of the expression "public servant", incorporation of offences under Sections 161 to 165-A of the Indian Penal Code, enhancement of penalties provided for these offences and incorporation of a provisions that the order of the trial court upholding the grant of sanction for prosecution would be final if it has not already been challenged and the trial has commenced. In order to expedite the proceedings, provision for day-to-day trial of cases and prohibitory provisions with regard to grant of stay and exercise of powers of revision on interlocutory orders have also been included.
- (4) Since the provisions of Sections, 161 to 165A are incorporated in the proposed legislation with an enhanced punishments, it is not necessary to retain those Sections in the Indian Penal Code. Consequently, it is proposed to delete those Sections with the necessary saving provisions.



4.2 Definition, meaning and scope of Public Servant

Section 2 of the PC Act, 1988 defines "Public Servant" broadly. It covers 12 categories of persons irrespective of the fact whether they have been appointed by Government or not they are under purview of the public servant. These categories are as follow.

- (i) Any person in the service or pay of the Government or remunerated by the Government by fees or commission for the performance of any public duty;
- (ii) Any person in the service or pay of a Local Authority;
- (iii) Any person in the service or pay of a corporation established by or under a Central, Provincial or State Act, or an authority or a body owned or controlled or aided by the Government or a Government company as defined in section 617 of the Companies Act, 1956;
- (iv) Any Judge, including any person empowered by law to discharge, whether by himself or as a member of any body of persons, any adjudicatory functions;
- (v) Any person authorized by a Court of Justice to perform any duty, in connection with the administration of justice, including a liquidator, receiver or commissioner appointed by such court;
- (vi) Any arbitrator or other person to whom any cause or matter has been referred for decision or report by a court of justice or by a competent public authority.
- (vii) Any person who holds an office by virtue of which he is empowered to prepare, publish, maintain or revise an electoral roll or to conduct an election or part of an election.
- (viii) Any person who holds an office by virtue of which he is authorised or required to perform any public duty.
- (ix) Any person who is the President, Secretary or other office bearer of a registered co-operative society engaged in agriculture, industry, trade or banking, receiving or having received any financial aid from



the Central Government or a State Government or from any corporation established by or under a Central, Provincial or State Act, or any authority or body owned or controlled or aided by the Government or a Government company as defined in section 617 of the Companies Act, 1956.

- (x) Any person who is a chairman, member or employee of any Service Commission or Board, by whatever name called, or a member of any selection committee appointed by such Commission or Board for the conduct of any examination or making any selection on behalf of such Commission or Board.
- (xi) Any person who is a Vice-Chancellor or member of any governing body, professor, reader, lecturer or any other teacher or employee, by whatever designation called, of any University and any person whose services have been availed of by a University or any other public authority in connection with holding or conducting examinations.
- (xii) Any person who is an office-bearer or an employee of an educational, scientific, social, cultural or other institution, in whatever manner established, receiving or having received any financial assistance from the Central Government or any State Government, or local or other public authority.

Persons falling under any of the above sub clauses are public servants, whether appointed by the Government or not. Wherever the words, "Public Servant" occur, they shall be understood of every person who is in actual possession of the situation of a public servant, whatever legal defect there may be in his right to hold that situation".

4.2.1 M.L.A. /M.P. is a public servant

*In Habibulla Khan v. State of Orissa*¹² The Court held that an M.L.A., is not a public servant under Section 21 of the Indian Penal Code, but he comes within the purview of sub-clause (viii) of clause(c) of Section 2 of the 1988 P.C.Act,1988 as held by the High Court of Orissa, an M.L.A. "holds



an office” and “performs public duty” . In the appeal, the Supreme Court proceeded “assuming” that M.L.A. is a public servant.

In a later decision in the case of *P.V. Narasimha Rao v. State*¹³: (C.B.I.), a five Judge bench of the Apex Court laid down that a Member of Parliament holds an office and by virtue of such office he is required or authorized to perform duties and such duties are in the nature of public duties.

An M.P. would therefore fall within the ambit of sub-clause (viii) of clause(c) of section 2 of the Prevention of Corruption Act, 1988 even though there is no authority who can grant sanction for his prosecution under section 19(1) of the Act. Sanction is not necessary for the court to take cognizance of the offences and the prosecuting agency shall, before filing a charge sheet for offences punishable under Sections 7,10,11,13 and 15 of the Act against an M.P. in a criminal court, obtain the permission of the Chairman of the Rajya Sabha or Speaker of the Lok Sabha as the case may be.

4.2.2 Minister is a public servant

In the case of *M. Karunanidhi v. Union of India*¹⁴: The Supreme Court held that a Minister, Prime Minister and Chief Minister inclusive, is decidedly a public servant in terms of clause (12) of Section 21 Indian Penal Code itself, which corresponds to clause (i) of clause(c) of Section 2 of the 1988 Act. The Supreme Court held that a Minister is appointed and dismissed by the Governor and is therefore subordinate to him, that he gets salary for the public work done or the public duty performed by him and that the said salary is paid to him from the Government funds.

Theoretically there is no time limit or bar for launching prosecution under the Act. Even MPs and MLAs come under the ambit of “public servant” and “public duty” in *Jarkhan Mukti Morcha*¹⁵ case the Apex Court of India held that the “public duty” is one in which public or State or commits has interest at large and MPs represent the people of their constituency is the highest law making body. There is also their representation in deciding a control over the execution. To that extent they



perform public duty and fall within the purview of the Prevention of Corruption Act, 1988.

4.2.3 Chairman of Co-operative Society is a Public Servant

In *State of Maharashtra v. Laljit Rajesh Shah*¹⁶ The Supreme Court held The Chairman of the Cooperative Society is a public servant under Section 2 (c) of the PC Act 1988.

4.2.4 Ex-public Servant can be prosecuted under P.C Act, 1988

The Calcutta High Court in *Manmal v. State of West Bengal*¹⁷ held that when a 'Public Servant' ceased to be a public servant, he is neither entitled to the advantages of a public servant nor can be saddled with the liabilities attached to the office of a public servant and it cannot be said that in certain respects he is a public servant under the Prevention of Corruption Act, 1988 and in certain other respects he is not a public servant and finally held that a retired public servant cannot be prosecuted for the offence of criminal misconduct specified in Section.5 of the P.C.Act,1988.

The decision of the Calcutta High Court was challenged before the Supreme Court and the Supreme Court reversed the conclusions of the Calcutta High Court decision reported in *State of West Bengal V. Manmal*, (1977) where in the Supreme Court held that the crucial date for the purpose of attracting the provisions of the P.C.Act is the date of the commission of the offence when the person arraigned must be "Public Servant". Retirement, resignation, dismissal or removal of a 'public servant' would not wipe out the offence, which he committed while in service. Therefore a person ceased to be a "Public Servant" can also be prosecuted for the offence of criminal misconduct specified in Section 5 of the Prevention of Corruption Act, 1988.

4.3 Investigation of corruption cases under the Prevention of Corruption Act, 1988

Any officer in charge of a police station may, without the order of a Magistrate, investigate any cognizable case which a court having jurisdiction over the local area within the limits of such station would



have power to inquire into or try under the provisions of the Criminal Procedure Code, 1973¹⁸.

According to Section 17 of the Prevention of Corruption Act, 1988 investigation into cases under this Act should be done by police officers not below the rank of Deputy Superintendent of Police and it also enumerates the police officers who are entitled to investigate¹⁹.

Investigation shall be done by a police officer not below the rank of:

- a] In case of Delhi, an Inspector of Police.
- b] In metropolitan areas, of an Assistant Commissioner of Police.
- c] Elsewhere, of a Deputy Superintendent of Police or an officer of equivalent rank shall investigate any offence punishable under this Act without the order of a Metropolitan Magistrate or a Magistrate of First Class, or make any arrest therefore without a warrant.

If a police officer not below the rank of an Inspector of Police is authorized by the State Government on behalf by general or special order, he may investigate such offence without the order of a Metropolitan Magistrate or Magistrate of First Class or make arrest without a warrant.

4.4 Speeding up Trials under the Prevention of Corruption Act 1988

A major cause of delay in the trial of cases is the tendency of the accused to obtain frequent adjournments on one plea or the other. There is also a tendency on the part of the accused to challenge almost every interim order passed even on miscellaneous applications by the trial court, in the High Court and later, in the Supreme Court and obtaining stay of the trial. Such types of opportunities to the accused need to be restricted by incorporating suitable provisions in the Cr.P.C. It may also be made mandatory for the judges to examine all the witnesses summoned and present on a given date. Adjournments should be given only for compelling reasons.

In order to ensure speedy trial of corruption cases, the Prevention of Corruption Act, 1988 made the following provisions:



- a. All cases under the Act are to be tried only by a Special Judges.
- b. The proceedings of the court should be held on a day-to-day basis.
- c. No court shall stay the proceedings under the Act on the grounds of any error or irregularity in the sanction granted, unless in the opinion of the court it has led to failure of justice.

The experience with the trial of cases under the Act has been disappointing in spite of the provisions which were considered as path-breaking at the time. Although the judges trying corruption cases under the Prevention of Corruption Act, 1988 have been declared as Special Judges, they have been saddled with numerous other non-corruption cases with the result that trials in corruption cases get delayed. To avoid such delays and speeding up the trials the Prevention of Corruption Act 1988, a provision is provide to appoint special judges dealing with only for corruption cases.

4.5 Power to appoint Special Judges

The Central and the State Governments are empowered to appoint Special Judges by placing a notification in the Official Gazette, to try the following offences:

- a. Any offence punishable under this Act²⁰.
- b. Any conspiracy to commit or any attempt to commit or any abetment of any of the offences specified in clause (a).
- c. A person shall not be qualified for appointment as a Special Judge under this Act unless he is or has been a Sessions Judge or an Additional Session Judge or an Assistant Sessions Judge.²¹ under the code of Criminal Procedure Code, 1973 (2 of 1974).



Section 3 of the Prevention of Corruption Act, 1988²² empowers the Central Government to appoint Special Judges, to try any case. In *Indira Narayan Ganguly v. State of West Bengal*²³, the Calcutta High Court held that any offence punishable under the Act of 1988 can be tried only by a Special Judge under Section 3 of the Prevention of Corruption Act, 1988.

4.5.1 Special Judge to be appointed for a particular area or for a particular case or class of cases:

The Central or State Government to appoint Special Judges not only for particular area or areas but also for any particular case or class of cases. Under the corresponding Section 6 of the repealed Act of 1952, the Government was not empowered to appoint a Special Judge for any particular case or class of cases. The present Section has widened the powers of the Government in this regard.

The question whether the power of the State Government to appoint Special Judges for an area or areas or for a case or group of cases is absolute, unfettered or unguided was considered by the Supreme Court in *J. Jayalalitha v. Union of India*²⁴. The Apex Court observed that the discretion of the Government is not unfettered or unguided. The relevant extracts are given below:

“In order to achieve the object of the Act, how many Special Judges would be required in an area could not have been anticipated by the legislature as that would depend upon various factors. The number of Judges required for an area would vary from place to place and from time to time. So also requirement of a separate Special Judge for a case or group of cases in addition to the area Special Judge, who could have otherwise dealt with the case or group of cases in addition those cases, in addition to the area of Special Judges, who could have otherwise dealt with that case or those cases, would also depend upon various variable circumstance. Therefore, no fixed rule or guideline in that behalf could have been laid down government as it would be in a better position to know the requirement. Further, the discretion conferred upon the Government is not absolute. It is in the nature of the statutory obligation or duty. It is the requirement, which



would necessitate exercise of power by the Government. When a necessity would arise and of what type being uncertain the legislature could not have laid down any other guideline except the guidance of "Necessity". It is really for that reason that the legislature while conferring discretion upon the Government has provided that the Government shall appoint as many Special Judges as may be necessary. The words 'as may be necessary' mean what is indispensable, needful or essential".

4.6 Powers of Special Judge

A Special Judge is a creature of the Criminal Law (Amendment) Act, 1952. He enjoys a special status under the Act and is clothed with such powers as have been given to him by the provisions of the Act. It is true that the qualification for the appointment of a Special Judge is that he must be either a Sessions Judge or an Additional Sessions Judge or an Assistant Judge.

The Special Judge may take cognizance of the offences without the accused being commissioned to him for trial. In trying, the accused persons shall follow the procedure prescribed by the Cr.P.C. for the trial of warrant cases by Magistrate. He may with a view to obtain the evidence of any person supposed to have been directly or indirectly concerned in or privy to an offence, tender pardon to such person provided that he would make full and true disclosure of the whole circumstances within his knowledge or in respect to any person related to the offence.

The provisions of Sections 326 and 475 of the Cr.P.C. shall apply to the proceedings before a Special Judge and for purpose of the said provisions, a Special Judge shall be deemed to be a Magistrate.

A Special Judge may pass a sentence authorized by law for the punishment of the offence of which a person is convicted. A Special Judge, while trying any offence punishable under the Act, shall exercise all powers and functions exercised by a District Judge under the Criminal Law Amendment Ordinance, 1944.



- (1) A Special Judge may take cognizance of offences without the accused being committed to him for trial and, in trying the accused persons, shall follow the procedure prescribed by the Code of Criminal Procedure, 1973 for the trial of warrant cases by Magistrates.
- (2) A Special Judge may, with a view to obtaining the evidence of any persons supposed to have been directly or indirectly concerned in or privy to, an offence, tender a pardon to such person on condition of his making a full and true disclosure of the whole circumstances within his knowledge, relating to the offences and to every other person concerned, whether as principal or abettor, in the commission thereof and any pardon so tendered shall, for the purposes of sub-sections 91) to (5) of section 308 of the Code of Criminal Procedure, 1973, be deemed to have been tendered under section 307 of the Code.
- (3) Save as provided in sub-section (1) or sub-section (2) the provisions of the Code of Criminal Procedure, 1973, shall so far as they are not inconsistent with this Act, apply to the proceedings before a Special Judge and for the purposes of the said provisions, the Court of the Special Judge shall be deemed to be a Court of Sessions and the persons conducting a prosecution before a Special Judge shall be deemed to be a public prosecutor.
- (4) In particular and without prejudice to the generality of the provisions contained in sub-section (3) the provisions of Sections 326 and 475 of the Code of Criminal Procedure, 1973, shall, so far as may apply to the proceedings before a Special Judge and for the purposes of the said provisions, Special Judge shall be deemed to be a Magistrate.
- (5) A Special Judge may pass upon any person convicted by him any sentence authorized by law for the punishment of the offence of which such person is convicted.
- (6) A Special Judge, while trying an offence punishable under this Act, shall exercise all the powers and functions exercisable by a District Judge under the Criminal Law Amendment Ordinance, 1944.



4.7 Offences and Penalties under Prevention of Corruption Act, 1988

Sections 7 to 16 are incorporated in Chapter III of the Prevention of Corruption Act, 1988 deals with the offences and penalties. Sections 7 and 13 (1) (d) constitute two different offences. In fact, there are vast differences between two, though both the Sections are meant to curb corruption²⁵. The main ingredients of the charge of an offence under Section 7 (old Sec.161 I.P.C.) of the Act as observed that in *R.S. Nayak vs. Antulay*²⁶ and Others the Supreme Court opened that:

- (1) That are acquired as a public servant
- (2) That he must show to have obtained or attempted to obtain from any person, any gratification other than legal remuneration.
- (3) That the gratification should be as a notice or reward for doing or forbearing to do in the exercise of his official functions, favour or disfavours to any person.

The Section does not remain that the public servant must, in fact be in a official act, favour or service at the time of the demand or receipt of the gratification. In the case of *Inder Dyaldas v. State of Bombay*²⁷ it was held that it is not necessary that the act for doing which the bribe is given, be actually performed. A representation by a public servant that he has done or will do an act impliedly includes a representation that it was or within his power to do the act. Section 8 deals with taking gratification in order by corrupt or illegal means, to influence public servant.

Investigation of an offence under Section 7 of the Prevention of Corruption Act, 1988 is required to be conducted by a police officer of the rank specified under Sec. 17 of the Act. Previous sanction of the competent authority is necessary for prosecution under section as laid down in sec. 19 of the Act, for the court to take cognizance of the offence. Special Judge has exclusive jurisdiction to try the offences as per sections 3 and 4 of the Act. The Offences are punishable with imprisonment for minimum period of six months, extending up to 5 years and also with fine.

Section 161 Indian Penal Code is punishable with imprisonment of either description for a term, which may extend to three years, or with fine



or with both, whereas offence under Section 5 (2)r/w Sec.5 (1)(d) of the 1947 Act is punishable with imprisonment which may extend to seven years and also with fine. There is also a provision for minimum punishment of imprisonment of one year in the latter case.

In *Mahendra Prasad v. State*²⁸ The Delhi High Court held that the appellant who was working in the Office of Sub Registrar of Properties, Delhi was convicted for accepting bribe from the complainant in the matter of supply of a certified copy to the complainant and awarded punishment of 2 and 4 years Under Sections 7 and 13 (2) Prevention of Corruption Act, 1988 respectively. The appellant filed criminal appeal and an application for suspension of sentence under Section 389 Criminal Procedure Code. The High Court observed that in the present scenario regarding corruption in which corrupt fearlessly accept money and as the appellant was in jail only for a few months held that it was not a fit case for suspension of sentence and dismissed the application.

4.8 Cases Trial by Special Judges²⁹

Section 7 of the Criminal Law (Amendment) Act merely states that every offence shall be tried by the Special Judges for the area within which it was committed. Therefore, where only one Special Judge has been appointed for a particular area that Judges alone and no other Judge is competent to deal with the offence committed within the said area.

In *Ramachandra Prasad v. State of Bihar*³⁰, The Apex Court observed that an objection was raised before the Supreme Court that the case could not be transferred to a Special Judge who had no territorial jurisdiction to try the same. The Supreme Court observed: The provisions of Sec.256 of the Criminal Procedure Code empowering the High Court to transfer any case from a criminal court subordinate to it to any other court competent to try it, apply to the case before any Special Judge. If this case had been transferred to the court of the Special Judge Manbhumi, on the coming into force of the Criminal Law Amendment Act, it would have been open to the High Court to transfer the case from that court to the court of the Special Judge.



4.8.1. Speedy trial of cases by Special Judge:

Clause (4) of Section 4 providing for speedy trial of cases by Special Judge by enacting that notwithstanding anything contained in the Code of Criminal Procedure 1973 a Special Judge shall for as may be practicable hold the trial of the offence on day to day basis. This is a new provision.

Offence under the Prevention of Corruption Act, 1988 is a grave one for which a special law had to be enacted. Even in Orissa, with that object the Special Court Act has been enacted with the anxiety of prevention of corruption from the society. Interference by the court in quashing the prosecution against those alleged to be guilty of embezzlement or other types of corruption, would not be judicial exercise of discretion, where great injustice is not caused to the accused persons and the abuse of the process is such that cannot be eradicated by directing speedy trial which is fundamental right of the accused.

5. Other Laws and Provisions to tackle Corruption

India is a large country with a population of over a one billion people. It is also the second most populous country after China in the world. It is one of the fastest growing economic in the world and is attracting huge investments from the developed countries³¹.

In spite of healthy growth indices, a vast population still lives in poverty. The countries progress is seriously hampered by all pervasive corruption. Weeding out corruption today is a major challenge before Indian society. To eradicate the evil of corruption the Central Government has enacted Laws³², dealing with the prevention of corruption in India.

By the end of the twentieth century, India, like many other large countries, had created a number of offices promulgating anti-corruption measures, such as the Administrative Vigilance Division in the Department of Personnel and Training, CBI, Vigilance Units in the Ministries and departments of the Government of India, disciplinary authorities, and the CVC³³. The CVC, CBI and ACB work to eradicate the offenses laid out in the PCA³⁴.



Apart from the Prevention of Corruption Act, 1988, the Law makers have enacted the following Laws and Provisions to eradicate the corruption in India. (a)Article 311 of the Constitution of India, Prevention of Money Laundering Act, 2002,Right to Information Act, 2005.

6. Article 311 of the Indian Constitution:

The Constitution of India reiterated the former Prevention of Corruption Act, 1947 provision that no civil servant can be prosecuted and punished by an authority subordinate to the one which made the original appointment. Further guarantees are provided for civil servants such as the right to be heard when charged of corruption during the investigation (but not when penalties are being imposed). Noteworthy is the provision which makes the appointing authority to make the final determination whether an inquiry is warranted at all (by giving its reasons in writing). Further, the President of India or the Governor of a State may prevent an inquiry in the name of national security. While this provision was originally intended to protect the civil servants from harassment, it in fact turned out to be a hindrance in that sometimes no consent was given by the appointing authority, or if given, it came too late and/or only grudgingly. Veerappa Moily, Chair, ARC-2, quoting the 2004 report of the Central Vigilance Commission showed that "out of the 153 cases for sanction, 21 cases were pending for more than 3 years, 26 cases between 2-3 years, 25 between 1-2 years. The departmental enquiries are soft-pedalled (sic) either out of patronage or misplaced compassion³⁵.

7. Prevention of Money Laundering Act, 2002³⁶

Prevention of Money Laundering Bill in which deliberately customs, excise, income tax and sales tax seems to have been omitted in the schedule to the Bill. The Prevention of Money Laundering Act, 2002 (PMLA) forms the core of the legal framework put in place by India to combat money laundering. PMLA and the Rules notified there under came into force with effect from July 1, 2005. Director, Financial Intelligence Unit -IND and Director (Enforcement) have been conferred with exclusive and concurrent powers under relevant Sections of the Act to implement the provisions of



the Act. The scheduled crime means a crime under the Act mentioned in the schedule to the Bill. By keeping the main source of generation of black money in the country, the Bill provides an incentive for the money launderers. In fact, the Foreign Exchange Regulation Act (FERA) has also been given up and the Foreign Exchange Management Act (FEMA) is toothless at this stage. Therefore, at every level of policy there is adequate protection given for those who indulge in corruption especially in a big way.

Many public servants are able to hold their ill-gotten wealth in foreign countries, which they subsequently transfer to their homeland through money laundering, disguising them as funds, apparently from a legal source. This Act empowers the Directorate of Enforcement, India and Financial Intelligence Unit, India, both agencies of the Government of India, to investigate and prosecute such persons under this Act.

8 Right to Information Act, 2005

It is a fact that too much secrecy in public administration breeds corruption. The Right to Information Act, 2005 has been enacted and received assent of the President of India on 15.6.2005. The main objectives of the Right to Information Act, 2005 are as follows:

- (1) To provide for setting out the practical regime of right to information for citizens,
- (2) To secure access of information under the control of public authorities,
- (3) To promote transparency and accountability in the working of every public authority,
- (4) The constitution of Central Information Commission and State Information Commission and
- (5) For matters connected or incidental thereto.



As per the Section 2(f) of the Act, "information" means any material in any form, including records, documents, memos, e-mails, opinions, advices, press releases, circulars, orders, logbooks, contracts, reports, papers, samples, models, data material held in any electronic forms and information relating to any private body which can be accessed by a public authority under any other law for the time being in force.

As per Section 3 of the act, all the citizens have the right to information. Right to information as per Section 2 (j) means "the right to information accessible under this Act which is held by or under the control of any public authority and includes the right to

- i) Inspection of work, documents, records
- ii) Taking notes, extracts or certified copies of documents or records
- iii) Taking certified samples of materials
- iv) Obtaining information in the form of diskettes, floppies, tapes, video cassettes or in any other electronic mode or through printouts where such information is stored in a computer or in any other device

As per the Section 4 of the Act, every public authority shall maintain all its records, detail catalogue, index in a manner and ensure that all the records that are appropriate to be computerized within reasonable time. Further the same has to be published within 120 days from the enactment of the Act. In this connection, there shall be no obligation to give any citizen information which would impair process of investigation or apprehension or prosecution of offenders and those matters are specifically exempted from disclosure. Moreover notwithstanding anything in the Official and Secret Act, 1923, the public authority may allow access to information if public interest in disclosure out ways the harm to be protected the interest.

It is pertinent to note that this Act is not applicable to certain organizations as per the provisions U/Section 24 like Intelligence and Security organizations specified in the 2nd Schedule. However the



information pertaining to allegation of corruption and human rights violation shall not be excluded.

The Right to Information Act 2005 is a legal tool that will help check corruption and hold the various departments, agencies and officials of the Government accountable. The Act prevents arbitrary action by any Government servant. The RTI Act, 2005 proposes a mission statement of sorts by stating that it is essentially a practical roadmap detailing the ways by which citizens of India can gain access to information that can promote good governance.

The Right to Information Act aims at ensuring efficiency, transparency and accountability in public life. This Act requires all public authorities, except the ones that handle work relating to national security, to publish all information about their functioning at regular intervals through various means of communication, including the internet. Now any person can seek information from the convened public authority just by filing an application at almost at no cost. The public authority has to reply to the application compulsory within 30 days. This Act can indeed be described as a revolutionary step towards the eradication of corruption from public life.

Legislations such as the RTI Act, in India are also important in curbing corruption. On the one hand it empowers citizens and breaks the information monopoly of the Public Officials. Therefore, it prevents corrupt public officials from mis-using this information to advance their own interest. On the other it provides the Government with more power and public support for conducting top down audit of corrupt departments. There is evidence that the letter works effectively in a developing economy eminent³⁷.

9. CONCLUSION

The Prevention of Corruption Act 1988 was enacted to deal with the corruption cases in the public sector and by public servants only but no article is there to check the widespread corruption in the private sector which also seriously hampers the overall growth and development of the country. According to Section 19 of the Prevention of corruption Act 1988



prior permission of authority competent is required to remove a public servant from his or her post, before launching prosecution is court. This often delays the launch of prosecution and the system is slow and punishments are not severe or rigorous. According the corruption Act-trial on corruption cases should be proclaimed by Special Judges is highly insufficient compared to the number of corruption cases filled in the courts. Consequently, many corruption cases are kept pending and the courts are overburdened. The Prevention of Corruption Act, 1988 (POCA) in India is implemented by the CVC, The CBI, the ACBs and vigilance commissions. This pattern of implementation of anti-corruption laws by several anti-corruption agencies has always been ambiguous. In order to convict a corruption public servant, the prosecution has to prove its case beyond doubt. This is a strict legal requirement as per the Indian Evidence Act. Prosecution has to depend heavily on the testimony of witnesses to prove its case beyond doubt. There is no witness protection scheme, nor are there provisions for quick and effective action against witnesses who become hostile. As a result witnesses frequently become un co-operation and spoil the prosecution case. Punishments are, therefore, not swift and effective under the Corruption Act and don't deter corrupt public servants. To control the corruption in India there is a grave need to strengthen the anti-corruption laws.

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 - 12 1993 CrI. L.J. 3604.
 - 13 1998 CrI. L.J.2930.
 - 14 1979 CrI.L.J.773: AIR, 1979 SC. 898.
 - 15 Criminal appeal no: 1207-08 of 1997.
 - 16 AIR, 2000, S.C. 937.
 - 17 AIR 1974 CrI.L.J. 92 (Cal)
 18. Sec.156 (1) of the Code of Criminal Procedure, 1973.
 19. Section 17 of the Act, deals with the Persons authorised to investigate cases of Corruption. It provides that: Notwithstanding anything contained in the Code of Criminal Procedure, 1973 (2 of 1974), no police office bellow the rank:-
 - (a) In the case of the Delhi Special Police Establishment, of an Inspector of Police:
 - (b)In the metropolitan areas of Bombay, Calcutta, Madras and Ahmedabad and in any other metropolitan area notified as such under sub-section (1) of section 8 of the Code of Criminal Procedure, 1973 (2 of 1974), of an Assistant Commissioner of Police:
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(c) Elsewhere, of a Deputy superintendent of Police or a police officer of a equivalent rank, Shall investigate any offence punishable under this Act without the order of a Metropolitan Magistrate or a Magistrate of the First Class, as the case may be, or make any arrest therefore without a warrant. Provided that if a police officer not below the rank of an Inspector of Police is authorised by the State Government in this behalf by general or special order, he may also investigate any such offence without the order of a Metropolitan Magistrate or a Magistrate of the First Class, as the case may be, or make arrest therefore without a warrant. Provided further that an offence referred to in clause (e) of sub-section (1) of section 13 shall not be investigated without the order of a police officer not below the rank of Superintendent of Police.

20 Sections 7 and 13 (1) (d) corresponding section 161 IPC and Section 5 (1) (d) of the PC Act, 1947.

21 Sub Section (2 of 74) Criminal Procedure Court 1973

22 Section 3 of the Prevention of Corruption Act, 1988.

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25 Sections 7 and 13 of Prevention of Corruption Act, 1988.

26 1988 S.C.C. 602.

27 1988 Cr L. J. 1005

28 (2008) CCR 28 (Del)

29 Code of Criminal Procedure 1973 (2 of 1974)

(1) Notwithstanding anything contained in the Code of Criminal Procedure, 1973, or in any other law for the time being in fore, the offences specified in sub-section (1) of section 3 shall be tried by special judges only.

(2) Every offence specified in sub-section (1) of section 3 shall be tried by the special judge for the area within which it was committed, or, as the case may be, by the special judge appointed for the case, or where there are more special judges than one for such area, by such one of them as may be specified in this behalf by the Central Government.



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- (3) When trying any case, a special judge may also try any offence, other than an offence specified in section 3, with which the accused may, under the Code of Criminal Procedure, 1973, be charged at the same trial.
 - (4) Notwithstanding any thing contained in the Code of Criminal Procedure, 1973 a special judge shall as far as practicable, hold the trial of an offence on day-to-day basis.

Every offence mentioned in Section 3(1) shall be tried by the Special Judge for the area within which it was committed. When trying any case, a Special Judge may also try any offence other than what is specified in S. 3, which the accused may be, under Cr.P.C. be charged at the same trial. The Special Judge has to hold the trial of an offence on day-to-day basis. However, while complying with foretasted, it is to be seen that the Cr.P.C. is not bifurcated.

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- 33 Central Vigilance Commission [CVC], Vigilance Manual 1 (6th ed. 2005) [Hereinafter Vigilance Manual
- 34 Vigilance Manual, 165, p. 1-10.
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DEVELOPMENT OF PANCHAYET RAJ IN INDIA AND ITS OBJECTIVES

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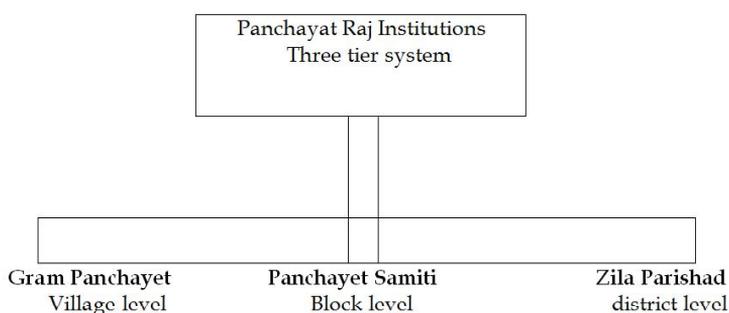
Introduction

The panchayet raj is south Asian political system mainly in India, Pakistan and Nepal. It is the oldest system of local government in the Indian subcontinent. The word "panchayet" has been derived from the root word 'yet' which literally means assembly of five (panch) wise and respected elders chosen and accepted by the village community. However, the term panchayet raj is relatively new in the Indian context and was for the first time introduced by the Britishers to the sub continent. Mahatma Gandhi advocated *Panchayati Raj*, a decentralized form of Government where each village is responsible for its own affairs, as the foundation of India's political system. The term for such a vision was *Gram Swaraj* ("village self-governance"). Recommendations of Balwant Rai Mehta Committee. The Balwant Rai Mehta Committee was a committee appointed by the Government of India in January 1957 to examine the working of the Community Development Programme (1952) and the National Extension Service (1953) and to suggest measures for their better working. The recommendations of the committee were approved by NDC in January 1958 and this set the stage for the launching of Panchayati Raj Institutions throughout the country. The committee recommended the establishment of the scheme of 'democratic decentralisation' which finally came to be known as Panchayati Raj. (i) Establishment of a 3-tier Panchayati Raj system - Gram Panchayat at the village level, Panchayat Samiti at the block level, and Zila Parishad at the district level. This system was adopted by state governments during the 1950s and 60s, as laws were passed to establish panchayats in various states. It also found backing in the Indian



Constitution, with the 73rd amendment in 1992 to accommodate the idea. The Amendment Act of 1992 contains provision for devolution of powers and responsibilities to the panchayat both for the preparation of economic development plans and social justice, as well as for implementation in relation to 29 subjects.

The panchayet raj was designed as three tier system involving the creation of institutions of self govt, in ruler areas. The three tiers of the panchayet raj system were, and these continue to be largely so till date, as under:



Gram panchayat: The gram panchayat is the executive organ of the gram sabha. It is the most important unit of rural local government. It is directly elected by all the voters living within the area of the panchayat. In India there are 225000 gram panchayats approximately. The membership of the gram panchayat varies considerably from 5 to 31. In Panjab, Gram Panchayat have 5 to 9 members but in U.P from 16 to 31 members. The members of the Panchayat (panches) are elected by all the voters by a secret ballot. In all the states 1/3rd of seats are reserved for women.

The powers and functions of the Gram Panchayet are more or less similar n all the states. The Gram Panchayet performs several functions, rule making, rule implementation, financial functions and even minor judicial functions. These can be broadly divided into two categories, obligatory and discretionary. They cover a wide range including civic administration, cultural, social and development activities from sanitation, conservancy, crop experiments, promotion of cottage industries the registration of birth and deaths.



Panchayat Samiti: The Panchayat Samiti is the intermediate tier in the panchayet raj system. In different states the panchayet simiti have been given different names. But in most of the states it is known by name of panchayet simiti. The term of a panchayet samiti is five years in all the states. A panchayet samiti ordinary meets at the least six times each year for the transaction of its business and not more than two months are to be allowed to elapse between any two successive meetings. The panchayet Samiti, in its very first meeting, elects two of its members as chairman and vice chairman for the transaction of business at a meeting of a panchayet Samiti. The quorum has been fixed as the majority of the total members.

The functions of the panchayet samiti are agriculture multiplication and distribution of improved seeds. Distribution of fertilizers, providing credit for agriculture purpose.

Animal husbandry and fisheries, Upgrading local stock by introducing pedigree breeding bulls and castrating scrub bulls, introducing improved breeds of cattle, sheep and polity.

Health and ruler sanitation. Maintains and expansion of health services including vaccination and control of epidemics, dissemination of knowledge regarding family planning.

Zila Parishad: The Zila Parishad is the top most tier of the panchayat raj. It operates at the district level and looks after the areas of the district. The Zila Parsihad is a corporate body having perpetual succession and a common seal. It has the power to acquire, hold and dispose of property and to enter into contacts. Zila Parishad has different names in Assam it is known as Mahakum Parishad (sub. Divisional level.) in Tamil Nadu and Karnataka it is known as the District Development Concil and in Gujarat, the district panchayat. The majority of the total membership or a Zila Parishad is the quorum for meeting. The Zila Parishad meets once in three months. In Zila Parishad there is a chairman and vice chairman. The term of the chairman is equal to the term of Zila Parishad. He can be also removed by the members by passing a removal resolution by 2/3rd majority. The main function of the chairman is to preside over the meetings of the Zila Parishad. He



exercises administrative supervision and control over chief executive officer and other officials of the Zila Parishad.

The powers and functions of the Zila Parishad:- Development of agriculture, to setup and maintain warehouses, to develop marketing network for marketing agricultural produce, to undertake poverty alleviation programmes.

Aims of Panchayat Raj System

The main objectives of the panchayat Raj have been: Democratic decentralization, rural local self government, and machinery for rural development. The socio-economic development of villages and development of India really means the development of her villages.

Specially, the aims of the Panchayat raj can be summarized as follows:

- (I) To encourage the people of rural areas in solving their problems locally.
- (II) To develop the habit of democratic living.
- (III) To secure the foundations of Indians democracy.
- (IV) To instill a sense of self-confidence among the rural people.
- (V) To undertake the task of rural development through the efforts of community.

CONSTITUTIONAL STATUS OF PANCHAYAT RAJ

Panchayat Raj System has been incorporated in Indian Constitution. Article 40 directs the State to take steps to organize village panchayats and endow them with such powers and authority as may be necessary to enable them to function as units of self- government. The object of the provision is to introduce democracy at the grassroots. These Panchayats are expected to be the training grounds for the development of democratic institutions. The constitutional 73rd Amendment Acts 1992, provided constitutional sanction to democracy at the gross roots level by incorporating in the 'Constitution new parts — Parts IX and Part LX A relating to Panchayats and urban local bodies. The 73rd Amendment provides for a three tier



Panchayat Raj system at the village. With the enactment of this amendment the Panchayat Raj Institutions have been endowed with such powers and authority as may be necessary to function as institutions of self-government and contains provisions of devolutionsisted in the eleventh schedule of the constitution.

Conclusion

Thus in this paper I analysed that the Panchayat Raj system is very important for the development of the individuals. Because due to the Panchayat Raj system all individuals can play an active participation in the government functions of the state. in Panchayat Raj system the people can solve their problems easily. Panchayat Raj has completed 52 years of enactment, but it has not be so successful as expected to create new hope and confidence amongst the rural people. At last, the centre and state government should sanction more and more funds or allocate operational funds to these institutions so that they will functions with great ease.

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AN ANALYTICAL STUDY OF TEACHING OF MATHEMATICS AT ELEMENTARY LEVEL IN PUNJAB

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INTRODUCTION

Mathematics is the base of all sciences. There is hardly any discipline of study without the numbers. Mathematics is not the inborn ability of the students rather it is taught to the students. Mathematics is the difficult subject also. Even teachers are not so efficient to give the proper knowledge about Mathematics to students. India's HRD minister Kapil Sibal has said that Mathematics should be taught as a compulsory subject to students. There is a very poor result of Mathematics at elementary level in Punjab. To uplift these results, we have to take care of teaching of Mathematics at elementary level. As effective education is related to teacher's aptitude, teacher's attitude towards his subject and teaching competency etc., a teacher occupies an important place in the whole process of educational transformation. The progress of any nation largely depends upon her distinguished teachers. There were the times when it was believed that teachers are inborn and nothing can be done to improve the teaching competencies of a person. But the technology of teaching has altered this belief and has presented a clear cut possibility of further development in the teaching abilities of any person at any level of teaching' considering the possibilities of further development in the teaching called teacher training institutions were established. In this research, we have studied about status of Mathematics teaching in Punjab, Teaching Aptitude, Attitude towards Mathematics, Teaching Competency of Mathematics teachers and Mathematical Achievement of eighth class students in Government Elementary Schools affiliated to P.S.E.B.

SIGNIFICANCE OF THE STUDY

There are 22 districts in state of Punjab. There are around 12,967 government elementary schools. The Mathematical achievement at the

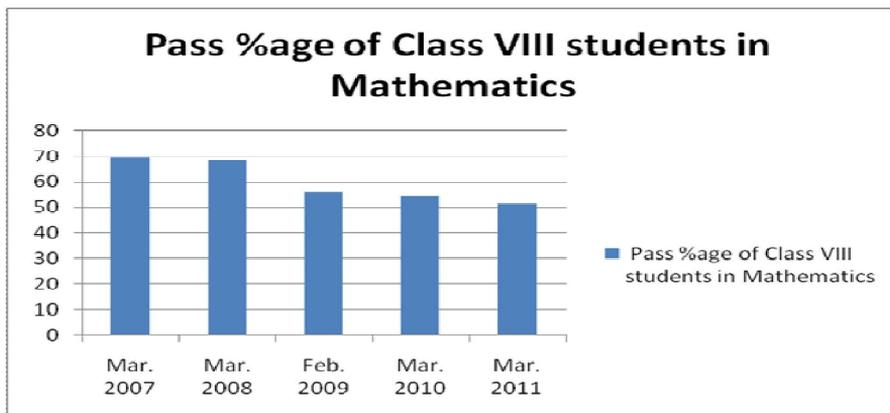


elementary level in Punjab as compared to the other subjects is shown in the table given below. (the data in the table has been collected from Punjab School Education Board, Mohali)

Mathematics Pass Percentage of Class VIII Students in PSEB Middle Level Examination over the last five years

| Year Subject | Pass %age Mar. 2007 | Pass %age Mar. 2008 | Pass %age Feb. 2009 | Pass %age Mar. 2010 | Pass %age Mar. 2011 |
|-----------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| Mathematics | 69.36 | 68.24 | 55.93 | 54.23 | 51.32 |

Pass Percentage of Class VIII Students in Mathematics over the last five years



It is evident from the Table and Figure that the pass percentage of Class VIII students in Mathematics of PSEB affiliated Govt. Elementary Schools has gone down over the past five years. While the pass percentage of Class VIII students in Mathematics in March 2007 was 69.36% it has decreased steadily and the pass percentage of Class VIII students in Mathematics in March 2011 was 51.32%.

The present position of Mathematical achievement of eighth class students is very poor. Teacher's attitude towards Mathematics, his teaching aptitude and teaching competency has a great impact on Mathematical achievement of students. A teacher can teach effectively only if he has positive attitude towards his subject, good teaching aptitude and good



teaching competency. Teaching aptitude further depends upon the mental ability, attitude towards children, adaptability, professional information and interest in profession. A teacher should be having positive attitude towards his subject if he wants to convey the subject matter to students. The positive attitude helps the teachers to be role model for the future generation of students. It is well known if a teacher has positive attitude for his subject, he is more likely to be successful in it. Therefore, measurement of an attitude of a teacher towards his subject, teaching aptitude and his teaching competency has a special significance in education and in influencing the achievement of students. Till now, there are not many researches conducted on the status of mathematical achievement of elementary students and its' relationship with teacher's attitude towards Mathematics, his teaching aptitude and teaching competency. In this study, we can throw light on the teacher's attitude towards Mathematics, teaching aptitude, teaching competency and Mathematical achievement of students. In order to collect the information about different aspects of teaching of Mathematics at elementary level in Punjab and to study the different aspects of the Mathematics teacher at elementary level such as teaching aptitude, his attitude towards Mathematics and teaching competency as well as the Mathematical achievement of elementary students, following problem has been selected to work upon.

OBJECTIVES OF THE STUDY

The Study was conducted keeping in view the following objectives

1. To collect the information about different aspects of teaching of Mathematics (such as number of teachers, their professional achievements, number of Mathematics teaching hours, infrastructural facilities for teaching Mathematics, number of books, teaching aids) at elementary level in Punjab.
2. To study the teaching aptitude of Mathematics teachers of elementary schools in terms of gender and locale.
3. To study the attitude towards Mathematics of Mathematics teachers of elementary schools in terms of gender and locale.



4. To study the teaching competencies of Mathematics teachers of elementary schools in terms of gender and locale.
5. To study the Mathematical achievement of students of elementary schools in terms of gender, locale & general and reserved categories in Punjab.
6. To prepare the profile of Mathematics teachers of government elementary schools of Punjab.

HYPOTHESES

In the first objective, information relating to teaching of Mathematics was collected, so no hypothesis is required to be built. The present study carries following hypotheses:

1. There is no significant difference in the teaching aptitude of male and female Mathematics teachers of elementary schools.
2. Urban and rural Mathematics teachers of elementary schools do not differ significantly in the teaching aptitude.
3. There is no significant difference in the attitude towards Mathematics of male and female Mathematics teachers of elementary schools.
4. Urban and rural Mathematics teachers of elementary schools do not differ significantly in the attitude towards Mathematics.
5. There is no significant difference in the teaching competencies of male and female Mathematics teachers of elementary schools.
6. Urban and rural Mathematics teachers of elementary schools do not differ significantly in the teaching competency.
7. There is no significant difference in the Mathematical achievement of male and female students of elementary schools.
8. Urban and rural students of elementary schools do not differ significantly in the Mathematical achievement.
9. General and reserved category students of elementary schools do not differ significantly in the Mathematical achievement.



Delimitations of the Study

1. The study was delimited to govt. elementary schools of Punjab affiliated to PSEB & upper elementary classes(i.e., 6, 7, 8) only.
2. The study was delimited to three districts(Highest, average and low literacy rate) of Punjab.
3. The Mathematical achievement was studied at the end of elementary stage i.e., eighth class only.
4. The study was delimited to only two reserved categories of elementary schools students i.e., SC and BC.

METHODOLOGY

Descriptive survey Method was applied in this study.

UNIVERSE OF THE STUDY AND SAMPLING

Sampling is the essential feature in any research endeavour. Since it is not possible to cover the whole population in descriptive studies, the researcher is to resort to sampling.

The universe of this study includes all the government elementary schools in 22 districts of Punjab. Out of this universe, 3 districts have been selected. One district is having highest literacy rate, second district is having average literacy rate and third district is having lowest literacy rate. Then out of the 3 districts, 150 elementary schools were selected. Thus sample of study includes 150 schools out of which 50 schools were from highest literacy rate district, 50 from average literacy rate district and 50 were from lowest literacy rate district. A sample of 150 teachers of elementary schools of Punjab were taken. Out of these 150 teachers, 50 teachers from district having highest literacy rate, 50 teachers from district having average literacy rate and 50 teachers from district having lowest literacy rate were taken. All teachers of each elementary school who are teaching Mathematics constitute sample of study. It means teachers who are teaching from first to eighth class were included in the sample.



TOOLS

1. Information Schedule for Status of teaching of Mathematics at elementary level (Self constructed)
2. Teaching Aptitude Test Battery (TATB) by R.P. Singh and S.N. Sharma. It measures teaching aptitude of elementary and school teachers. The final form of the test consists of 120 items and measures teaching aptitude through five sub-tests which are mental ability, attitude towards children, adaptability, professional information and interest in profession.
3. Attitude Towards Mathematics Scale (ATMS) by S.C. Gakhar and Rajni. This scale consists 46 items of 8 areas. The 8 areas include wider applicability, development of skills, reasoning, objectivity, intellectual development, non-intellectual development, individual outlook and universal outlook.
4. Teaching Competency Scale (Self constructed). It consists of various skills used by teacher in pre-active phase, inter-active phase and post-active phase of classroom teaching. It includes nine skills such as Skill of Introducing the Lesson, Skill of Chalk-board writing, Skill of Explanation, Skill of Stimulus Variation, Skill of Reinforcement, Skill of Questioning, Skill of using Teaching aids, Skill of Recapitulation, Skill of Assigning Home Work.

STATISTICAL TECHNIQUES

1. Percentage analysis has been applied to study the different aspects related to teaching of Mathematics at Elementary level.
2. Descriptive Statistics and T-test has been applied to study the Teaching Aptitude, Attitude towards Mathematics, Teaching Competency of Mathematics teachers and Mathematical Achievement of eighth class students in Government Elementary Schools affiliated to P.S.E.B



DATA, THEIR PRESENTATION, ANALYSIS AND INTERPRETATION

The present study deals with Survey or analytical study of teaching of Mathematics at elementary level in Punjab which include information about status of Mathematics teaching in Punjab, Teaching Aptitude, Attitude towards Mathematics, Teaching Competency of Mathematics teachers and Mathematical Achievement of eighth class students in Government Elementary Schools affiliated to P.S.E.B.

INFORMATION REGARDING STATUS OF MATHEMATICS TEACHING IN GOVT. ELEMENTARY SCHOOLS

The first objective of the present investigation was to collect the information about different aspects of teaching of Mathematics at elementary level in Punjab. As indicated in chapter 3, the Information Schedule for Status of Mathematics teaching (Self-Constructed) was used by the investigator and information was collected. There were 150 schools and 150 Mathematics teachers in the sample of this study. The various kinds of information have been collected and presented in the following tables. The percentage analysis has been done on the different aspects related to teaching of Mathematics at elementary level in Punjab in order to give meaning to data.

Table

Number of Mathematics Teaching Staff

| District Name | Number of Male Teachers | Number of Female Teachers | Total |
|---------------|-------------------------|---------------------------|-------|
| Hoshiarpur | 26 | 24 | 50 |
| Patiala | 24 | 26 | 50 |
| Mansa | 24 | 26 | 50 |
| Total | 74 | 76 | 150 |
| Percentage | 49.33% | 50.67% | 100% |

This table shows that 49.33% of male mathematics teachers & 50.67% of female mathematics teachers have been included in this study.



Table

Educational Qualifications of Mathematics Teachers

| District Name | B.A. B.Ed. | M.A. B.Ed. | M.A. M.Ed. | M.Phil/Ph.D. |
|---------------|------------|------------|------------|--------------|
| Hoshiarpur | 18 | 13 | 14 | 5 |
| Patiala | 24 | 11 | 12 | 3 |
| Mansa | 28 | 12 | 8 | 2 |
| Total | 70 | 36 | 34 | 10 |
| Percentage | 46.67% | 24% | 22.67% | 6.67% |

This table shows that 46.67% of the teachers were having qualifications of B.A.B.Ed., 24% of the teachers were having qualifications of M.A.B.Ed., 22.67% of the teachers were having qualifications of M.A. M.Ed. and 6.67% of the teachers were having qualifications of M.Phil/Ph.D.

Table

Year of Appointment of Maths Teachers

| District Name | 1996-1999 | 2000-2003 | 2004-2007 | 2008 - 2011 |
|---------------|-----------|-----------|-----------|-------------|
| Hoshiarpur | 15 | 17 | 11 | 7 |
| Patiala | 19 | 16 | 07 | 8 |
| Mansa | 23 | 13 | 10 | 4 |
| Total | 57 | 46 | 28 | 19 |
| Percentage | 38% | 30.67% | 18.67% | 12.67% |

This table shows that 38% of the Govt. Elementary Mathematics Teachers were appointed in the period of 1996-99, 30.67% of the Govt. Elementary Mathematics Teachers were appointed in the period of 2000-2003 while 18.67% of the Govt. Elementary Mathematics Teachers were appointed in the period of 2004-2007 and 12.67% of the Govt. Elementary Mathematics Teachers were appointed in the period of 2008-2011.

Table

Experience (in No. of Years) of Maths Teachers

| District Name | Less than Two Years | Three to Six Years | Seven to Ten Years | More than Ten Years |
|---------------|---------------------|--------------------|--------------------|---------------------|
| Hoshiarpur | 7 | 11 | 15 | 17 |
| Patiala | 8 | 07 | 14 | 21 |
| Mansa | 4 | 10 | 11 | 25 |
| Total | 19 | 28 | 40 | 63 |
| Percentage | 12.67% | 18.67% | 26.67% | 42% |



This table shows that 12.67% of Govt. Elementary Mathematics Teachers were having experience less than two years, 18.67% of Govt. Elementary Mathematics Teachers were having experience between three to six years, 26.67% of Govt. Elementary Mathematics Teachers were having experience between seven to ten years and 42% of Govt. Elementary Mathematics Teachers were having experience of more than ten years.

Table

Classes to Whom Mathematics Teachers are Teaching

| District Name | VI Class | VII Class | VIII Class |
|---------------|----------|-----------|------------|
| Hoshiarpur | 49 | 46 | 49 |
| Patiala | 47 | 47 | 45 |
| Mansa | 47 | 45 | 46 |
| Total | 143 | 138 | 140 |
| Percentage | 95.33% | 92% | 93.33% |

This table shows that 95.33% of Govt. Elementary Mathematics Teachers were teaching VI class, 92% of Govt. Elementary Mathematics Teachers were teaching VII class and 93.33% of Govt. Elementary Mathematics Teachers were teaching VIII class.

Table

Refresher/Orientation Courses Attended

| District Name | 1 | 2 | 3 | 4 | More than Four |
|---------------|--------|--------|--------|-------|----------------|
| Hoshiarpur | 22 | 16 | 8 | 3 | 1 |
| Patiala | 29 | 14 | 4 | 3 | 0 |
| Mansa | 28 | 13 | 7 | 2 | 0 |
| Total | 79 | 43 | 19 | 8 | 1 |
| Percentage | 52.67% | 28.67% | 12.67% | 5.33% | 0.67% |

This table shows that 52.67% of Govt. Elementary Mathematics Teachers had attended only one refresher/orientation course, 28.67% of Govt. Elementary Mathematics Teachers had attended only two refresher/orientation courses, 12.67% of Govt. Elementary Mathematics Teachers had attended three refresher/orientation courses, 5.33% of Govt. Elementary Mathematics Teachers had attended four refresher/orientation courses and 0.67% of Govt. Elementary Mathematics Teachers had attended more than four refresher/orientation courses.



Table

Number of Seminars/Conference/Symposium(related to Mathematics) Attended

| District Name | 1 | 2 | 3 | 4 | More than Four |
|---------------|--------|--------|--------|-------|----------------|
| Hoshiarpur | 12 | 20 | 10 | 5 | 3 |
| Patiala | 13 | 19 | 11 | 5 | 2 |
| Mansa | 18 | 16 | 10 | 4 | 2 |
| Total | 43 | 55 | 31 | 14 | 7 |
| Percentage | 28.67% | 36.67% | 20.67% | 9.33% | 4.67% |

This table shows that 28.67% of Govt. Elementary Mathematics Teachers had attended only one Seminar/Conference/Symposium related to Mathematics, 36.67% of Govt. Elementary Mathematics Teachers had attended two Seminars/Conferences/Symposiums related to Mathematics, 20.67% of Govt. Elementary Mathematics Teachers had attended three Seminars/Conferences/Symposiums related to Mathematics, 9.33% of Govt. Elementary Mathematics Teachers had attended four Seminars/Conferences/Symposiums related to Mathematics and 4.67% of Govt. Elementary Mathematics Teachers had attended only one Seminars/Conferences/Symposiums related to Mathematics.

Table

Number of Books related to Mathematics written

| District Name | 1 | 2 | 3 | 4 | More than Four |
|---------------|---|---|---|---|----------------|
| Hoshiarpur | 0 | 0 | 0 | 0 | 0 |
| Patiala | 0 | 0 | 0 | 0 | 0 |
| Mansa | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 |
| Percentage | 0 | 0 | 0 | 0 | 0 |

This table shows that not even a single Govt. Elementary Mathematics Teachers in this study has written a book related to Mathematics.

Table

Number of Mathematics Teaching Periods in the School

| District Name | 1 Period | 2 Periods | 3 Periods | 4 Periods |
|---------------|----------|-----------|-----------|-----------|
| Hoshiarpur | 0 | 0 | 5 | 45 |
| Patiala | 0 | 0 | 8 | 42 |
| Mansa | 0 | 0 | 10 | 40 |
| Total | 0 | 0 | 23 | 127 |
| Percentage | 0 | 0 | 15.33% | 84.67% |

This table shows that there were 15.33% of the Government Elementary Schools in which three periods of Mathematics were held while 84.67% of the Government Elementary Schools in which four periods of Mathematics were held.



Table

Pupils Strength

| District Name | VI Class | | | VII Class | | | VIII Class | | |
|---------------|----------|--------|-------|-----------|--------|-------|------------|--------|-------|
| | Boys | Girls | Total | Boys | Girls | Total | Boys | Girls | Total |
| Hoshiarpur | 757 | 821 | 1578 | 839 | 944 | 1783 | 918 | 955 | 1873 |
| Patiala | 711 | 778 | 1489 | 752 | 826 | 1578 | 855 | 890 | 1745 |
| Mansa | 537 | 634 | 1171 | 631 | 684 | 1315 | 652 | 680 | 1332 |
| Total | 1993 | 2245 | 4238 | 2144 | 2532 | 4676 | 2426 | 2524 | 4950 |
| Percentage | 47.03% | 52.97% | | 45.85% | 54.15% | | 49.01% | 50.99% | |

This table reveals that there are 47.03% boys & 52.97% girls studying in 6th class, there are 45.85% boys & 54.15% girls studying in 7th class & there are 49.01% boys & 50.99% girls studying in 8th class.

Table

Total Number of Class Rooms Allotted to Different Classes

| District Name | VI Class | | | VII Class | | | VIII Class | | |
|---------------|----------|-------|---|-----------|--------|---|------------|-----|---|
| | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| Hoshiarpur | 43 | 7 | 0 | 42 | 8 | 0 | 37 | 13 | 0 |
| Patiala | 46 | 4 | 0 | 45 | 5 | 0 | 34 | 16 | 0 |
| Mansa | 50 | 0 | 0 | 46 | 4 | 0 | 37 | 13 | 0 |
| Total | 139 | 11 | 0 | 133 | 17 | 0 | 108 | 42 | 0 |
| Percentage | 92.67% | 7.33% | 0 | 88.67% | 11.33% | 0 | 72% | 28% | 0 |

This table reveals that 92.67% of the Government Elementary Schools who have been allotted one room for Mathematics teaching and 7.33% of schools have been allotted two rooms for Mathematics teaching in VI class, while 88.67% of the Government Elementary Schools who have been allotted one room for Mathematics teaching and 11.33% of schools have been allotted two rooms for Mathematics teaching in VII class and 72% of the Government Elementary Schools who have been allotted one room for Mathematics teaching and 28% of schools have been allotted two rooms for Mathematics teaching in VIII class.



Table

Availability of Chalk Board Facility

| District Name | Available | Not Available |
|---------------|-----------|---------------|
| Hoshiarpur | 50 | 0 |
| Patiala | 50 | 0 |
| Mansa | 50 | 0 |
| Total | 150 | 0 |
| Percentage | 100% | 0% |

This table reveals that all the Govt. Elementary schools under study have chalk board facility i.e., there is 100% availability of Chalk Board Facility

Table

Furniture Availability: Number of Schools

| Name of Furniture Items | Hoshiarpur | | | Patiala | | | Mansa | | | Mean Total | Mean %age |
|-------------------------|------------|-----|------|---------|-----|------|-------|-----|------|------------|-----------|
| | VI | VII | VIII | VI | VII | VIII | VI | VII | VIII | | |
| a) Benches | 32 | 35 | 37 | 36 | 35 | 38 | 32 | 33 | 35 | 34.78 | 69.56 |
| b) Tables | 23 | 24 | 26 | 24 | 27 | 25 | 25 | 24 | 27 | 25 | 50.00 |
| c) Chairs | 46 | 49 | 48 | 42 | 46 | 47 | 43 | 44 | 46 | 45.67 | 91.33 |
| d) Almira | 44 | 47 | 42 | 45 | 48 | 49 | 46 | 45 | 47 | 45.89 | 91.78 |
| e) Carpets | 49 | 49 | 50 | 49 | 50 | 49 | 49 | 49 | 49 | 49.22 | 98.44 |

This table shows that 69.56% of Government Elementary Schools have benches facility, 50.00% of Government Elementary Schools have tables facility, 91.33% of Government Elementary Schools have Chairs facility, 91.78% of Government Elementary Schools have Almira facility, and 98.44% of Government Elementary Schools have Carpets facility.

Table

Availability of Mathematics Laboratory Facility

| District Name | Mathematics Laboratory | | Mathematics Corner | |
|---------------|------------------------|---------------|--------------------|---------------|
| | Available | Not Available | Available | Not Available |
| Hoshiarpur | 7 | 43 | 47 | 3 |
| Patiala | 4 | 46 | 45 | 5 |
| Mansa | 0 | 50 | 43 | 7 |
| Total | 11 | 139 | 135 | 15 |
| Percentage | 7.33% | 92.67% | 90.00% | 10.00% |



This table reveals that only 7.33% of Government Elementary Schools have Mathematics Laboratory while 92.67% of Government Elementary Schools do not have Mathematics Laboratory. Also Mathematics Corner is available in 90.00% of Government Elementary Schools while 10.00% of Government Elementary Schools do not have Mathematics Corner.

Table

Availability of Equipments in the Schools

| District Name | Equipments/Apparatus | Charts | Models |
|---------------|----------------------|--------|--------|
| Hoshiarpur | 43 | 48 | 45 |
| Patiala | 39 | 45 | 41 |
| Mansa | 34 | 40 | 39 |
| Total | 116 | 133 | 125 |
| Percentage | 77.33% | 88.67% | 83.33% |

This table reveals that there are 77.37% of Government Elementary Schools in which Equipments/Apparatus related to Mathematics are available, 88.67% of Government Elementary Schools in which Charts related to Mathematics are available and 83.33% of Government Elementary Schools in which Models related to Mathematics are available.

Table

Availability of Library (having Mathematics Books) in the Schools

| District Name | Available | Not Available |
|---------------|-----------|---------------|
| Hoshiarpur | 50 | 0 |
| Patiala | 50 | 0 |
| Mansa | 50 | 0 |
| Total | 150 | 0 |
| Percentage | 100% | 0% |

This table reveals that there is a 100% availability of Library in the Government Elementary Schools. The library contains Mathematics Books also.

Table

Total Number of Books(Related to Mathematics) in the Library

| District Name | Less than 10 | 10 to 20 | 20 to 30 | 30 to 40 | 40 to 50 | More than Fifty |
|---------------|--------------|----------|----------|----------|----------|-----------------|
| Hoshiarpur | 3 | 25 | 17 | 3 | 2 | 0 |
| Patiala | 4 | 28 | 14 | 4 | 0 | 0 |
| Mansa | 8 | 30 | 11 | 1 | 0 | 0 |
| Total | 15 | 83 | 42 | 8 | 2 | 0 |
| Percentage | 10% | 55.33% | 28% | 5.33% | 1.33% | 0 |



This table reveals that there are 10% of Government Elementary Schools which contain less than 10 Mathematics books, 55.33% of Government Elementary Schools which contain 10 to 20 Mathematics books, 28% of Government Elementary Schools which contain 20 to 30 Mathematics books, 5.33% of Government Elementary Schools which contain 30 to 40 Mathematics books while there is only 1.33% of Government Elementary Schools which contain 40 to 50 Mathematics books. There is not even a single Government Elementary Schools which contain more than fifty Mathematics books in the library.

Table

Availability of Separate Room for Mathamatics Library in the Schools

| District Name | Available | Not Available |
|---------------|-----------|---------------|
| Hoshiarpur | 2 | 48 |
| Patiala | 1 | 49 |
| Mansa | 0 | 50 |
| Total | 3 | 147 |
| Percentage | 2% | 98% |

This table reveals that there are only 2% of Government Elementary Schools which contain separate room for Mathematics Library while 98% of Government Elementary Schools do not contain separate room for Mathematics Library.

Table

Availability of Audio Visual Aids

| District Name | Available | Not Available |
|---------------|-----------|---------------|
| Hoshiarpur | 47 | 3 |
| Patiala | 43 | 7 |
| Mansa | 42 | 8 |
| Total | 132 | 18 |
| Percentage | 88% | 12% |

This table reveals that there are 88% of Government Elementary Schools which contain Audio Visual Aids while 12% of Government Elementary Schools do not contain Audio Visual Aids.



Table
Number of Schools having Different Kinds of Audio Visual Aids

| Name of Audio Visual Aids | Hoshiarpur | Patiala | Mansa | Total | Percentage |
|---------------------------|-------------------|-------------------|-------------------|-------|------------|
| | Number of Schools | Number of Schools | Number of Schools | | |
| a) Maps | 47 | 47 | 42 | 136 | 90.67% |
| b) Charts | 49 | 46 | 47 | 142 | 94.67% |
| c) Globes | 49 | 47 | 42 | 138 | 92.00% |
| d) Models | 48 | 44 | 43 | 135 | 90.00% |
| e) Tape-recorder | 29 | 25 | 26 | 80 | 53.33% |
| f) Computer | 50 | 50 | 49 | 149 | 99.33% |

This table reveals that in case of Audio-Visual Aids, 90.67% of the Government Elementary Schools contain Maps, 94.67% of the Government Elementary Schools contain Charts, 92.00% of the Government Elementary Schools contain Globes, 90.00% of the Government Elementary Schools contain Models, 53.33% of the Government Elementary Schools contain Tape Recorder, 99.33% of the Government Elementary Schools contain Computer.

Table
Activities Related to Teaching of Mathematics

| District Name | Mathematics Competition | | Mathematics Quiz | | Extension Lecture Related to Mathematics | | Mathematics Seminar | |
|---------------|-------------------------|---------------|------------------|---------------|--|----------|---------------------|----------|
| | Organized | Not Organized | Organized | Not Organized | Held | Not Held | Held | Not Held |
| Hoshiarpur | 43 | 7 | 45 | 5 | 4 | 46 | 5 | 45 |
| Patiala | 44 | 6 | 44 | 6 | 3 | 47 | 4 | 46 |
| Mansa | 41 | 9 | 46 | 4 | 3 | 47 | 4 | 46 |
| Total | 128 | 22 | 135 | 15 | 10 | 140 | 13 | 137 |
| %age | 85.33% | 14.67% | 90% | 10% | 6.67% | 93.33% | 8.67% | 91.33% |

This table reveals the different activities related to Mathematics. 85.33% of Government Elementary Schools organized Mathematics Competition while 14.67% of Government Elementary Schools did not organize Mathematics Competition. The 90% of Government Elementary Schools organized Mathematics Quiz while 10% of Government Elementary Schools did not organize Mathematics Quiz. The Extension Lecture Related to Mathematics was held in only 6.67% of Government Elementary Schools while it was not held in 93.33% of Government Elementary Schools. Mathematics



Seminar was held in 8.67% of Government Elementary Schools while it was not held in 91.33% of Government Elementary Schools.

Attitude Towards Mathematics of Male And Female Mathematics Teachers of Govt. Elementary Schools

The **third hypothesis** states that there is no significant difference in the attitude towards Mathematics of male and female Mathematics teachers of elementary schools. To test this hypothesis, the teaching aptitude of male and female teachers was measured. Mean, Median, Mode and S.D. have been calculated and given in table

Table
Comparison of Attitude Towards Mathematics of Male And Female Mathematics Teachers of Govt. Elementary Schools

| Gender | N | Mean | SD | t-ratio | Significance |
|--------|----|--------|-------|---------|-----------------------|
| Male | 74 | 143.45 | 30.32 | 0.533 | Not significant at 5% |
| Female | 76 | 146.23 | 33.41 | | |

The table reveals that mean scores of Attitude towards mathematics of male govt. elementary school teachers is 143.45 while the mean value of Attitude towards mathematics of Female Mathematics Teachers of Govt. Elementary Schools is 146.23. The degrees of freedom are 148. The table t-value is 1.97 at 5% and 2.59 at 1%. The calculated t-value is 0.533 which is less than table t-value. Hence the null hypothesis "*There is no significant difference in the attitude towards Mathematics of male and female Mathematics teachers of elementary schools*" is accepted. It may be concluded that Male and Female Mathematics Teachers of Govt. Elementary Schools do not differ significantly in Attitude towards Mathematics with respect to their gender.

Attitude Towards Mathematics of Urban And Rural Mathematics Teachers of Govt. Elementary Schools

The **fourth Hypothesis** states that Urban and rural Mathematics teachers of elementary schools do not differ significantly in the attitude towards Mathematics. To test this hypothesis, the attitude towards Mathematics of urban and rural teachers was measured. Mean, Median, Mode and S.D. have been calculated and given in table below



Table

Comparison of Attitude Towards Mathematics of Urban And Rural Mathematics Teachers of Govt. Elementary Schools

| Gender | N | Mean | SD | t-ratio | Significance |
|--------|----|--------|-------|---------|-----------------------|
| Urban | 73 | 141.32 | 30.24 | 1.349 | Not significant at 5% |
| Rural | 77 | 148.36 | 33.48 | | |

The table reveals that mean scores of Attitude towards mathematics of Urban govt. elementary school teachers is 141.32 while the mean value of Attitude towards mathematics of Rural Mathematics Teachers of Govt. Elementary Schools is 148.36. The degrees of freedom are 148. The table t-value is 1.97 at 5% and 2.59 at 1%. The calculated t-value is 1.349 which is less than table t-value. (The two tailed probability is 0.1794.) Hence the difference is not significant at 0.05 level. Hence the Hypothesis, "*Urban and rural Mathematics teachers of elementary schools do not differ significantly in the attitude towards Mathematics*" is accepted. This shows that Mathematics Teachers of Govt. Elementary Schools do not differ significantly in attitude towards Mathematics with respect to their location.

RESULTS

On the basis of analysis of the data and interpretation of results of the present study, obtained through various statistical means, the following results have been obtained:-

1. There is no significant difference in the Teaching Aptitude of Male and Female Government Elementary School Mathematics teachers.
2. There is no significant difference in the Teaching Aptitude of Rural and Urban Government Elementary School Mathematics teachers.
3. There is no significant difference in the attitude towards Mathematics of Male and Female Government Elementary School Mathematics teachers.



4. There is no significant difference in the attitude towards Mathematics of Rural and Urban Government Elementary School Mathematics teachers.
5. There is no significant difference in the Teaching Competency of Male and Female Government Elementary School Mathematics teachers.
6. There is no significant difference in the Teaching Competency of Rural and Urban Government Elementary School Mathematics teachers.
7. There is significant difference in the Mathematical Achievement of Male and Female students. Girls have higher achievement in Mathematics as compared to boys.
8. There is a significant difference in the Mathematical Achievement of Urban and Rural students of Government Elementary Schools. Urban Students have higher achievement in Mathematics as compared to Rural Students.
9. There is a significant difference in the Mathematical Achievement of

(i) General and Backward class

(ii) General and Scheduled caste

(iii) Backward class and Scheduled castes.

General Students have higher achievement in Mathematics as compared to SC and BC students. Also SC have higher achievement in Mathematics as compared to BC.

EDUCATIONAL IMPLICATIONS

The results of present study have shown that Mathematics teachers of Government elementary schools have low teaching aptitude, poor attitude towards Mathematics and low teaching competency. Different programmes should be organized by DIETs as well as Governments to increase the



teaching aptitude, positive attitude towards Mathematics and teaching competency among Elementary School Mathematics teachers.

The Mathematical achievements of elementary school students is very low. It pointed towards the mathematical deficiency Syndrome. Every child in our country has right to education. Right to education have become fundamental right. Students should be given all facilities so that their mathematical achievement can be improved. In my study, I have observed that there are many govt. elementary schools in which English and S.St. teachers are teaching Mathematics to the students. That may also be one of the many factors for poor Mathematical achievement of students. It is suggested that there should be recruitment of regular Mathematics teachers in Govt. Elementary schools. Opportunities should be provided to Govt. Elementary School Mathematics teachers to attend refresher/orientation courses. There should be an emphasis to provide more opportunities to Govt. Elementary School Mathematics teachers to participate in National, Regional and State level Seminars, Conferences and Symposiums. Govt. Elementary Mathematics Teachers should be provided training to prepare appropriate study material related to Mathematics for the students. Mathematics teachers should also be motivated to write books and modules in Mathematics for elementary school students. Govt. Elementary Mathematics Teachers should be provided training to develop tests in Mathematics and conduct Action Research so that learning difficulties of Elementary School students in Mathematics may be diagnosed.

Although there is 100% availability of Chalk Board Facility in all govt. elementary schools under study, there should be provision for Mathematics rooms for all the govt. elementary schools. Students when taught Mathematics outside the classrooms do not learn properly. The educational administration should evolve strategies and techniques by way of giving exposures to good Mathematics teaching and realize them the outcomes of such teaching. The structure of curriculum, books and extra curricular activities should be improved in educational institutes. The teacher-pupil ratio should be 1:40 which will help to increase the Mathematical achievements of students. The teachers are provided money



for purchasing teaching learning materials (TLM) to enhance the learning achievements of students under SSA programmes. This will be helpful to increase the learning achievements of students. The SSA authorities should not be administrative oriented rather it should be human oriented by giving due respect to teachers.

CONCLUSIONS

Good Teaching Aptitude, Positive Attitude towards Mathematics, Teaching Competency are imperative for teachers as the means to fulfill the ultimate aim of bringing positive and desired change in the cognitive and affective domain of the students and hence improving their Mathematical achievement. All the teaching skills are interrelated and influence one another. The way teaching skills are learned and practiced in teacher training institutes remain different from the style in which teachers use them every day in the classroom. The difference between the two needs to be minimized. Various courses and programmes should be organized to increase the teaching aptitude and positive attitude towards Mathematics among Elementary School Mathematics teachers. Effectiveness of a Mathematics teacher's teaching competency is determined not by number of skills the teacher uses in the class, but depends on how these skills are interwoven, adjusted and refashioned to make pedagogy an effective tool in putting students in the mould of active learners, explorers and thinkers.

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THE IMPACT OF GLOBALIZATION ON LAND USE PATTERN – A STUDY IN THREE DIFFERENT LOCALIZED AREAS

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Introduction:

The process of globalization has now become one of the most significant issues in the economics policy framework in India. There are a number of reasons why the Indian policy makers wish to consider the question of globalization with great urgency. Government policy is undergoing a sea change both on account of shifts on ideological account as well as economics considerations. Of late, it has been recognized that in an agrarian based economy like India, particularly during the process of globalization in agriculture, agrarian relations and land holding structure play an important role in influencing socio-economic status of the farmers. Since a number of research studies of the early globalization period have shown that benefits in agriculture sector is not equally spread among all the regions of our country. Infact in Andhra Pradesh, there is an inequality in the resource use among the three regions of the state i.e. Andhra, Telangana and Rayalaseema, inter regional inequality is visible. This trend is also observed among various categories of farmers such as big, medium, small and marginal farmers.

Keeping the above factors in mind, an attempt is made in this study to examine the different aspects involved in understanding the land holding structure in three localized villages covering Andhra, Rayalaseema and Telangana regions of Andhra Pradesh in the process of globalization.

The data were collected both from primary and secondary sources. The primary data were gathered through administering a structure questionnaire to the different categories of farmers. The secondary data were collected from various official records ranging from selected villages



to districts and incorporated in the study at appropriate places. The questionnaire was administered during the Kharif and Rabi seasons. Information elicited on socio-economic background of the respondents; land holding and cropping pattern agrarian relations, input used and yield of various selected crops and farm income etc during the globalization period i.e. 2006 to 2010

Selection of the Study Area and the Respondents:

The study was conducted in three irrigated areas representing three different regions of Andhra Pradesh, i.e. Krishna District of Andhra region, Kurnool District of Rayalaseema Region and Karimnagar District of Telangana Region. From each district, two mandals were selected and further from each mandal four villages were taken. Villages selected from Karimnagar district are Porandla and Morapally from Jagtial Mandal, Vangapally and Kannuru of Kamalapur Mandal. Krishna district of Andhra region represented by two mandals such as Kampala Gudem and Thiruvuru. From Kampalagudem villages selected for the study are Dundiralapadu and Vutukuru. Whereas Komireddypally and Yarramadu villages represented from Thiruvuru Mandal. In the case of Kurnool district, villages selected for the study are Munagalapadu and Pulluru of Miduturu Mandal and Belogallu, Nagallapuram villages are from Kodumuru Mandal. An altogether 300 respondents representing all the categories and caste groups were selected by adopting random sampling techniques.

As our study was confined to localized areas of three major districts, agriculture in the main occupation to all the farmers and their livelihood also depend upon the development of agriculture. However, farmers are also depending upon subsidiary occupations simultaneously to get some extra income. We have in the field that some of the weaker sections are working as agriculture labours, casual labourers, and rural artisans to eke out their living. It obviously reflects that their limited land is not fetching much income to maintain their minimum standard of living. Particularly in Karimnagar more than 70% of them also working as casual labours. On the other, majority of the big farmers in Andhra region are not having any subsidiary occupations and excessively depending upon agriculture itself



and major part of the land is receiving assured of water from well developed canals.

Table-1
Land Particulars of the Respondents

| Dist | Karimnagar | | | |
|---------|-------------|---------------|------------|------------|
| | Status | No of Farmers | Own lands | Leased |
| In | | | | Out |
| Margi F | 28(28.00) | 49(11.83) | - | - |
| SF | 27(27.00) | 107(25.84) | 14(35.89) | - |
| Med. F | 33(33.00) | 133(32.12) | 18(46.15) | 14(45.16) |
| BF | 12(12.00) | 125(30.19) | 07(17.94) | 17(54.83) |
| Total | 100(100.00) | 414(100.00) | 39(100.00) | 31(100.00) |
| Krishna | | | | |
| Marg. F | 22(22.00) | 42(8.91) | 05(8.06) | - |
| SF | 31(31.00) | 137(29.08) | 17(27.41) | - |
| Med. F | 36(36.00) | 153(32.48) | 25(40.32) | 09(42.85) |
| BF | 11(11.00) | 139(29.51) | 15(24.19) | 12(57.14) |
| Total | 100(100.00) | 471(100.00) | 62(100.00) | 21(100.00) |
| Kurnool | | | | |
| Marg. F | 23(23.00) | 55(13.88) | 05(16.12) | - |
| SF | 25(25.00) | 67(16.91) | 21(67.74) | - |
| Med. F | 43(43.00) | 164(41.41) | - | 07(43.75) |
| BF | 09(09.00) | 110(27.77) | 05(16.12) | 09(56.25) |
| Total | 100(100.00) | 396(100.00) | 31(100.00) | 16(100.00) |

*Source: Field Study:

**Bracket indicate the Percentage

Table (1) reflects that a larger area of the respondents of Krishna district in Andhra region is localized i.e., 471 acres followed by Karimnagar and Kurnool districts i.e., 414 and 396 acres respectively. Nearly 80% of the total land is localized in Krishna district of Andhra region. Further it is observed that in all the study areas, average size of the land holding is positively associated with farm size particularly, the percentage of the cultivated land under small and marginal farmers is more in all the areas compared to that of medium and big farmers. It means small farmer's in spite of their limited sources could bring more land under cultivation.



Table-2
 Cultivated Land Particulars of the Respondents

| Dist | Karimnagar | | | |
|---------|--------------|--------------|---------------|-------------|
| Status | Dry Land | Wet Land | Irrigated Dry | Waste Land |
| MF | 14 (09.58) | 10 (07.81) | 25 (13.96) | - |
| SF | 49 (33.56) | 34 (18.99) | 38 (21.22) | - |
| Med.F | 48 (32.87) | 43 (33.59) | 60 (33.51) | 14 (45.16) |
| BF | 35 (23.97) | 41(32.03) | 56 (31.28) | 17 (54.84) |
| Total | 146 (100.00) | 128 (100.00) | 179 (100.00) | 31 (100.00) |
| Krishna | | | | |
| MF | 09 (5.59) | 06 (4.02) | 32 (13.61) | - |
| SF | 53 (32.91) | 44 (29.53) | 57 (24.25) | - |
| Med.F | 57 (35.40) | 52 (34.89) | 69 (29.36) | 9 (100.00) |
| BF | 42 (26.08) | 47 (31.54) | 77 (27.65) | - |
| Total | 161 (100.00) | 149 (100.00) | 235 (100.00) | 09 (100.00) |
| Kurnool | | | | |
| MF | 29 (19.07) | 14 (12.72) | 17 (10.30) | - |
| SF | 32 (21.05) | 26 (23.63) | 30 (18.18) | - |
| Med.F | 73 (48.02) | 39 (35.45) | 52 (31.51) | 07 (43.75) |
| BF | 18 (11.84) | 31 (28.18) | 66 (40.00) | 09 (56.25) |
| Total | 152 (100.00) | 110 (100.00) | 165 (100.00) | 16 (100.00) |

*Source: Field Study;

**Bracket indicate the Percentage

Table (2) shows that the average size of land holding area wise separately. In the case of wet land, the average size of land is not even 6 acres which obviously indicates that a longer proportion of the area under these districts are localized through all the localized are not receiving water. Further average size of the wet land is very less in Karimnagar and Kurnool districts. In case of irrigated dry land, the Krishna district of Andhra maintain is the highly performance land i.e., 235 acres followed by Telangana and Rayalaseema regions i.e. 179 and 165 acres respectively.



Table-3
Sources of Irrigation of the Respondents

| Dist | Karimnagar | | | | | Total |
|----------------|-------------|------------|-------------|-------------|--------------|-------------|
| | Wells | Tube Wells | Tanks | Canals | Other Source | |
| Marg F | 11(8.73) | 03(10.00) | 06(7.69) | 22(12.79) | 07(14.89) | 49(10.81) |
| SF | 35(27.77) | 05(16.66) | 23(29.48) | 49(28.48) | 09(19.14) | 121(26.71) |
| Med.F | 42(33.33) | 8(26.66) | 30(38.46) | 58(33.72) | 13(27.65) | 151(33.33) |
| BF | 38(30.15) | 14(46.66) | 19(24.35) | 43(25.00) | 18(38.29) | 132(29.13) |
| Total | 126(100.00) | 30(100.00) | 78(100.00) | 172(100.00) | 47(100.00) | 453(100.00) |
| Krishna | | | | | | |
| Marg F | 06(6.12) | - | 12(9.23) | 29(11.11) | - | 47(8.81) |
| SF | 25(25.51) | 02(12.50) | 37(28.46) | 72(27.58) | 18(64.28) | 154(28.89) |
| Med.F | 35(35.71) | 08(50.00) | 42(32.30) | 89(34.09) | 04(14.28) | 178(33.39) |
| BF | 32(32.65) | 06(37.50) | 39(30.00) | 71(27.20) | 06(21.42) | 154(28.89) |
| Total | 98(100.00) | 16(100.00) | 130(100.00) | 261(100.00) | 28(100.00) | 533(100.00) |
| Kurnool | | | | | | |
| Marg F | 18(11.11) | 11(16.17) | 10(11.11) | 14(20.89) | 07(17.50) | 60(14.05) |
| SF | 38(23.45) | 15(22.05) | 17(18.88) | 10(14.92) | 08(20.00) | 88(20.60) |
| Med.F | 71(43.82) | 20(29.41) | 36(40.00) | 25(37.31) | 12(30.00) | 164(38.40) |
| BF | 35(31.60) | 22(32.35) | 27(30.00) | 18(26.86) | 13(32.50) | 115(26.93) |
| Total | 162(100.00) | 68(100.00) | 90(100.00) | 67(100.00) | 40(100.00) | 427(100.00) |

*Source: Field Study:

**Bracket indicate the Percentage

The table (3) shows that the sources of irrigations such as wells, tube wells, tanks, canals and other sources. Krishna district of Andhra region is highly endowed where respondents possess 172 acres of land under canals, in Karimnagar, 261 acres and 67 acres for Kurnool. It clearly shows the agriculture cultivation is to be made through canal in Krishna districts.



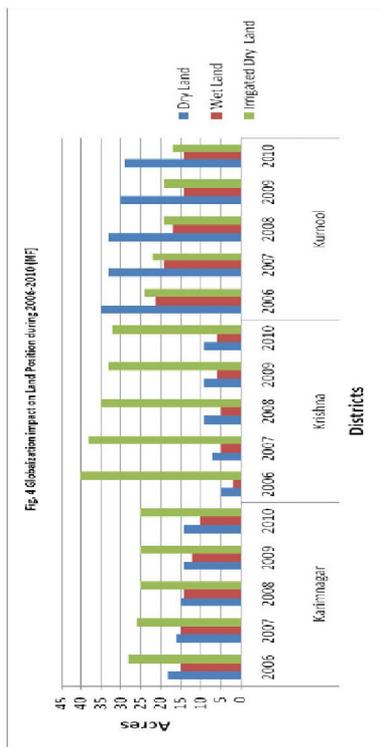
Table-4
 Globalization impact on Land Position during 2006-2010 (MIF)

| Dist | Karimnagar | | | | | Krishna | | | | | Kurnool | | | | |
|--------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | 2006 | 2007 | 2008 | 2009 | 2010 | 2006 | 2007 | 2008 | 2009 | 2010 | 2006 | 2007 | 2008 | 2009 | 2010 |
| Type of Land | | | | | | | | | | | | | | | |
| Dry Land | 18 (29.50) | 16 (28.07) | 15 (27.77) | 14 (27.45) | 14 (28.57) | 5 (10.63) | 7 (14.00) | 9 (18.36) | 9 (18.75) | 9 (21.42) | 30 (49.18) | 33 (55.93) | 28 (51.85) | 26 (45.61) | 29 (52.72) |
| Wet Land | 15 (24.59) | 15 (26.31) | 14 (25.92) | 12 (23.52) | 10 (20.40) | 2 (4.25) | 5 (10.00) | 5 (10.20) | 6 (12.5) | 6 (14.28) | 21 (34.42) | 16 (27.11) | 14 (25.92) | 12 (21.05) | 14 (25.45) |
| Irrigated Dry Land | 28 (45.90) | 26 (45.61) | 25 (46.29) | 25 (49.01) | 25 (51.02) | 40 (85.10) | 38 (76.00) | 35 (71.42) | 33 (68.75) | 32 (76.19) | 10 (16.39) | 10 (16.94) | 12 (22.22) | 19 (33.33) | 17 (30.90) |
| total | 61 (100.00) | 57 (100.00) | 54 (100.00) | 51 (100.00) | 49 (100.00) | 47 (100.00) | 50 (100.00) | 49 (100.00) | 48 (100.00) | 42 (100.00) | 61 (100.00) | 59 (100.00) | 54 (100.00) | 57 (100.00) | 55 (100.00) |

In Acres

*Source: Field Study:

**Bracket indicate the Percentage





Land is an important factor of products in agrarian base like India socio-economic status of the rural folk is revolve around the distributions of various categories of land such as wet, irrigated dry and dry land. Wet land is mostly depends on the tanks, wells and other regular assured water –where as irrigated dry land usually depend upon canal distribution along with its distributer and field channels Dry land is mostly depends upon on the natural rain.

It has been proved by many research studies that there is extreme inequality is visible in relatively backward areas. In fact there is not only disparity exist in the land position but also farm income which is ultimately acts as a harbinger of prosperity. Hence we have collected the data on the land positions during the year 2006 to 2010 among then various categories of farmers in the study areas of Karimnagar, Krishna and Kurnool districts representing the Telangana, Andhra and Rayalaseema regions respectively.

Table (4) indicates the land position of marginal farmers during the period 2006-2010. It is interesting to note that irrigated dry land is found to be more than 70% in highly developed region where as in relatively lesser developing region of Telangana region it was 51%. It is shocking to note that in Rayalaseema region irrigated dry land is not even crossed 31%. Though wet land is visible in Telangana region, but its impact for 2010 onwards start declining as some of the wet land is converted into irrigated dry land. As a result the marginal farmers of Telangana region are neither getting the advantage of wet land nor irrigated dry land. Most of the distributer and field channels which are supplying the canal water to



the marginal farmers in depleted conditions. Hence marginal farmers of Telangana regions land position has declined from 61 acres to 49 acres. The strong reasons might be that most of them must have sold the limited land to eke out their living. Thus the impact of globalization has negative effect on marginal farmers as they disposed their land to small, medium or big farmers.

Bar diagram depicts that land position of marginal farmers in Telangana region has not reached even 30 acres of land for the past five years. But in highly developed Andhra region, could able to possess 40 acres of land even in the initial stages of globalization period itself. i.e. 2006. It means that the importance of globalization in agriculture sector has come to know even to marginal farmers of Andhra region in the beginning itself.

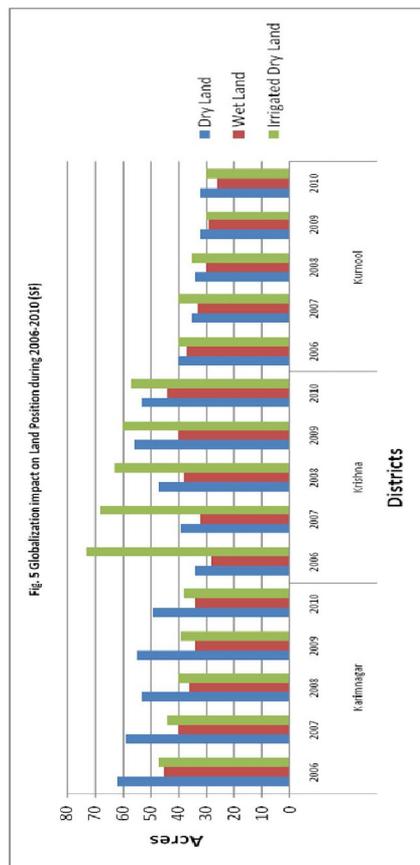


Table-5
 Globalization impact on Land Position during 2006-2010 (SF)

| Dist | Karimnagar | | | | | Krishna | | | | | Kurnool | | | | |
|--------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|
| | 2006 | 2007 | 2008 | 2009 | 2010 | 2006 | 2007 | 2008 | 2009 | 2010 | 2006 | 2007 | 2008 | 2009 | 2010 |
| Type of Land | In Acres | | | | | | | | | | | | | | |
| Dry Land | 62 (10.25) | 59 (41.25) | 53 (41.08) | 55 (42.96) | 49 (40.49) | 34 (25.18) | 39 (28.05) | 47 (31.75) | 56 (35.89) | 53 (34.41) | 40 (34.18) | 35 (32.40) | 34 (34.69) | 32 (35.16) | 32 (36.36) |
| Wet Land | 45 (29.22) | 40 (27.97) | 36 (27.90) | 34 (26.56) | 34 (28.09) | 28 (20.74) | 32 (23.02) | 38 (25.67) | 40 (25.64) | 44 (28.57) | 37 (31.62) | 33 (30.55) | 29 (29.59) | 29 (31.86) | 26 (29.54) |
| Irrigated | 47 (30.51) | 44 (30.76) | 40 (31.00) | 39 (30.46) | 38 (31.40) | 73 (54.07) | 68 (48.92) | 63 (42.56) | 60 (38.46) | 57 (37.01) | 40 (34.18) | 40 (37.03) | 35 (35.71) | 30 (32.96) | 30 (34.09) |
| Dry Land | 154 (100.00) | 143 (100.00) | 129 (100.00) | 128 (100.00) | 121 (100.00) | 135 (100.00) | 139 (100.00) | 148 (100.00) | 156 (100.00) | 154 (100.00) | 117 (100.00) | 108 (100.00) | 98 (100.00) | 91 (100.00) | 88 (100.00) |

*Source: Field Study;

**Bracket indicate the Percentage





Similar attempt was made to find out the land particulars in small farmers category and presented in the table (5). It is observed from the field studies that small farmers in the Andhra regions started acquiring their land after globalization era i.e., the land position of small farmers in Andhra region during 2006 was 135 acres only but it has gone up to the extent of 154 acres. The situation is quite opposite in Rayalaseema and Telangana region i.e, in Telangana region total land possessed by these small farmers declined from these 154 acres to 121 acres & in Rayalaseema region 117 acre to 88 acres. Thus it obviously indicates that globalization is acting as a spring board in Andhra region as small farmers improving their land position.

When we look at source of irrigation separately, irrigated dry land in the small farmers category is to the extent of 31% whereas in Andhra region it is 54%. Similarly wet land position is in increasing trend in Andhra region from 20% to 28%. On the other dry land position is visible more in Telangana region i.e. is 41% followed by Rayalaseema region to the extent of 36%. Thus the analysis of land position of small farmers reflects that small farmers in Andhra region are acquiring land to receive the benefit of globalization in agricultural sector. In other words changing agrarian relations is more in the highly developed regions when the process of globalization perculating in the agricultural sector.

The bar diagram (5) reflects that small farmers could acquire more irrigated dry land in Andhra region (i.e. more than 70 acres of land) compared to that of even wet land, which we could see to the maximum extent of 50 acres.

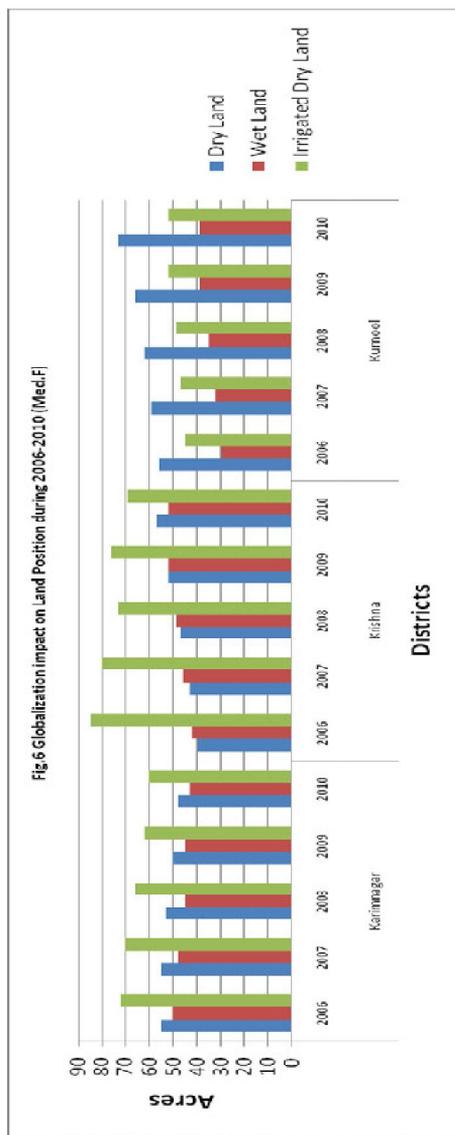


Table-6
Globalization impact on Land Position during 2006-2010 (Med.F)

| Dist Type of Land | Karrimnagar | | | | | Krishna | | | | | Kurnool | | | | |
|-------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | 2006 | 2007 | 2008 | 2009 | 2010 | 2006 | 2007 | 2008 | 2009 | 2010 | 2006 | 2007 | 2008 | 2009 | 2010 |
| Dry Land | 55 (31.79) | 55 (31.79) | 53 (32.31) | 50 (31.84) | 48 (31.78) | 40 (23.95) | 43 (25.44) | 47 (27.81) | 49 (28.65) | 57 (32.57) | 56 (42.74) | 59 (42.75) | 62 (42.46) | 66 (42.03) | 73 (44.51) |
| Wet Land | 50 (28.24) | 48 (27.74) | 45 (27.43) | 45 (28.66) | 43 (28.47) | 42 (25.14) | 45 (27.21) | 49 (28.99) | 52 (30.40) | 52 (29.71) | 30 (22.90) | 32 (23.18) | 35 (23.97) | 39 (24.84) | 39 (23.78) |
| Irrigated Dry Land | 72 (40.67) | 70 (40.46) | 66 (39.49) | 62 (39.49) | 60 (39.73) | 85 (50.89) | 83 (47.33) | 73 (43.19) | 70 (40.93) | 66 (37.71) | 45 (34.35) | 47 (34.05) | 49 (33.56) | 52 (33.12) | 52 (31.70) |
| total | 177 (100.00) | 173 (100.00) | 164 (100.00) | 157 (100.00) | 151 (100.00) | 167 (100.00) | 169 (100.00) | 169 (100.00) | 171 (100.00) | 175 (100.00) | 131 (100.00) | 138 (100.00) | 146 (100.00) | 157 (100.00) | 164 (100.00) |

*Source: Field Study:

**Bracket indicate the Percentage





It has been observed in field studies that among all the farmers, the medium farmers the categories are more dashing in nature in Andhra region but not so entrepreneurial in relatively backward region of Rayalaseema and Telangana regions. It is evident from the table (6) that there is an increasing trend in the total land position of the medium farmers from 2006-2010. But in Telangana region it has down to 151acre.

Area wise analysis has shown that in Telangana region, irrigated dry land covers to extent of 40% of land, wet land 28% and dry land 31% but in Andhra region irrigated dry land is found to be 38% and wet land around 30%. Thus medium farmers in this region could receive the benefit of regular supply of water to the extent of 80% to their land either by canals are tanks and other regular supply of water for which they are having the natural advantage of water. Thus the impact of globalization is more visible in the medium farmer's categories of Andhra region than that of other two backward regions.

Bar diagram (6) shows that the irrigated dry land acquired by medium farmers in Andhra region is more than double to that of wet land which obviously indicates how land source of water play a crucial role in influencing production and productivity in the era of globalization.



Table-7
 Globalization impact on Land Position during 2006-2010 (BF)

| Dist | Karimnagar | | | | | Krishna | | | | | Kurnool | | | | |
|--------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | 2006 | 2007 | 2008 | 2009 | 2010 | 2006 | 2007 | 2008 | 2009 | 2010 | 2006 | 2007 | 2008 | 2009 | 2010 |
| Type of Land | | | | | | | | | | | | | | | |
| Dry Land | 48 (29.62) | 43 (28.28) | 40 (28.77) | 35 (26.11) | 35 (26.51) | 36 (25.22) | 38 (24.35) | 40 (25.31) | 42 (25.60) | 42 (25.30) | 34 (22.36) | 30 (21.58) | 26 (20.15) | 18 (15.38) | 18 (15.65) |
| Wet Land | 52 (32.09) | 49 (32.23) | 46 (33.09) | 43 (32.08) | 41 (31.06) | 30 (19.35) | 35 (22.43) | 39 (24.68) | 45 (27.43) | 47 (28.31) | 43 (28.28) | 39 (28.05) | 35 (27.13) | 33 (28.20) | 31 (26.95) |
| Irrigated | | | | | | | | | | | | | | | |
| Dry Land | 62 (38.27) | 60 (39.47) | 53 (38.12) | 56 (41.79) | 56 (42.42) | 89 (57.41) | 83 (53.20) | 79 (50.00) | 77 (46.95) | 77 (46.38) | 75 (49.34) | 70 (50.35) | 68 (52.71) | 66 (56.41) | 66 (57.39) |
| total | 162 (100.00) | 152 (100.00) | 139 (100.00) | 134 (100.00) | 132 (100.00) | 155 (100.00) | 156 (100.00) | 158 (100.00) | 164 (100.00) | 166 (100.00) | 152 (100.00) | 139 (100.00) | 129 (100.00) | 117 (100.00) | 115 (100.00) |

*Source: Field Study:

**Bracket indicate the Percentage

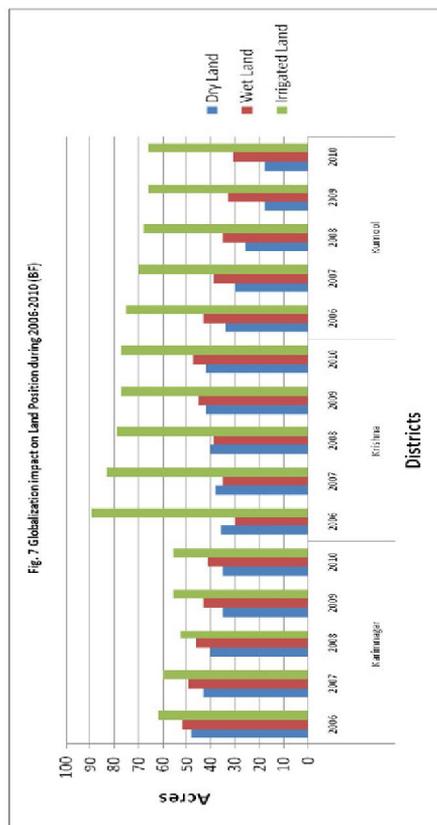




Table (7) reflects the land positions of big farmers in our study areas and it is shocking to note that even big farmers of Telangana region has disposed their land or given their land on lease out. It reflected from the above table the total land position of big farmers along 162 acres in 2006 but found to be only 132 acres in 2010. Similarly in Rayalaseema regions also our sample farmers had 152 acres of land but the land position has declined to the extent of 115 acres in 2010. It means even the big farmers of these two regions are not giving much importance to the land as their land is not getting good benefits from the globalization effect on the other hand land position in Andhra region was found to be in increasing trend from 155 acres in 2006 to 166 acres in 2010. Particularly irrigated dry land and wet land constitute more than 75% of their land. Hence the study has revealed the very interesting observations that the highly developed region which posses most fertile land, the percentage of cultivated land of small farmers is more than that of big farmers.

Bar diagram (7) reveals that the demand for irrigated dry land by big farmers in Andhra region was found to be more than 80 acres in 2006 itself. In other words, big farmers who were only 11 in number in our sample size could prefer more irrigated dry land to get advantage from the process of globalization.

Thus, land holding pattern of the respondents in the study areas of Krishna district of Andhra region, Karimnagar district of Telangana and Kurnool of Rayalaseema region reflects fast changing in agrarian relation in agriculture is taking place only in Andhra region and the effect of globalization in agriculture is penetrating much on land use pattern. But the effect of globalization is not gaining much significance in the land use pattern in many villages of relatively backward regions of Telangana and Rayalaseema regions. In other words Globalization effect in agriculture sector in this "Rice bowl state" is leading to inter regional disparities and gap of intra farmers is widening. The study suggests that effective utilization of canal water proper maintenance of distributaries and field channels in the relatively backward areas has to be taken care on war footing to reduce the gap and for even distribution of benefits of globalization on land use pattern even in the relatively backward regions.



DUAL ROLES OF WOMEN ADMINISTRATORS AT DECISION MAKING LEVEL

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*“Education is it to teach behavior,
Benevolence or a bait to benefit for a beseeched birth.
It is shaping of ones own personality, perfection of thoughts and actions
Yes, education is the light which glows ones way with precious guidance
hoping to churn you into a better person.
Education does not compel, but gives you a choice in life to benefit yourself and
through you the society.”*

Introduction:

Education has been regarded as a significant instrument for changing women's subjugated position in the society, it not only develops the personality and capabilities of women, but also qualifies them to fulfill certain economic, political and cultural functions and thereby improves their socio-economic status. A direct expectation from educational development in a society is the reduction of gender bias. Such a goal was therefore included as a basic right of every human being in the universal declaration of human rights.

According to my observation after consulting randomly selected educational Administrators and officers at decision making level of autonomous and government run institutions. It is found that there are two main factors which are primarily acting as barriers for their effective leadership and empowerment.

Women exercising free will and independent decision – making are portrayed as alien species in our plays the express in tribune Pakistan.



1. Lack of formal training in women administrators with the required skills as decision makers and the much needed confidence in them to handle the challenging post.
2. The influence of other societal structures like - their responsibilities towards their families, following social norms and maintaining their dignity are also the main reasons for the thin representation of women administrators at the decision making level.

OBSERVATION:

It is well known fact that to reach the top administrators position, experience plays a vital role. One is automatically promoted to higher positions in the administration after putting up service for a fixed period, here only the factor of service put up is taken into consideration but not the capabilities, or the decision making skills. Which are very vital for women administrators to become successful as "Decision Makers"

Women by nature or due to self perception of their roles in the social context because of stereotyped bringing up, do not take interest in matters involving technicalities, legalities or procedures for carrying out certain tasks. This keeps them unaware and unexposed to many technical aspects of administrative procedures which may become a serious constraint in administering effectively and efficiently.

The hours of the working pattern, over time, the location of work and commuting times make it difficult for working women to meet the dual expectations of their families and as work- roles, administrators giving rise to role conflict. Hence the women administrators at the decision making. Level feel the stress and burden of the dual roleship which effects their working capabilities.

Suggestions:

Women administrators to fulfill their dual roles at home and as well as at work place should systematically balance their work load by inheriting certain skills which would enable them to be effective home makers and also administrators at decision making level.



As home makers women by nature are to taught to discharges their duties in whatever mould they are place in say it, as a mother, daughter, sister so on this sought of training at home is seven women right from their young are by other elderly women in the family. Hence the role of a women as a home maker does not require any special training in the Indian context as it is imparted to them in the family along with there up bringing.

But before taking the responsibilities as administrators formal trainings assessment and self evaluating programs should be convicted for women administrators at decision making levels which would give them the necessary scope and confidence in learning and discharging their duties successfully. But without sufficient training in administrate skills women unconsciously silence a part of themselves and may not be in a position to utilize their capabilities to the core.

Hence, women administrators at decision making level should necessarily be equipped with the following skills.

- Human Skills
- Technical Skills
- Time - Management Skills

Human Skills:

Human Skills include effective communication skills, i.e. to be assertive and yet communicative, which is very important for women administrators at decision making level. Showing Concern for the staff, like sharing their problems, knowing about strengths and weakness etc., helps to develop better human relationship which essential for creating a healthy and a harmonious environment. As said by Hunsakar & Hunsaker, 1991 "Women administrators in education will be expected to have good communication and interpersonal skill, the ability to listen and relate to others and be capable of working in self-managing teams".

Technical skills

Looking at the functions to be performed by educational administrator Performed by educational administrators women



administrators require knowledge and understanding of the various processes, procedures, method, approaches and techniques required in performing the task of administration, like procedures in decision making, delegation of work, methods and approaches used in solving different problems, official procedures, rules, ordinances and statues their implementation and also the ability to understand and interpret relevant information and data so as think creatively and to identify opportunities the technical skills which would help them to run the educational intuitions programmed planning, group and peer decision making, balanced judgment and disciplined administration.

Time Management Skills:

The Central theme of time management skills is simple but obvious concept shift in focus, concentrate on results, and not on being busy.

Present day women administrators have dual roes to fulfill, is very important that they manage their time effectively. This requires an understanding of how to allocate time to different projects and activities, they should prioritize their activities, delegate and deal with interruptions, organize work systematically and perform other acts that will make them better administrators. Good time Management Skills is one of the core difference between effective and ineffective women administrators.

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NATIVE AND INDIGENOUS CULTURES: PRESERVATION IN THE GLOBALIZATION ERA

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Introduction

Native and indigenous cultures indicate similar meanings in general. According to Indian context and historical background these two can be visualized as separate. In the days of visualizing global world, maintenance of uniqueness is as important as mixing into one culture. In this aspect native and indigenous cultures occupy an important focal point not only for India but for other nations also. The present paper is focusing on this issue of uniqueness vs. generalness in the coming discussion.

Native and Indigenous Cultures

As words if we look for the meaning of the two words, 'native' and 'indigenous' they mean same 'local'. In the world context the word represents the tribal populations who are natural inhabitants of the soil. These populations were dominated by settlers from other continents during the course of development. For Indian context also the above point is true, but there is slight difference because of colonial rule.

Historical contexts show Aryans as first settlers from outside and it is opined that they made native settlers to move to interior parts of the country. The ways of living in society loaded with different languages, regional and geographical differences, casteism etc. made society differentiated into different sections. On this basis, it is appropriate to use two words native and indigenous symbolizing regional and tribal populations. The historical context of colonial rule also signifies that both



regional and tribal aspects need to be considered as separate aspects. Discussion on this aspect is coming in the next part of the paper.

Globalization

Globalization as a process has become significant due to recognition of interdependence of the nations on one another for survival. Aspects of privatization and liberalization have further increased this emphasis. Due to improved opportunities of education and employment the migratory chances of people to faraway places also improved; where they need to mix with people of other culture and at the same time maintain their own. This is influencing all processes of life from living to education. Particularly education being the tool for developing awareness in people about every aspect of life, the representation of these factors in the form of proper inputs has gained momentum. programmes on indigenous education are being developed and implemented by the international bodies like UNESCO as part of teacher training programmes.

Indian context

The aspects of globalization are as important for Indian national development as for other nations. The peculiarity of Indian society is division of society into groups basing on region, language, caste and occupation. These aspects are further become rigid due to occupation of different groups of people from all over the world. Finally the colonial rule and later attainment of independence resulted in a nation where people who are physically present in the local context but mentally made to believe in the glorification of other cultures than their own. They are dependent on other nations for development on all aspects. In this scenario, the marginalization of society has become a hindrance for wholistic development through equalization of opportunity so mainstreaming process is introduced through constitutional amendments. This process is further improved due to the development of concept of globalization.

Native and indigenous cultures in India

Just like in other parts of the world the cultural aspects were greatly influenced by invasion of other people from different parts of the world.



India has become a country with different religions, regions and languages. As a result there is always a multicultural society with domination of one culture over others. But people with their rigid and resistance attitude towards following their own customs have preserved their culture and tradition to some extent. The most prominent factor that helped in this process is the aloofness maintained by different groups from mainstream society.

Most problems started with colonization of the country during 18th century. In a pressure to survive life in foreign rule, people resort to change their day to day chores. In the process of modernization, industrialization the fine cultural and traditional values of Indian society were lost and people started treating these values as obsolete in their quest to adjust themselves to the present social realities.

In addition to this the stratification of society on the basis of caste has led to another form of division. Here the role of the indigenous people is more important. Tribal people form an important part of social life of Indian society. They are spread over a particular part/s of country with their own distinct culture, language and tradition than the dominant culture in the nation. They survived on agriculture and selling the produce. Their way of social customs (marriage, law and order, moral and ethical behaviour etc.), their Gods and ways of worship, the material aspects for which they give importance all depend on the area in which they are living. The unique features often appear to locals as of useless in comparison to modern day requirements.

Tribal always maintained a close and harmonious relation with the nature on which they are dependant for survival. They know about each and every part of the land inch by inch and are able to get all sorts of help from nature for their day to day living. They know which the medicinally useful plants are and which are for food. Basing on their agricultural practices useful for survival their day to day material needs are simple and often appear ridiculous for local people. The concepts of health and worship of Gods to maintain health and wealth for their group are unique and specific to their context.



Modern man in his quest to intrude in others life in the name of development has caused great damage to the survival of these indigenous cultures. Already the local people's lifestyle has changed and now it spread to the tribal people.

Issues related globalization

After attainment of independence the efforts of Indian government to provide equal opportunities for growth in the name of mainstreaming has caused some affect on maintenance of local and indigenous cultures. The reason the policies are based on needs felt elsewhere, but not on the immediate local needs. There is no consideration for the fact of preserving the uniqueness, but bringing all the people irrespective of their position in the society to an average and equal grade. This process which is done without much consideration for maintenance of local culture under compulsion has caused loss to cultural and traditional identity of the society. Tribal people in this quest either lost their traditional knowledge and relation to nature or remained aloof with stiff resistance to the process. Most of the population became extinct due to these unmindful policies of development and cruel ways of extermination policies by dominant migrant populations, worldwide.

Adding to this situation is the new concept of globalization which is visualized in the economic process more than any other place. More than a process of equalization it turned out to be a process of economic domination, under the head of equalization. The increasing environmental concerns have further caused great problems in this process. On the one hand, nations are faced with a problem of losing their culture and habits under the pressurized process of globalization and on the other there is dominance of multinational companies on the natural resources of other nations. In this process the indigenous people are posing the threat losing the right of cultivating the natural resource on which their lives are dependant. This is only one example to cite, many such aspects could be there if close examination is given to the thought of preserving indigenous culture.



Suggestions to preserve cultures

Establishing Institutions for Cooperation and Coordination to preserve native cultures: For maintenance of peace and cooperation world over international bodies like UNESCO have established committees at international and national levels. Such efforts are also needed in this regard. It is only through such worldwide efforts one can save indigenous cultures through awareness and research practices.

National level Efforts: Looking to the specific needs of preservation aspects of local populations every government has to make efforts to preserve the indigenous culture by relating its importance to present day living contexts. Efforts need to be there at all fields of education, development and employment.

International level Efforts: It is high time that international committees take this area seriously to find a solution to the grave environmental crisis faced by humanity. Only by preserving and promoting indigenous ways of life and integrating it harmoniously with the present day life styles, one can save the planet earth from destruction.

Exchange programmes: To develop proper awareness and research aptitude on the topic exchange of professional at different levels and fields is necessary. Already programmes are well developed among nations for different purposes into which indigenous culture can be a part.

Awareness: Developing awareness is the first and foremost step to take care later. Education at all levels needs focus in this matter. Special incentives of finance and credits need to be designed to encourage people to take up this aspect and work out.

Education: Special programmes at different levels needs to be developed and offered. Financial support to take up such aspects is a must. Working on this area needs mobility and working close to the real context in order to develop clarity of the situations. Therefore, educational endeavors are to be planned in collaboration and cooperation by taking clues from other contexts suffering from similar problems.



Teacher's Role: Being pivot in the teacher learning process teacher needs a special mention in this aspect. Special training, orientation is to be provided to the teacher to teach this aspect by developing a positive attitude towards the subject.

CCA / Extra CA: To inculcate the ideas from earlier stage extracurricular and co-curricular areas need special attention from earlier school days. If students internalize the need to preserve indigenous cultures by adopting their ways of life to the extent possible in their day to day life, half of the work is done.

Conclusion

This discussion cannot end with saying that in order to preserve the uniqueness of cultures, one should overlook the positive aspects of mainstreaming and globalization. Many of the rigid aspects of healthcare, nutritional aspects are made known to these people though education; Improved employment opportunities made their lives secure and safe. They are now more aware of the needed and not needed aspects of their early lifestyle and can improve their lives. But one thing that needs to be taken care of is – policy programs, projects, and other programs aimed at their development need to take care of their cultural and traditional aspects. Change needs to come through natural acceptance but not through pressurized implementation procedures. In this aspect the so called modern people who are intruding into the lives of these local and indigenous cultures have to know and respect of culture, tradition and value of life of these people.

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MARRIAGE PRACTICES OF NORTHERN ANDHRA TRIBES

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PAROJA/PARJA/PORJA Tribe

The Porja is a hill tribe, inhabiting in the agency area of Visakhapatnam District spread over the adjoining areas of Orissa state. They are chiefly shifting agriculturists and cultivate lands on the high level hill slopes. A numerically small tribe, with a population of 16,479 as per 1981 Census, they reside mainly in the Munchangiputtu, Ananthagiri and Pedda Bayalu mandals. Their mother tongue is "Parji" dialect a corrupt form of Oriya language. The term Porja seems to have been derived from Oriya words "po" and "raja" which means "Son of king" as described by Thurston (1909). In the Madras census Report (1871), it is pointed out that the term is a mere corruption of the Sanskrit term signifying a free Hillman. Most of them have migrated from Orissa to the present Northern coastal Andhra in search of cultivable land, some hundreds of years back. A study on the marriage customs of that tribal group is the core of this paper.

While coming to their marriage practices firstly Cross- cousin marriages especially with father's brother's daughter are preferred. Maternal uncle niece marriages are prohibited. Usually the elder brother's widow is married by the younger brother (junior levirate), but the younger brother's widow cannot be married to the elder brother (senior levirate). A person is allowed to get married to his wife's elder or younger sister. Polygamy is allowed. A formal bride- price system exists among them. Either party can divorce with the approval of the head man of the tribe and elders. Children are the liability of the father and divorce compensation is paid to the aggrieved party. If a husband proposes divorce, he has to pay maintenance to the wife till she gets remarried. If a wife deserts her husband the bride price collected by her parents at the time of marriage should be returned.



Widow, widower and divorcee remarriage is very common. Increase in the age at marriage of a girl, and predominance of adult marriages are seen nowadays.

The Porja follow the patrilocal system and the married couple should spend a few years with the bridegroom's parents, though they prefer nuclear families. Still a few joint families both horizontal and vertically extended types are observed. In principle, no avoidance relationship between family members is practiced. Joking relationship between elder sister in law (elder brother's wife) and younger brother in law (husband's younger brother) is permitted. Usually, conflicts arise between brothers at the time of sharing of work load or property and check on the freedom of youngsters. The rule of inheritance of property is male equigeniture, while succession to a hereditary office, is by the eldest son. The eldest son gets an extra share (jyeshta bhagam) if he maintains the family after the death of the parents.

When a Porja marriage alliance is contemplated, the elders from the boy's side negotiate with the girl's parents. The parents bring a few pots of liquor and some rice, and offer to the girl's parents as gifts. If the girl's parents favour the match, they accept the presents and drink a little quantity of liquor then the boy's parents sprinkle a little quantity of liquor on the walls of the girls house as a symbol of agreement. After consulting their guru they fix a convenient day for marriage. Just a day before a Porja marriage, the boys party bring five kunchams (One kuncham is equal to 4kgs) of rice, new clothes, goat or cow, a few pots of liquor and some cash ranging from five to 2000 rupees and offer to the girl's parents as bride price. On that day the girl's parents give a non vegetarian feast to the guests and tribes man in the village.

The next day, the bride accompanied by the relatives goes to the bridegroom's village. Outside the bridegroom's house two poles are set up and joined together at the top with a string to which a gourd is suspended. As soon as the couple comes before the house a tall man cuts the gourd and it falls to the ground. Then the couple sits on a new mat made of bamboo for the occasion which is spread before the entrance of the house. The bride is presented with new clothes by the in laws. Sometimes, the clothes are



dyed turmeric yellow. Both of them wear new clothes, and their heads, face and body are smeared with turmeric paste, oil and sometimes charcoal powder also. The bride's saree and the bridegroom's towel (hanging on the shoulder) are tied in a knot. The nuptial ceremony is arranged on the same night. Generally, the girl spends a few months with her parents even after marriage. Wearing of toe-rings or taali by females as a symbol of marriage is not strictly observed and hence identification of the marital status of women is difficult.

GADABA

Gadaba is another of the vulnerable tribal groups of Northern Coastal Andhra. Gadaba population is mainly distributed in Vizianagram, Visakhapatnam and Srikakulam districts. However, this tribal population is sparsely distributed in East Godavari, Nalgonda, Guntur, Krishna, West Godavari, Medak, Warangal, Hyderabad, Nellore, Anantapur and Adilabad.

Marriage customs of this tribe are also peculiar the rule of Endogamy is strictly observed at tribe level. Marriage in between the sub tribes is also encouraged now. Four types of marriage are prevalent among Gadabas, namely, Negotiations, Elopement, Capture and Service. The surname (linage) locally known as Intiperu plays an important role in the marriage alliance. Cross- cousin marriage is the preferential however; marriage between distant relatives and within the sub tribe is also acceptable. Menarikam marrying brother's own brother daughter and edurumenarikam (marrying father's own sister's daughter is also permitted. Both levirate and sorarate are acceptable. Elder brother's widow can be married by the younger brother and also a man can be allowed to marry his deceased wife's younger sister. Widow marriage is allowed. Polygamy is allowed but number of such cases is very few. Monogamy rule is strictly followed now due to poverty. All the community people have shown their disapproval for inter tribal marriages. However, a few inter- tribal marriages are also taking place under unavoidable circumstances.



Marriage by Negotiation is another type of marriage the initiative is always from the boy's side. After having decided upon a particular girl the parents of the boy consult the Desari or Pujari (Priest) for an auspicious day to visit the girl's house. The marriage among the Gadabas generally takes place during the months of March, April and May which are considered as agricultural lean period. On the appointed day the father of the boy followed by Janni and few community elders' repairs to the house of the proposed girl. They informally tell the girl's father that they have come for pappukoodu meaning marriage alliance. At the outset the girl's father out of modesty negates the proposal by saying that he does not have it. He fixes another day on the plea that he has to inform about this to the girl's maternal uncle and other nearest relatives. Sometimes later he informs the parents of the boy regarding the amount of gold and voli (bride price) to be given to the girl. Payment of voli is prevailing among all most all the tribes even today; it is a compulsory requisite for the marriage of negotiations. Generally it is demanded by the girl parents and that is decided by the people gathered at the time of betrothal. If the voli amount demanded by the girl's party is acceptable to the bridegroom's party, the latter i.e., the groom's party consisting of the boy and few community elders goes to the house of the girl on the day fixed by Desari to pay the voli. After this is over a community feast known as volibhoj is given by the father of the girl to the entire community. Then, they return home.

Later, muhurtham (auspicious time) for the wedding ceremony is fixed in consultation with Desari, and the matter will be communicated to the father of the girl. Generally marriage ceremony takes place invariably at bridegroom's house. The marriage pandal (wedding booth made out of bamboo) is erected by the groom's party before they had left the bride's village. The newlywed couple on their arrival is conducted to the pandal where a grinding stone is already kept. Then the females assembled there throw turmeric powder over the couple. After the wedding ceremony, dimsa dance is performed.

Marriage by Elopement is another type of marriage is also socially recognized by the Gadabas. Marriage by elopement generally takes place



when a boy and girl want to marry each other but their elders disapprove it. Sometimes, the boy's incapacity to pay the Voli and meet the expenditure of marriage may also makes him to resort to this method. Both the boy and girl have ample opportunities to meet one another either in the farm or during their visits from village to village or in the weekly markets (shandies). In this type of marriage s generally some old woman agreeable to both the parties mediate .this mediator informs the young man about the place where the girl comes on the appointed day. On the appointed day and time he carries her away by force to his village and starts living with her. Sometimes no mediators' assistance is taken. The girl and the boy who got acquaintance with each other run away from the village.

Marriage by capture is another type of marriage is also socially recognized by gadabas. Marriage by capture usually takes place when girl disagrees to marry the boy who proposes to marry her. In this case the boy waits for opportunity to capture the girl at a hill stream or the forest when she is alone. In some cases it takes place at the weekly shanty. In this method the boy forcefully capture the girl and stay away from their natal home s for a period of 10 to 15 days.

Marriage by Service is a type of marriage is popularly known as ghorajavai, according to which a man works for an accepted period for this would be father in law. It seems in the past, cash payment is said to have been substituted for service. If the boy takes the girl, he asks for her and agrees upon to work for a specific period i.e., one or two year's works with would be father in laws house. On an auspicious day, he comes and stays in the girl's house and does service as per the agreement.

Maru Manuvu is common in some tribes .The children of the deceased husband continue to live with her ad new husband; retaining the surname of her first husband even though she marries another person. The children born to the second husband will have his own surname. This practice is socially accepted. The man who marries her allows the children born to her first husband also to be with him. After having finalized the alliance, on some auspicious day, the man takes the widow to his house and gives



her new saree and also offers a community feast, which solemnizes the marriage.

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THE CONTRIBUTION OF ABHINAVAGUPTA IN KASHMIR SHAIVISM

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Among the various hindu philosophies , Kashmir Shaivism is a school of shisivism consisting of trika. It is categorized scholars as monistic idealism. Kashmir Shaivism has a significant place in the history of Indian philosophy. Different system came into existence during different times in according with the need of the time.

The original cult of Kashmir shaivism was predominatly a kind of saivism consisting of worship of shiva and shakti . The shakti cult is closely connected with cult of shiva. The Shivasutra which from the basic of Kashmir shaivism are seated to have been revealed in a dream to vasugupta (8th century .A.D) by lord shiva himself who took pity on the suffering humanity. Vasugupta in turn handed them down to his disciple kallata. There are several interpretation of the sutra by different scholars, like ksemaraja and bhattabhaskara, who no doubt agree in regard to philosophical view-point. The purpose with which the sutra were promulgated was not merely to enunciate the principal of Kashmir shaivism i.e. not to serve merely a theoretical or intellectual object, but also to show a man a practical way of realizing by experience the fact that man is essentially in his real and in most self none other than supreme power whom you might call Truth, Goodness, God, Cosmic energy any name you give. This is considered as man object of Shiva- sutra and his view-point Kashmir shaivism has its own place in the history of Indian philosophy.

It's philosophical important to distinguish Kashmir shaivsim from the advaita Vedanta of Shankara as both are non-dual philosophies which give primacy to universal consciousness (Chit or Bhraman). In kashmir



shaivism, all things are a manifestation of this conscious this means that from the point of view of Kashmir shaivism the phenomenal world(Shakti) is real, and it exists and has its being in consciousness (Chit). In comparison advaita Vedanta holds that brahman is inactive (niskriya) and the phenomenal world is an illusion (maya). Thus the philosophy of Kashmir shaivism , also called traka, can be seen in contrast to Shankras Advaita.

All the four branches of Kashmir shaivism tradition were put together by the great philosopher Abhinavagupta (aprox 950-1020A.D). Among his important works the most important is the Tantraloka ("The Divine light of Tantra"), as work in verses which is a majestic synthesis of whole tradition of monistic Shaivism. Abhinavagupta succeeded in smoothing out all the apparent differences and disparities that existed among the differnt branches and schools of kashmir shaivsim before him. Thus he offers a unitary, coherent and complete vision of this system. Due to the exceptional length (5859 verses) of Tantraloka, Abhinavagupta himself provided a shorter version in prose, called Tantrasata ("The Essence of Tantra").

Abhinavagupta was born in (950-1020 A.D) the valley of Kashmir. He was one of India's greatest philosophers, mystics and aestheticians. He was also considered an important musician, poet, dramatist, exegete theologian and logician- a polymathic personality who exercised strong influences on Indian culture. He was mystics and studied school all of philosophy and art of his time under the guidance of as many fifteen (or more) teachers and gurus.¹ The Following is the list of his teachers with the subject or subjects, which they taught, shown against each name –

- 1.Narasinmhagupta (his Father) : Grammar
- 2.Vamanatha : Dvaita Tantras
- 3.Bhutipiraja : Brahavidya
- 4.Bhutipirajatanaya : Dualistic-cum-monistic-Saivism
- 5.Lakshmanagupta : Karma and Trika Darsanas
- 6.Induraja : Dhvani
7. Bhatta Tota : Dramaturgy

Other in whose cases subjects are not specified :-

- 8.Sricandra
- 9.Bhakti Vilasa
- 10.Yogananda
- 11.Candravara
- 12.Abhinanda
- 13.Shivabhakti
- 14.Vicitranatha
- 15.Dharma



16.Shiva 17.Vamana 18.Udbhata 19. Bhutisa 20. Bhaskara.

In his long life he completed over 35 works, the largest and most famous which is *Tantraloka* an encyclopedic treatise on all the philosophical and practical aspects of Trika and Kaula (Known today as Kashmir shaivism). Acharya Abhinav's contribution in the field of Kashmir saivism is unique. He wrote books on Kashmir saivism and other fields. Prof. K.C. Pandeya mentions 44 creations written by Abhinavagupta ² but the catalogues catalogourum includes only seventeen of them. ³

The importance of philosophical work to the Indian mind is in proportion to the degree to which the another is believed to have personally realized the contents of work through spiritual experiments. It need be emphasised here that alone can be a sure guide who is familiar with the journey to ultimate goal. Acharya Abhinav's philosophical works are deemed very important as the statements on supersensuous matters through spiritual experiments which he carried on a number of years. The best ways to realize the ultimate goal of is expansion of the real self.⁴ Thus Acharya Abhinava gives the first place to personal experience. Because of this personal spiritual experience of the Acharya, the system of pratyabhijna was popular and honored by the scholars of Kashmir saiva Philosophy.

As well as one of most important works of Abhinavagupta is *Ishvarapratyabhijna-vimarsini* – commentary to the verses on recognition of the Lord and *Ishvarapratyabhijna-vivrti vimarsini*- commentary on the explanation of *Ishvarapratyabhijna*. Two more philosophical text of Abhinavagupta are **Kathamuktha Tilaka-“Ornament of Face Discourses”** and **Bhedaveda vidarana - “Confrontation of the Dualist Thesis”**.

Abhinavagupta most important work on the philosophy of art is *Abhinavabharti* – a long complex commentary on *Natya Shastra* of Bharta Muni. This work has been one of most important factors contributing to Abhinavagupta's fame up until present day. His important contribution was that the theory of *rasa* (asthetic savor). Abhinavagupta's other poetical work **“Dhvanyalokalochana”** which is commentary on **“Dhvanyaloka”** of Anandvardhana



Conclusio : At last we can say that Abhinavagupta contribution in Kashmir shaivism was very significant and dearness. His contribution is rare part of this philosophy. His all work is very important for shaivism. Sanskrit tradition. Saiva philosophy system is universal.

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(Footnotes)

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