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Editorial.....

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

The writers with their rich research experience in the academic fields are contributing excellently and making IJMER march to progress as envisaged. The interdisciplinary topics bring in a spirit of immense participation enabling us to understand the relations in the growing competitive world. Our endeavour will be to keep IJMER as a perfect tool in making all its participants to work to unity with their thoughts and action.

The Editor thanks one and all for their input towards the growth of the **Knowledge Based Society**. All of us together are making continues efforts to make our predictions true in making IJMER, a Journal of Repute

Dr.K.Victor Babu
Editor-in-Chief

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(P.K. Thakur)

Secretary(Officiating)



IDENTITY CRISIS AND IDENTITY CONSTRUCTION OF BODOS (TRIBAL ETHNIC GROUP) IN ASSAM: REALISATION OF THEIR DREAM THROUGH BTR

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Abstract

After Independence rising question of identity crisis by different ethnic groups having separate ethno-cultural identity itself has become a big question in India's nation building process. Growing consciousness among different communities e.g., Bodos of Assam created a sense of psycho-fear about their own cultural identity. The adamant policy of the government increased their dissatisfaction and led to development of separatist tendencies and separatist movement which poses a threat not only to cultural assimilation process but also to the quest for establishing unity in diversity. Government's initiative to solve Bodos question of identity crisis through Bodoland Territorial Region with greater autonomy indeed, a positive attempt in the direction towards promoting multiculturalism and strengthening strong nation building process in India.

Key Words: Autonomous Power, Ethnic Groups, Identity Crisis, Multiculturalism, Nation-Building, Separatists Movement

Introduction:

Assam, a North Eastern state of India having 3.12 Cr of population (According to 2011 Census) is a 78,438 square km area. It is inhabited by diverse ethnic groups including both tribal and non-tribal with numerous clans and sub-clans. This diversity enriched with colorful cultures makes the land a cultural hotspot. Amidst this beauty, Assam is augmented with numerous problems by demanding third generation rights and reflecting sub- national sentiments by different ethnic groups since Independence. The Bodo of Assam is one of such ethnic group who has become more conscious of their separate identity and launched movement.

In this background, the main objective of this paper is to find out root causes of identity crisis of Bodos, analyze the challenges and progress in their journey to attain goal.



This paper is descriptive based on review of various literatures, articles and supported by empirical observations of the author.

Demography of Assam:

In spite of being a small piece of land, Assam is a plural society representing vast socio-cultural and ethnic varieties and making it a combination and co-existence of both cultural harmony and conflict for identity. Assamese, Bengali and Bodo are recognized as Scheduled language among hundreds of languages spoken in Assam. In Assam, most of the ethnic groups are primarily tribal in origin and most of the non tribal categories are converted tribes having Mongoloid root into caste through the process of sanscritisation. Amalgamating all, now Assam is the melting pot of Ahom, Bodo, Kachari, Dimasa, Chutiya, Sonowal, Tiwa, Garo, Rabha, Sarania, Hajong, Tripuri, Deori, Thengal, Hojai, Koch, Moran, Karbi, Mishng, , Tai, Motok , Tea tribes and so on.

Bodos of Assam: Concern about their Identity

Since Independence, questions of Identity crisis have been arising among different ethnic groups. They have become more and more conscious of their rights and began demanding for preservation of the same. Gradually the demand converted to violent movement with the rise of militancy among various ethnic groups. According to Sarthak Sengupta (2014) "in Assam ethnic conflict is seen in the form of tribal-nontribal, tribal-tribal, native-outsiders and settler-migrants conflicts". One of such conflict which created tenuous situation in Assam since 1960's was Bodo Movement.

Bodos of Kachari folk are the most aboriginal races of Assam. They are one of the most polite communities. Being a major tribe of Assam, Bodos are one of the composite parts of the greater Assamese society. They belong to the Indo-Mongoloid ethnic group of the Tibeto- Burman language family. Bodos are the most indigenous and earliest inhabitants of Assam. Major portion of Bodo population is settled in both the northern and southern bank of the river Brahmaputra. In the northern bank Bodos are settled in North and Eastern part of Dhubri Sub-division, in the whole of Kokrajhar district, Northern most part of Goalpara district, northern part of Guwahati Sub-division in Kamrup district, in whole of Baksa, Udalguri and Chirang districts; in Northern part of North Lakhimpur and Dhemaji Subdivision in the Lakhimpur district. In Southern bank, they are scattered in the areas of Dudhnoi- Dhupdhara areas in Southern part of Goalpara district and in Boko- Choygaon areas of South Kamrup. A small portion of Bodos are found in Nagaon, Sibsagar, Dibrugarh and in KarbiAnglong district also. Thus it has been observed that Bodos are scattered in almost all part of Assam constituting a very significant community as well as enriching the cultural diversity.



According to 2011 Census report of India, the Scheduled Tribe population constitutes 13 percent of total population of Assam of which Bodos alone constitute 40 percent. After Independence pathetic condition in socio-economic, political and educational field had marginalized them in the larger Assamese society and accorded only low status in Hindu social structure. The practice began even before getting independence. In 13th century they were subjugated by Ahom rulers which continued till Yandaboo Treaty of 1826 with the overthrow of Ahom rule by the British colonial power. During colonial period they remained untouched by modern education system as they loved to live with nature according to primitive life style. It affected their life beyond imagination. They were deprived of their due share in politics and administrative job which continued even after Independence and they found themselves as very backward in all aspects e.g., economic, education, political, social and cultural.

They began experiencing the problem of alienation, unemployment, economic and political oppression in their own motherland. In the unequal economic set-up of India they remained as economically backward sections of society which was magnified by tragic discrimination in achieving their rightful place in society. Apprehension further intensified as a result of growing encroachment in their natural resources by migrant population and outsiders. Bodo community considered them as 'native' or 'son of soil' whose identity was seemed to be in crisis. In this background, the basic question of survival, preservation and construction of identity of Bodos aroused. Thus the newly emerged small educated elite class among them began to feel that their identity is in crisis and they are being deprived of their due share and right in society, economy and politics.

Thus this small elite group began to think about the need of organizing themselves for protections of socio-cultural identity, development of their language, remove economic backwardness, instruction through their mother tongue, and protection of culture and so on. It took an organized shape with the formation of Bodo Sahitya Sabha(1952) and All Bodo Students Union (1967). Bodos under the banner of the organizations tried to revitalize their consciousness and mobilize their community about non political issues. But in course of time a section of educated elite sought to empower politically, which was primarily dominated by Assamese Hindu majority group.

Bodos: Struggle for Identity Construction

Bodos, the 'Sons of the soil' at the outset of their movement organize them as Bodo Sahitya Sabha (BSS) to pressurize the government for fulfillment of their non-political aspirations. The main aim of BSS was the development of Bodo language as standard literary language. Government of Assam responded positively and introduced Bodo language as medium of instruction in primary school in 1963, in 1967 in Middle Schools, in 1976 in secondary level, in



colleges of Gauhati University as an MIL subject and finally in M.A. course in 1995.

Bodo was recognized as an Associate State Official Language in 1984 through the ordinance by the Governor of Assam, which was translated into state law by passing a Bill on the same by the Assam Legislative Assembly in May, 1985. (Mitra, Udayan I North East India: Quest for Identity, Guwahati, DVSP Publication, 1988 p.711)

Since 1960's, aspiration of Bodo people shifted from non-political to political with the establishment of Student Organisation All Bodo Students Union (ABSU) in 1967 and political organization Plain Tribal Council Of Assam (PTCA) in the same year for the main objective of creation of new union Territory (Udayachal). Showing the sign of separatism, they started demanding separate administrative arrangement or a state for the Bodos.

'On 20th May, 1967, the PTCA for the first time placed their demand for creation of an Autonomous Region, to the President of India, Dr. Zakir Hussain by submitting a memorandum, in New Delhi. The issues raised in their first memorandum were alienation, unemployment, exploitation, and preservation of tribal language, culture, custom, and traditions.' (Datta, P. S.: Settlement of Bodoland: A few Points to Ponder: North East India as I see it, New Delhi, Omsons Publications, 1994, pp. 41,44)

PTCA also opposed for the adoption of Assamese language as State language in Assam and demanded to replace it by Hindi language.

The PTCA and ABSU jointly boycotted the parliamentary election on 19th May, 1968, in support of demand for creation of a separate administrative unit. (All Bodo Student Union and Bodo Peoples Action Committee: A memorandum to the three Members Expert Committee on Bodo Issues, Kokrajhar, 1991.p. 75).

In the decade of 1970's PTCA managed to get share in Assam Legislative Assembly and upgraded their demand from Autonomous Region to Union Territory (Separate State) which was abandoned during national emergency of 1975. In 1977 PTCA returned to its earlier demand of Autonomous Region due to fluctuated political situation which was opposed by both ABSU and a section of PTCA members came out and formed the PTCA (Progressive) which reiterated their demand of Separate Administrative unit with new name 'Bodoland'. In 1984 with the merger of PTCA (P) in PTCA, a new party the



United Tribal Nationalist Liberation Front (UTNLF) was formed for separate Bodoland which continued for several years. During this period several violent activities took place which threatened the law and order situation of the state. To stop such circumstances, a Memorandum of Settlement (MoS) was signed on 20th February, 1993 among Central Govt., State Govt. and ABSU-BPAC and envisaged on the establishment of Bodoland Autonomous Council (BAC) which would have power on 38 subjects.

But Government neither took any effort to implement the Accord nor was the election held for the formation of the Council. This adamant policy of the Government compelled ABSU leaders to launch second phase of Bodo movement again since 1996 for separate state by rejecting the BAC and decided to reiterate the demand of separate state. With new initiative, new policies and strategies ABSU leaders began to organize several demonstrations and agitation programme. Significantly, in 1996 the Bodo movement took the form of militancy with the formation of Bodo Liberation Tiger Force (1996) under the leadership of Prem Singh Brahma and created very critical and tenuous situation in Assam resulting the loss of lives of thousands of people and crores of property. But ABSU took the initiative to bring the BLTF to negotiation with the Central Government for permanent settlement of the problem of Bodos identity crisis. As a result

‘tripartite talks were held between the Govt. of India, Govt. of Assam and Bodo Liberation Tigers and finally a Memorandum of Settlement on 10th February, 2003, for the creation of an Autonomous self-governing body to be known as Bodoland Territorial Council, within the state of Assam. In this regard three bills were passed in both the houses of Parliament viz.-(i) Sixth Schedule to the Constitution Amendment Bill, 2003, for the creation of Bodoland Territorial Council in the state of Assam. (ii) Ninety Fourth Constitution Amendment Bill, 2003, for the amendment of Article. (iii) Constitution (Scheduled Tribe Order) Amendment Bill, 2003, for amending the list of Scheduled Tribes in the state of Assam.’ (Government of India, Ministry of Home Affairs, N E Newspaper, August, 2003).

In this way constitutional protection has been provided under sixth schedule of the constitution to the Bodo people. The area under BTC jurisdiction was officially called Bodoland Territorial Area District (BTAD). According to Sixth Schedule to the Constitution Amendment Act, 2003, BTC was constituted with 46 members. Out of 46 members, 40 members elected directly on the basis of adult suffrage (30 from Schedule Tribe, 5 from non tribal, 5 open to all



communities) and six members nominated by the government from unrepresented communities and women. The Act provided forty subjects to the BTC to make law within the jurisdiction of BTAD. On the basis of the Act, BTC has been formed and continued to administer the region to meet all the demands and aspirations of Bodo people and construct their identity. The autonomous power and huge central govt. fund provided to them brought about drastic changes and positive outcome in their every aspects of life which satisfied one group. In spite of the positive result, another section was still unhappy and continued demanding more power through the establishment of separate Bodoland. They still, afraid of their identity crisis.

Second Cycle of Militancy and Journey towards Establishment of BTR:

The signing of second Bodo Accord and formation of BTC dissatisfied the National Democratic Front of Bodoland (NDFB) which was formed by secessionist Bodos on 3 October 1986 under the leadership of Ranjan Daimary demanding Sovereign State. They used to adopt guerrilla tactics to pressurize the Govt. to meet their demand. But within few years their initiative was cooling down to some extent toward peace and on 25th May, 2005 a cease fire agreement was signed between the central government, state government and NDFB. But the formation of Telengana, a new state formed by bifurcation of Andhra Pradesh was seemed to open the panthora's box .With a new jolt, the pro-talk faction of NDFB has demanded separate Bodoland State and launched armed movement in support of their demand and mainly has targeted Santhal, Munda, Oran and Bangladeshi migrants reflecting the nature of both ethnic versus ethnic and ethnic versus outsiders conflicts. ABSU, the student organization was also in support of creation of Bodoland state and continued its movement. Amidst the rebellion, ideological confrontation occurred among the members of NDFB, and in the following years it split into several factions with many ups and downs. NDFB (Sangbijit) group continued to indulge in militant activities and many other leaders were put into jail. The existing insurgency unleashed continuous turmoil and unrest in the society, insecurity to the life of people and threatening to the peace, law and order situation of Assam.

Finally, a recent historical development took place to permanently solve the contentious issues of Bodos Identity Crisis. The BJP led NDA Govt. under the Prime Ministership of Narendra Modi took the initiative to satisfy the demands of all Bodo groups including political, non-political and militant groups and made necessary arrangements for negotiation with them. Several rounds of negotiation took place between Union Govt., all the four factions of NDFB and ABSU. Finally a historic Tripartite Bodo Peace Accord was signed between



the Central Govt., State Government and Bodo Organisations (BPF, UPPL, ABSU, NDFB) to establish Bodoland Territorial Region (BTR) as replacement of BTC. The Accord has made commitment of transferring more powers by union govt. and state govt. under constitutional framework to provide it maximum autonomy. According to the Accord, the Council under BTR shall have 60 members .The accord included a list of measures to be taken for the development and progress of the Bodos e.g., complete autonomy, appointment of Deputy Commissioners and Superintendents of Police in consultation with the Council, Bodo language to recognize as Associate official language with Assamese as official language. With the signing of the Accord, all the NDFB cadres have surrendered their arms swearing to maintain peace and integrity in society. Thus, the prolonged Bodo movement came to a peaceful end with the establishment of Bodoland Territorial Region.

Conclusion:

The journey from darkness to renaissance, demand from non- political to political, movement from non-violent to militant, progress from Territorial Council to Territorial Region was full of hurdles. After 60 years of struggle, with gradual development through four stages, finally Bodo leaders and people came to satisfy with their demands. But it is a matter of concern that whether the formation of BTR with extended area, extended structure and constitutional power will solve all the socio economic, political, educational and cultural problems and solve problem of identity crisis or will create struggle for power among themselves? The elasticity of the situation depends on the timebeing implementation of the Accord by the government.

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SOCIETAL SITUATIONS UNDERNEATH CRAFT ETHNICITY IN KERALA

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Introduction:

Kerala is situated in the far south of India facing the Arabian Sea and shares the with Karnataka and Tamil Nadu. There are several craft forms prevalent in Kerala which receives pampering from unique social situations persisting there. These craft activities are shaped with acceptance of current social circumstances prevailing there as a continuation of societal activity formations from the past. These productions are results of persisting demands from the society for such objectivities. Scenario of Social life forms the platform for active participation of these objectivities in humanitarian spaces. Such demands are forwarded through special roles of typical objectivities in social life practice and through social life. This special active role is generated through habits of the society with its own social limitations, like behavioral attitudes, habitual practices, availability of natural resources, and explorations like Economical situations, Philosophical awareness, Devotional practice, Psychological ambience or religious participatory activities. Each of the times these craft forms took form of life even without acknowledgement of social plants with which they are attached but justified its social relevance and absolute necessity of getting is shaped as it is.

It is very interesting to note that beliefs have an important role in the 'social beingness' of mankind. First of all, formation of caste system is an important phenomenon that took spontaneous generation in the humanitarian social tedium. Man explored his potentials as a living creature with understandings about the process of being (practice of life) and also recognized limitations of his materialistic remains and ideological set up of the mind. The abilities are recognized by its individual (personality of ability) during vesting of action in society in a specific form on social requirement of its procession and it's potentials of creativity, physical strength and natural abilities were remarkably identified and evaluated in society. These typical elements prepared actor's psychological platform to discriminate human groups which has difference of habits from the others.

Various sub caste formations and its relevance: Establishment of four caste system and its active role in society are on special concern here in these notes. The caste system protracted in Kerala is an extension of four caste system prevailed in India for several past centuries. The social situation in Kerala was an extension of the similar conditions prevailed in the rest of this geographical area. There were four castes were formed according to each ones special role in the society, 1. Brahmins- the priestly caste



that handled all devotional requirements of the society, 2. Kshathriyas-the ruling people who acquired all powers and controls over existing behaviors of the society, 3. Vaysyas-were the economic manipulators of the society who controlled all business objectivities and 4.The Shudras the group of people dedicated to al cultivation and related activities for rest of the people in the society. (*Note-1*)

In practice of four caste system there are several definite differences originated within the social mortality of each above noted four major categories. The Shudras are most relevant here because they are the working class which included largest number of people in the society. This social group included producers of food grains, involved in fabrication of residences, house making and keeping, worked to breed animals, drove the vehicles, worked to satisfy all and intact painstaking facility and its requirements of the society. Being deserted by the rest of the higher caste patterns of the society due to the superiority avowed by them, the works inferiors engaged were never considered major. Within the lucidly fabricated social strata, other three categories Brahmins, Kshathriyas, and Vyshyas were industrious against extravagant major works implicated by society. Gathered social acceptance for such discriminative systematic development continued in the society for several centuries and it began to be considered as a genuine humanitarian feature.

There are several categories identified within caste positions of Shudras the very last location in four caste system. The human wherewithal who did précised works on wood for the construction of Houses, Furniture, Wood works for shelters like residences to big palaces, devotional venues like temples, and gathering atmospheres for social purposes- were categorized as “Asari” (*Note-2*) means the Carpenter. The people who undertook other masonry works of above noted suburban areas were began to be known as “Mesthry” (*Note-2*) means the Mason. The people who belonged to the job in which “Moosha” (*Note-2*) has important role was titled as “Moosharis” (*Note-2*). Moosha is the fireplace for the heavy work including works for utensils on metals like Brass, Copper and Bonze. The workers prepared Moosha the mere exact emptiness of the objectivity proposed to be made with solid sustenance and mixture of different metals, poured in to them (Consolidated Emptiness) for creation of constructive enormity including Utensils and other objects. Mooshari polished them to increase its softness and beauty before marketing, production and marketing of which made their livelihood.

The jewelry maker uses small iron hammers and node with them to the seasoned gold for shaping it to beautiful jewelries. He uses small furnace by keeping half burned coconut shelves on a terracotta vase, in order to make his purpose fit. Nodding is called in Malayalam Language “Thattuka” (*Note-3*). The person practices “That” (Node) are called “Thattan” (Nodder) (*Note-3*). Thattan is a caste in Kerala engaged in making of Jewelry. It required further studies to state from which form of four caste system the Thattan is generated because the current “Thattan” is found even from Brahmin caste with Tamil relations. This might have happened because the



fascination on gold by human generations through all past centuries around the Globe. Gold is considered for purity and heavenliness. All job related with god is supposed to be done by Brahmins by the ancient protocols of the four caste system. However the members from families of Thattan sub caste are traditionally acquired the ability for making Jewelry from ancestors and it is considered as a traditional job.

Similarly the works related with devotional purposes are generally deposited to the higher categorical phenomenon. Continuation to establish caste system in Indian scenario in Kerala the highest cast known is Brahmins and the next Caste acquired higher social status is Kshathriyas. Locally, Brahmins are called Namboothiri and Khathriyas as Varmas. Khathriyas took configuration in Kerala with family relationship of Brahmins. As a matter of fact Brahmins had relationship with other castes in the society. The hereditary production of Brahmins with caste people of lower status in the society made an in between caste “Nair” (*Note-4*) in Kerala. Their social status was never up to Brahmin or Kshathriyas. Nair families had relations with both Royal families and Brahmin Families but social setup never permitted conduct Job of the both strata. As a matter of fact Nair families acquired land ownership of large areas by having relations with both ruling caste families and priestly families to them always economy and land ownership of the society were attributed to. They majorly turned cultivation motivators with necessary power for it as they acquired ownership of large cultivation areas.

All of these were results of changes in the society due to practice of “Makkathayam and Marumakkathayam.” In Makkathayam (*Note-5*) when the rights go to the biological children, the rights are handed over to In-laws after the death of power gatherer in Marumakkathayam. When the Marumakkathayam (*Note-5*) was on practice the rights went to the women and her children who got married to the eldest son of the Family. When Makkathayam was the system followed by Brahmin families, Marumakkathayam practiced by Nair families. The sons except the eldest one was not permitted to marry from same caste in Brahmin families during ancient period. So the other sons found his spouse from Nair families or even from lower caste families where the girl children of the family had all rights through Makkathayam. The Brahmin who gets married from Nair families held all functions of his life in his spouse house after marriage and returned his body for burial his home after his death, where his spouse is not permitted to enter due to un-touchability on practice. His children are never considered in the home of his father but live their lives in mother’s house. This was the situation in Nair families even hardly a century ago. Due to the reason of having relation with Brahmin families, the Nair families acquired special status in the society, since the Brahmin were highly considered as they were at higher most consideration in caste ideals because of priestly engagements. They were considered purer than any of other castes and engaged them for the outside labors of the temples including cleaning temple premises, prepare for worship, make garlands for idols etc without any masculinity differences.



There were some new caste formations according to the work they engaged in temples. The people of family who were engaged in making garlands and other similar jobs were known as Warriors (*Note-6*) and the people who made pictures on the floor with color powders were established as Kurup (*Note-7*) families. The meaning of 'Kurickuka' in Malayalam is "making marks". The men who make marks on the floor in temple began to establish as Kurup- the man who makes marks. Even currently making of diagrams on floor and worship to the relevant god or goddess is considered as a devotional right of such families.

A well known festival is held in Vaikkom Mahadeva (*Note-8*) Temple where the deity is Lord Siva. Lord Shiva generated Bhadrakali to end the mischievous, troublesome, cruel activities of Darika the Asura the anti human activist, to satisfy Goddess Bhadrakali for the goodness of human. It began to worship Bhadrakali every twelve years, by drawing her gigantic images in the North East corner of outside at very famous Vaikkom Mahadeva Temple. The devotees draw the iconographic image of Bhadrakali with vegetable colors and worship through song accompanied by village instruments. During the Bhadrakalikalam deliberation, the eldest person of Puthussery Kurup family starts the drawing, known as Kalam kurikkal. (Kalam Kurup). (*Note-9*) It is the right of the Puthussery Kurup family to begin the drawing on floor, fill it with colors, and sing the devotional song with accompaniment of musical instruments. The eldest person from the Kurup family will lead the entire program and complete at the end by removing it.

In some temples the Marar (*Note-10*) family members are also engage in similar works related with Devotional matters such as Garland making with flowers, Blow the Conch in necessary intervals of worship and blow percussion instrument like Chenda in times, Ring the temple bells and help the main priest by drawing various designs for Pujas, Clean the temple premises etc. But in the case of Snake Goddess worships, the people belongs to the sub caste 'Pulluvar' (*Note-11*) were responsible for drawing the picture and worship by singing songs of praises. 'Pulluvar' is belonged to "Shudras" in four caste system.

In certain areas of Kerala (Palghat) performing with leather puppetteering is on practice as a practice of Devotional practice to Lordess Bhadrakali. Puppets are made by drawing the images on deer leather, color and cut them according to generate necessary images for manipulation, make mobility on them by necessary techniques and project them in mobilization to a cotton cloth curtain with help of shadows generated by use of oil lamps. It is accompanied by verbal music with musical accompaniments. The artists are belongs to nomadic families migrated from place to place during past recent several centuries. They speak their own language "araa" (*Note-12*) at home but the language of verbal music describing story killing Darikasura (Demon Darika) is in Tamil. They are vegetarian families, purely devotional, depend up on public performances and assigned performances with receiving payments. These people are belongs to the caste similar to 'Vellalar' (*Note-13*) sub caste in Kerala but Vellalar did not consider them equal



because of Tamil relations of puppet maker families. Any how it can be assumed that they are basically from 'Shudra' caste of four caste system.

The terracotta workers traditionally belong to a caste known as 'Kusava' (*Note-14*) and vegetarians for several generations. The particular caste people are responsible for making terracotta utensils and other images for the entire society. They are vegetarians like the Brahmin Caste people but they are not accepted with social status of Brahmins except they could wear a sacred thread on their shoulder. As a matter of fact they get acceptance equal to Shudras, since they are very much associated with working class of people. Their work is generally included with immense of human labor in it. It required utilizing human power to collect clay from the surroundings by digging wet grounds and paste it with smashing by foot. Make the collected clay sufficiently pasty enough to mould utensils, create utensils with use of a turning mechanical potter's wheel, put the images in shadows to dry, beat them in to accurate shape and fire the kiln using wooden logs to bake. In each step of the entire work of terracotta utensils making requires human labor - the hard continuous work is unavoidable.

There are other social requirements in Kerala like making cloth, is also highly involved by workers who belong to Shudra caste orientation like all other above noted specified works from centuries ago. Neythu (*Note-15*) is the Malayalam word for weaving and the people engaged in such work are noted by Neythukar, the weavers. They are spread all over Kerala and it a mixed commune- people belong to various levels of caste system is regularly engaged in such works. Weaving is time consuming and laborious work in which all members of the family partake with their special interests in various levels of weaving work with use of a locally handmade mechanism called Thary.

Another fully developed orientation we see all over Kerala is the continuation of Mural tradition in Kerala. The paintings are done on temple walls of Kerala, with accuracy in connecting the images with Puranic recourses''. Natural colors are used for the painting process on the walls of Garbha Griha (Sanctum Sanctorium) where the images of God or Goddesses are kept. As a matter of fact the interiors of Hindu temples were never opened for mixed commune of Kerala before Temple Proclamation (*Note-17*). It is clear that the paintings on the walls of temple were painted by artists belongs to higher castes like Kurup, Marar, Nair etc. Currently we could see that people belongs to mixed communal entities are involved in the act of painting as it is a highly appreciated profession and a professional teaching subject in Universities. Also this is important to note that currently all kinds of jobs are engaged by people who belongs to all different communities and different life styles are accepted in new social circumstances. One can easily find a person who belongs to Muslim caste orientation are busy with carpentry works for fabrication of huge ships on wood in northern Kerala and the people belongs to Christian believes are famed as Bronze Bell makers with wide social acceptance. The craft production is out of all centuries old caste demarcations and it is only the quality of production is under consideration.

Conclusion: There are several sub caste formations based on the work they are engaged in, currently existing in the Kerala society but they are exempted describing here due to irrelevance in current topic of discussion. The incident of 1947 (*Note-18*) changed the shape of all caste differentiations and it overtook the changes contributed by all various social reform movements. Indian Constitution took its shape with birth of independence from the rule of British. Article fifteen of that Indian Constitution abandoned celebration of discrimination on the grounds of caste and race.

As per the calculations, in 2003, Govt. of Kerala recognized fifty three Scheduled Castes, thirty five Scheduled Tribes and eighty other Backwards Classes. (*Note-19*). About ten percentage of population belongs to sixty eight various Scheduled Castes as in 2001 during Census of India. Among the total communities there were ninety nine point nine percentages was Hindu, with a countable number of Sikhs and Buddhists in it. (*Note-20*. Thirty five Scheduled tribes are recognized by Census conducted and a little more than one percentage of Scheduled Tribe people among a total of about ninety four percentage of people belongs to Hindu religion. The rest included less than six percentages of Christians and remainder the Muslims. (*Note-20*).

In new social atmosphere and social conditions the caste oriented professional practice turned meaningless and citizens of India began to enjoy regulations singly maintained in our nation. All job practices began to get acceptance only on the basis of merits on particular work. Apart from engaging on work of interest the workers acquired working knowledge from traditional Family background continues explore their wisdom.

List of Images:

Image-1. Evidence of elaborate wood work, Ceiling at Padamanabhapuram Palace supported with decorative pillar.

Image-2, Gopalakrishna Kurup of Puthussery Family performing Kalam Kurikkal.

Image-3. Weaving on progress.

Image-4. Achutha Marar and his disciple working for a Bhadrakalikalam in a devotional space.

Image-5. Image of Shanmukha at Haripad Keezhtrikkovil drawn according to Puranic references.

Image-6. Artist at performance with leather puppets in Kerala.

Image1.



Image-2



Image-3



Image-4



Image-5.



Image-6





Photography: Courtesy- Images 1&5 common files used, Images 2,3,4,. Babu Namboodiri K Photography 2003, Image-8. Suresh, Punalur photography 1990, Image 10.Supported by, Ramachandra Pulavar.

Notes

Note-1. Typical implementation of Four Caste System. Society is divided in to four according to the social requirement of workers in various fields of human life.

Note-2. Asari, Mestry, Moosha and Mooshari are Malayalam words by origin. It means Carpenter, Mason, Mould and Maudlingpersonr respectively.

Note-3. Thattuka and Thattan are Malayalam words means Nodd and Nodder respectively. and Gold smith is the equal word in English.

Note-4. Nair is an in between caste. Their position is between Brahmin and Kshathriya communes. Kept strong and Family relations with both communes and acquired high social status in the society.

Note-5,In Makkhatthayam, The sons and daughters get the power in various angleson demise of the wealthy parents. But in Marumakhatthayam the rights goes to in-laws who marry the son or daughter.

Note 6. Warriar is again an ambalavasi family.

Note-7. Kurikkuka is Draw the image is in Malayalam. As person who draws the image in powder colors may be called Kurup to connect him with the event.

Note-8. Vaikkam Mahaveva Temple is well known venue of devotional Practices for past several centuries

Note-9. Read Note number 7and 8.

Note 10. Marar is another famous Temple Caste, who majorly involve in temple works like Garland making and cleaning jobs of the temple premises. They are with equal status of Nair in society but more divinity is claimed due to engagements in temple related heavenly jobs.

Note 11. Pulluvar is belonged Shudra commune of Four Caste system, their devotional practices were different until they began to be permitted to enter in Temples by Temple Proclamation of Balarama Varna Maharaja of Travancore, which permitted all Hindu caste believers to enter Temples. Pulluvar sing songs satisfy Snake Goddesses with accompaniment of certain musical instruments. After Temple Proclamation we saw them conducting worship of their Gods and Goddesses within temple premises.

Note-12. Aara, is a mixed Language used by Leather puppeteers in their home to communicate with their family members.

Note 13. Vellalar of Kerala does not agree with it equal status of puppeteers due puppeteers Tamil relations.

Note-14. Kusavas of Kerala are sharing equal social status of Shudras, claims equal status with Brahmins because they are vegetarians and wear sacred thread for centuries.

Note-15. Neythu, and Neythukar in Malayalam means Weaving and weavers respectively.

Note-16. Creating Mural painting on walls Kerala Temples with vegetable colors is a tradition of several centuries. . More than 170 venues were marked with presence of stylistic mural painting in Kerala.



Note17. Temple proclamation declared right of all Hindus without any discrimination to enter temples for Devotional purposes. His highness the Sree Chithira Thirunal Balarama Varma Maha Raja of Travancore Kingdom on 24 the birthday of him in 1936 made the announcement of Temple Proclamation bill which gathered wide appreciation for its humanitarian approach.

Note-18. Independence marks the end of British rule in 1947 and the establishment of a free and independent Indian nation which marked a sea of changes in lives.

Note-19. As referred in Wikipedia "Official. Archived from the original on 15 February 2008.

Note-20. As referred in Wikipedia "Data Highlights: The Scheduled Castes" (PDF). Census of India 2001. 27 March 2007. Retrieved 8 November 2011.

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DEVELOPMENT AND CHARACTERIZATION OF FRP WITH POLYMYRA AND GLASS

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ABSTRACT

The conventional materials are vanishing slowly due heavy consumption and less generation. It is high time for researchers to develop alternate materials for replacing the conventional materials like wood, metals. The properties of various materials were also improved with addition of other ingredients and reinforcement. As a part of this, the authors have developed high strength, low weight composite material i.e. Fiber reinforced plastic with Polymera as resin and glass as fibers using simple hand layup technique. The characterization was carried out to study the mechanical properties of the FRP and to identify the applications. It is found that the results are good and have promising automotive and aerospace applications.

Key words: Composites, Palmyra Fibers, Glass Fibres, Treatment, Mechanical Properties

1.INTRODUCTION

1.1 Introduction to composite materials:

A composite is a structural material that consists of two or more constituents that are combined at a macroscopic level and are not soluble in each other. One constituent is called the reinforcing phase and the one in which it is embedded is called the matrix which is a bulk part of a composite. The reinforcing phase material may be in the form of fibres, particles, or flakes. The matrix phase materials are generally continuous. The reinforcement will improve the composite mechanical properties. Examples are graphite/epoxy, Kevlar/epoxy, and boron/ aluminum composites. Matrix may consist of any of the three basic material types mainly polymer, ceramics and metals. Concrete reinforced with steel and epoxy reinforced with graphite fibres are some of the composites. Ashok Kumar et al. [1] developed a composite with epoxy as matrix, the sisal and glass fibres with and without alkali treatment as reinforcement by hand lay-up technique and mentioned that hardness is high for 2cm fibre length when compared with 1 and 3cm fibre lengths and also treated composites have higher hardness compared with untreated composites. Baley C [2] studied exploration of mechanical properties of natural fiber reinforced composite with Palmyra fibers was done by using analytical method and experimental method and experimental results were compared with the analytical result and error percentage was determined. K.John, S.Venkata Naidu [3] conducted sound absorption test on Palmyra and Jute fiber reinforced epoxy composite with the volume fraction of 50-50 and 60-40, 70-30. K.John, S. Venkata Naidu [4] experiments resulted in improvement in both tensile and flexural strength of the epoxy composites with short palmyra fibers. SILVA F.A et.al [5] fabricated by reinforcing untreated and treated palmyra palm petiole fiber and are



tested for their mechanical, dielectric properties as per ASTM procedures and found that it is a reasonably light weight insulating material. P. Mani [6] developed the composites with Palmyra hybrid composites and coir fibre and found that Palmyra with 40% weight and coir fiber with 60% weight composite had the highest percentage of water absorption. P Sivasubramanian [7] investigated the effect of Palmyra palm fiber on natural rubber vulcanizates and revealed that Palmyra palm fiber can replace carbon black up to 57%. Harriette L [8] investigated effect of chemical treatment and addition of chalk powder (additive) to the composite on thermal and mechanical properties of (Palmyra bract fiber) natural fiber reinforced polyester composites and mentioned that with addition of chalk powder to the treated composite Thermal conductivity, Specific Heat capacity, Thermal diffusivity of the composite are increased. K.Manikantesh [9] studied the effect of the glass fiber content in the Palmyra fiber waste/glass hybrid composites in polyester matrix resulted in composites with improved mechanical properties and moisture absorption. Olawale Monsur Sanusi [10] studied the mechanical and physical behavior of palm fiber reinforced ABS composites. Water absorption property showed an increment with the increase of fiber content in the composites. In the present work the composites were developed and tested for their properties were studied.

2.EXPERIMENTATION

In the present research work glass moulds are fabricated for epoxy/Glass fiber Nano composites preparation. Glass moulds are made by different dimensions of ASTM standard like tensile test, flexural tests, impact test and compression test. The composite was prepared by hand layup technique by rule of hybrid mixtures with different compositions listed below. Half of the composite samples are treated and the other half tested without treatment. The composites were cut in to ASTM sizes for testing. Tensile strength, flexural (bending), compression tests were carried out on par with ASTM D 53455. Tensile and flexural tests were performed on Instron universal testing machine (3369). The cross head speed was maintained 50 mm/min. All the tests were accomplished at a room temperature of 23 °C. At least, 5 samples were tested for each composition and results were tabulated.

Combinations:

1. Epoxy + Fiber (Palmyra+ Glass Fiber)
90% 10% (25)% (75)%
2. Epoxy + Fiber (Palmyra + Glass Fiber)
90% 10% (50)% (50)%
3. Epoxy + Fiber (Palmyra + Glass Fiber)
90% 10% (75)% (25)%
4. Epoxy + Fiber (Palmyra + Glass Fiber)
90% 10% (100)% (0)%

Work pieces after cutting for testing

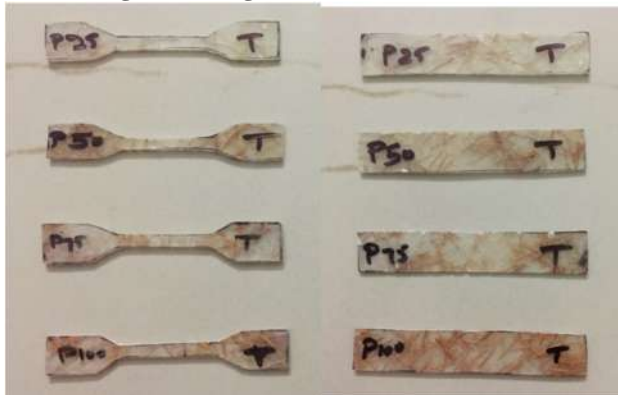


Fig.1 Tensile test specimen

Fig.2 Flexural test specimen



Fig.3 Compression test specimen

Fig.4 Impact test specimen

3.RESULTS and DISCUSSIONS

The characterization of the composites reveals that the different ratios of Palmyra palm and glass fiber is having significant effect on the mechanical properties of composites. The properties of the composites with different ratios of Palmyra under this investigation are presented in Table 1.

Table 1 RESULTS

S.No	Epoxy (%)	Natural fiber (%)	Artificial fiber (%)	Tensile strength (Mpa)	Tensile modulus (MPa)	Flexural strength (Mpa)	Flexural modulus (Mpa)	Compression strength (Mpa)	Compression modulus (Mpa)	Impact strength (joules)
Untreated										
1	90	10(25)	10(75)	19.63	1650.21	51.33	4448.31	17.36	1428.24	2.45
2	90	10(50)	10(50)	27.68	2333.17	72.58	5509.77	31.85	1920.78	4.2
3	90	10(75)	10(25)	14.52	2492.06	61.39	6399.95	10.43	1285.75	1.8
4	90	10(100)	10(0)	15.68	3607.18	45.86	3197.85	39.80	1346.58	0.4
Treated										
1	90	10(25)	10(75)	23.52	2330.15	71.87	8115.64	27.36	1760.62	4.4
2	90	10(50)	10(50)	29.37	2628.83	95.83	7864.64	52.37	2893.73	5.6
3	90	10(75)	10(25)	16.59	2876.45	80.61	8969.59	38.26	2198.64	2.8
4	90	10(100)	10(0)	21.19	3839.97	72.23	4900.8	59.34	2789.75	1.67

3.1. Discussions

The test results of mechanical properties are plotted, analyzed and discussed in the following articles.

3.1.1. Tensile strength

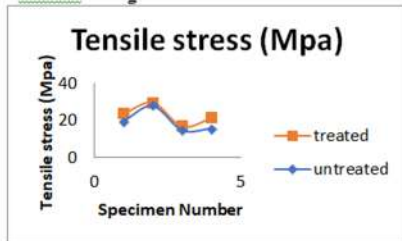


Fig. 5: Tensile stress vs specimen number

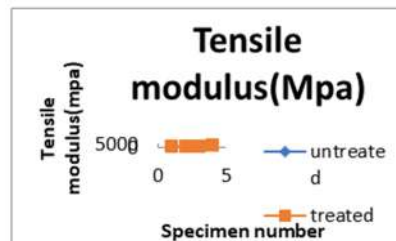


Fig. 6: Tensile modulus Vs specimen number

From the fig.5 it is observed tensile strength of treated fiber was high compare to untreated fiber composites because of proper adhesion of fiber and matrix material proper bonding was created between them. The maximum tensile strength of an untreated fibred composite is 27.68 Mpa (for 50% weight of fiber). Treated fibred composite tensile strength is 29.37 Mpa (for 50% weight of fiber). The % of tensile strength is increased for treated fiber composite compared to untreated composite by 5.75%.

3.1.2. Tensile modulus

From the fig.6 it is observed tensile modulus of treated fiber was high compare to untreated fiber composites because of proper adhesion of fiber and matrix material proper bonding was created between them. The maximum tensile modulus of an untreated fibred composite is 3607.18Mpa (for 100% weight of fiber) and for treated fibred composite is 3839.97Mpa (for 100% weight of fiber). The % of tensile stress is increased for treated fiber composite compared to untreated composite by 6.06%.

3.1.3. Flexural strength

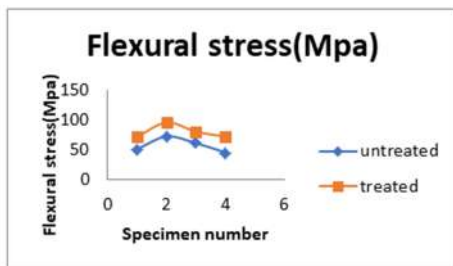


Fig. 7 Flexural stress vs specimen numbers

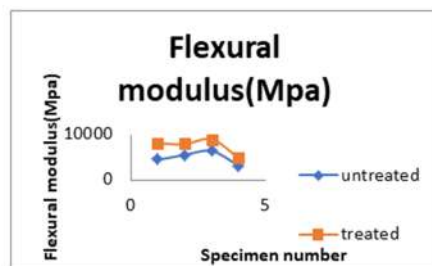


Fig. 8 Flexural modulus vs specimen number

From the fig.7, it is observed flexural strength of treated fiber was high compare to untreated fiber composites because of proper adhesion of fiber and matrix material

proper bonding was created between them. The maximum flexural strength of an untreated fibered composite is 72.58Mpa (for 50% weight of fiber). Treated fibered composite flexural strength is 95.83 Mpa (for 50% weight of fiber).The % of flexural strength is increased for treated fiber composite compared to untreated composite by 24.26%.

3.1.4. Flexural modulus

From the fig.8, it is observed flexural modulus of treated fiber was high compare to untreated fiber composites because of proper adhesion of fiber and matrix material proper bonding was created between them. The maximum flexural modulus of an untreated fibered composite is 6399.95Mpa (for 75% weight of fiber). Treated fibered composite flexural is 8969.59Mpa (for 75% weight of fiber).The % of flexural modulus is increased for treated fiber composite compared to untreated composite by 28.64%.

3.1.5. Compression stress

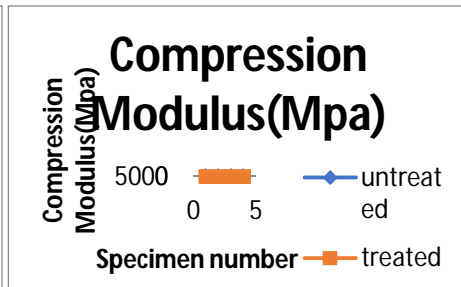
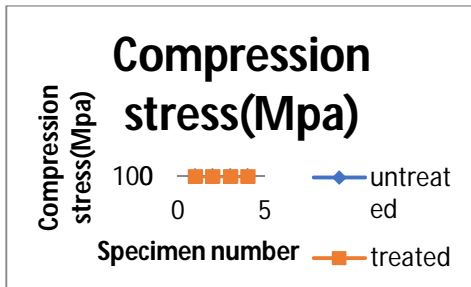


Fig. 9 Compression stress Vs specimen

Fig. 10 Compression modulus Vs specimen

From the fig.9 observed compression stress of treated fiber was high compare to untreated fiber composites because of proper adhesion of fiber and matrix material proper bonding was created between them. The maximum compression stress of an untreated fibered composite is 39.80 Mpa (for 100% weight of fiber) and for treated fibered composite is 59.34Mpa (for 100% weight of fiber). The compression strength is increased for treated fiber composite compared to untreated composite by 32.92%

3.1.6. Compression modulus

From the fig.10 observed compression modulus of treated fiber was high compare to untreated fiber composites because of proper adhesion of fiber and matrix material proper bonding was created between them. The maximum compression modulus of an untreated fibered composite is 1920.78Mpa (for 50% weight of fiber) and for treated fibered composite is 2893.73Mpa (for 50% weight of fiber). The compression strength is increased for treated fiber composite compared to untreated composite by 33.62%.

3.1.7. Impact strength

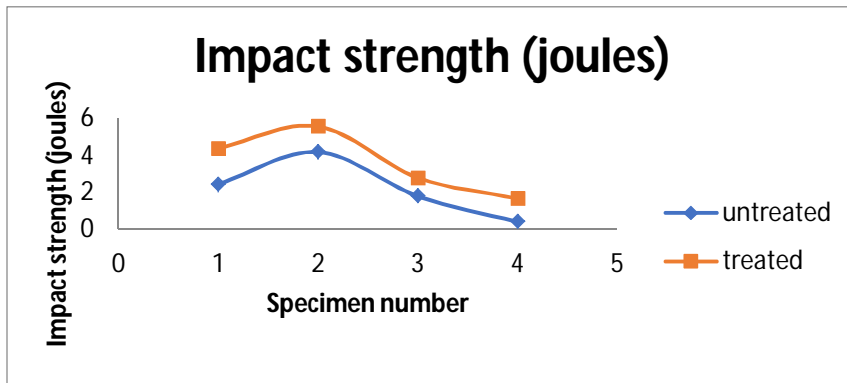


Fig. 11 Impact strength vs specimen numbers

From the above results observed (Fig. 11) impact strength of treated fiber was high compare to untreated fiber composites because of proper adhesion of fiber and matrix material proper bonding was created between them. The maximum impact strength of an untreated fibered composite is 4.2 joules (for 50% weight of fiber) and for treated fibered composite is 5.6 joules (for 50% weight of fiber). The compression strength is increased for treated fiber composite compared to untreated composite by 25%.

CONCLUSIONS

This experimental investigation of mechanical behavior of palmyra fiber reinforced epoxy composites leads to the following conclusions:

- This work shows that successful fabrication of a palmyra and fiber reinforced epoxy composites with different ratios of palmyra and glass fiber is possible by simple hand layup technique.
- It has been noticed that the mechanical properties of the composites such as tensile strength, flexural strength, impact strength of the composites are greatly influenced by varying the weight ratios of palmyra and glass fiber.
- All these results indicate that the palmyra and glass fiber, epoxy composites might have promising automotive and aerospace applications.

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GREEN SUPPLY CHAIN MANAGEMENT PRACTICES OF THE MEDIUM ENTERPRISES

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Abstract:

In recent years the natural environment becomes a major global issue. It requires immediate action by business organizations, governments, and society to achieve a balanced growth that tries to achieve economic and social objectives without scarifying the environment. In this regard, business need to place equal footing both on the environment and on their business need to place equal footing both on the environment and on their business objectives. Currently environmental issues in supply chain are significantly growing partly due to wider debate on how industry meets the challenges of sustainability. This paper has made an attempt to analyze the supply chain management focuses on the efficient and responsive system of production and delivery from raw material stage to final consumer.

Keywords: Supply Chain Management, Consumer, Footing and Environmental Issues

Introduction

Natural resources including mineral ores and fossil fuels, agricultural productivity and the self-purification capacity of the natural environment all have their owe limits. Due to increasing human and industrial impacts on the environment, environmental issues become more intense and widespread. Irrational resource consumption together with irresponsible environment pollution resulting resource consumption together with irresponsible environmental pollution resulting from the entire product life cycle i.e., raw material acquisition, manufacturing, use and disposal are the main reason this global environmental carrying capacity is being exceeded. Besides, more people are aware of the world's environmental problems such as global warming, toxic substance usage, and decrease in non-replenish resources. Increasing awareness about environmental protection in India and world, the green trend of conserving the earth' resources and protecting the environment is overwhelming there by exerting pressure on industries in India and worldwide. This calls for considering the issues of sustainable development in business operations. Recent environmental regulations initiated by governments and other third party organizations in many parts of the world have directed companies to produce strategic environmental companies to produce strategic environmental plan on implementing green supply chain management practices. Thus pressures from various stakeholders, posed a great challenge for supply chain managers in integrating sustainable practices in managing their supply chains.

Concept of Green Supply Chain Management

Environmentally sustainable supply chain management has emerged as an important organizational philosophy to achieve corporate profit and market share objectives by reducing environmental risks and impacts while improving ecological efficiency of these organizations and their partners. An environmentally conscious



supply chain, also called a green supply chain is a new concept appearing in recent literatures. Green supply refers to the way in which innovations in supply chain management or sustainable supply chain management materials management, eco accounting green distribution/marketing and reverse logistics.

Many authors have defined green supply chain management in various ways keeping a different perspective in front. Patrick defines green supply chain management as ‘the process of using environmentally friendly inputs and transforming these inputs into outputs that can be reclaimed and reused at the end of their lifecycle thus, creating a sustainable supply chain. According to Srivastva green supply chain management including product design, material sourcing and selection, manufacturing processes, delivery of the product its useful life. Olugu, fines green supply chain management as “the set of supply chain management policies held, actions taken, and relationship formed in response to concerns related to the natural environment with regard to the environment the design acquisition, production, distribution, use, reuse and disposal of the firms goods and services. It was further described as an environmental improvement strategy and operational initiative which organizations adopt in order to address environmental issues within their supply chains. Green supply refers to the way in which innovations in supply chain management and industrial purchasing may be considered in the context of the environment. Hervani et al. indicate there are various activities involving which are embedded in green design green procurement practices, total quality environmental management, environmentally friendly packaging, transportation, and various product end-of-life practices. Enterprises in today’s competitive workplace, which has emerged as a new innovative approach to achieve both financial and environmental benefits simultaneously, by reducing environmental risk and impact.

Green supply chain management has emerged as an important organizational philosophy to achieve corporate profit and market share objectives by reducing environmental risks and impacts while improving ecological efficiency of these organizations and their partners. The objective of green supply chain is to eliminate or minimize negative environmental impacts and waste of resources from the extraction or acquisition of raw materials up to final use and disposal of products. Green supply chain management has a key role in ensuring that all of these factors are addressed. Therefore, green supply chain management has emerged as an important new archetype for enterprises to achieve profit and market share objective by lowering the environmental risks and impacts and while raising their ecological efficiency.

Statement of the Problem

Green supply chain management practices have emerged as a systematic approach to balance the economic and environmental sustainability of firms. Besides the economic growth increases the level of energy and material consumption which contribute to the environmental issues and resource depletion problem.

Increasing pressures from a variety of directions have caused the supply chain managers to consider and initiate implementation of green supply chain management practices to improve both their economic and environmental performance. The various barriers to implementation of green supply chain management are lack IT implementation resistance to technology advancement adoption, lack of organization



encouragement, poor quality of human resources, market competition and uncertainty, lack of government support system, lack of implementing green practices, lack of top management commitment, cost implications, supplier reluctance to change towards green supply chain management and unawareness of customer. Thus, it is highly impetorative to conduct an empirical research on the green supply chain management and its implication towards sustainable supply chain performance. This research looks to find answers to following key questions. To what extent green supply chain management practices are adopted among the select medium enterprises? What are the outcomes for medium enterprises that results from the green supply chain management in the medium enterprises?

Objectives of the Study

- 1. To find out the drivers to implement green supply chain management in the select medium enterprises in Cuddalore district.
- 2. To measure the performance of various dimensions of green supply chain management practices in medium enterprises.
- 3. To find out the implementation barriers of the green supply chain management.

Scope of the Study

The study focuses on medium enterprises engaged in manufacturing operations in Cuddalore districts. Green supply chain management is a vast subject. The proposed study considers drivers to implement green supply chain management, performance measurement of green supply chain management, implementation effects and implementation barriers of the green supply chain management only.

Tools for Data Collection

The practices of the green supply chain management adopted in the medium enterprises in Cuddalore district. Since the primary data is an essential part of the research it has been collected from 100 medium enterprises with the help of questionnaire. The secondary data has been collected mainly from journals, magazine, government reports, books and unpublished dissertations.

Frame work Analysis

The data to be collected for the purpose of the study will be edited quantified, categorized and tabulated in logical order. In analyzing data, statistical tools such as chi-square test, analysis of one-way variance, analysis of co-efficient of variation multiple discriminate function analysis, multiple regression analysis and percentage analysis are employed in this study.

ANALYSIS AND INTERPRETATION

Green Supply Activities of Different Size of Industries

GREEN SUPPLY ACTIVITIES	MICRO INDUSTRY	SMALL INDUSTRY	MEDIUM INDUSTRY
No green	1	1	0
Early	0	28	20
Beginning	0	7	52
intermediate	0	2	3
Advanced	0	1	1
Total	1	39	76

Source: Primary Data

Size of Industries

The table is presenting the chi-square test results applied to measure association between the state of green supply chain management process and the size of an organization. Level of significance = 5% Degree of freedom=12 as the calculated value of chi-square is greater than its tabulated value so it leads to the rejection of hypothesis and it can be concluded that there is an association between the state of green supply chain management process and the size of an organization. Factors leading to the development of green supply chain Gain legitimacy graded at 7th place with a weighted mean score of 2.87 trailed by pressure from NEGOS at 8th rank with a weighted means of score 21.60. Green supply management process and ISO 14000 certification achieved by an organization chi-square test is applied as presented in the table given below:

Green Supply Management Process and ISO 14000 Certification

Green supply activities	ISO 14000 Certification		Total	Calculation value
	Yes	no		
No green	0	2	2	
Early	14	34	48	
Beginning	18	41	59	
Intermediate	5	2	7	13.95
Advanced	4	0	4	
Total	41	79	120	

Limitations of the Study

In any study bearing on attitude of the respondents, incomplete and non-responses to some questions could not be avoided. However, considerable care is exercised in making the study as objective and systematic as possible. The selection of a representative sample would bring more illuminating and comprehensive database for decision making.

Conclusion

Majority of the employees reported that their redesign supply chain network to reduce transportation operations to reduce manufacturing waste, increase use of energy source and reduce material from product. Green supply chain follows by environmental commitment of top management. There is an association between the state of green supply chain management process and ISO 14000 certification achieved by an organization. To consider and initiate implementation of green supply chain management practices to improve both economic and environmental performance, the organizational encouragement and support in implementing green practices to the medium enterprises are essential.

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TRENDS OF FEMALE EMPLOYMENT IN INDIA

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Abstract

The status of female employment in India has been the subject of much debate of late in the national fora, due to its intrinsic relationship with female empowerment. The Economic Survey 2017-18 mentions an Organisation of Economic Cooperation and Development (OECD) analysis that indicates that the proportion of women who work has steadily reduced over time, from 36 percent to 24 percent in a decade, (when examined in 2015-16) signalling a decline of 33.3 percent in Female Labour Force Participation (FLFP) in ten years. It also showed that the gender gap in Labour Force Participation Rate (LFPR) is more than 50 percentage points in India. As per the Economic Survey 2017-18, 4.6 crore HHs were provided employment with a total of 177.8 crore person days during 2017-18. Out of the total number, 54 percent of person days were generated by women. Further, recent trends from 2013-14 to 2017-18 highlight that participation by women in the total person days generated has been more than 50 percent. In spite of the various programmes of the government, the country has not made great strides in female employment or entrepreneurship, as shown by the declining trend in FLFPR.

Keywords: Female, Employment, Programme, Labour, Structural and entrepreneurship.

Introduction:

The status of female employment in India has been the subject of much debate of late in the national fora, due to its intrinsic relationship with female empowerment. The Economic Survey 2017-18 mentions an Organisation of Economic Cooperation and Development (OECD) analysis that indicates that the proportion of women who work has steadily reduced over time, from 36 percent to 24 percent in a decade, (when examined in 2015-16) signalling a decline of 33.3 percent in Female Labour Force Participation (FLFP) in ten years. It also showed that the gender gap in Labour Force Participation Rate (LFPR) is more than 50 percentage points in India. This gender gap is visible in the plot for Median Earnings as well. As the Survey Report notes, women workers often constitute the most vulnerable of the workforce as they are



“employed in the least secure, informal, unskilled jobs, engaged in low-productivity and low-paying work”.

Annual trends in Female Labour Force Participation Rate (FLFPR) in India since the turn of the millennium. It stood at 34 percent in 2000, peaked at 37 percent in 2005, but declined to 27 percent in 2017, effectively reducing by 20.5 percent since 2000. To quote the Economic Survey 2017-18, which makes a case for gender equality, “Addressing the meta-preference in favour of sons and empowering women with education and economic agency are critical challenges for the Indian economy”. This statement brings out the cyclical nature of the problem: neglect of the born girl child leading to adverse health and education outcomes, which in turn, affects their economic productivity and capacity to contribute or earn an income, impacting adult women’s mobility, decision-making power and social and eventual economic emancipation. Therefore, women’s employment is critical for (1) instrumental reasons related to efficiency and productivity of the economy, as well as (2) the innate reason of women’s empowerment.

Reasons of Low Female Employment in India:

Due to the varied nature of the population composition and the differing statuses (both economic and social) which women enjoy across different states, the reasons for low female employment are varied. One of the chief problems which plague any analysis of female employment is the lack of government study on the status on female employment in India. This analysis becomes all the more relevant as it is revealed that, in comparison to other South Asian countries, India does not perform well in terms of Female LFPR. For a period of ten years from 1990 to 2013, while Female LFPR has grown in countries like Bangladesh and Pakistan and stabilized in Sri Lanka, Female LFPR has declined in India by 6.9 percentage points, from 34.1 percent in 1990 to 27.2 percent in 2013.

While an oft-cited reason leading to low economic empowerment of women, it is of paramount importance driving low female employment. Gender differences and consequently preference for the male child and adult has an impact on the economic capacities of women from birth. Male preference and consequently low regard for females leads to inadequate health and education opportunities, from a very young age. Improper nutrition and lack of education deters women from being healthy contributing members of the work force. While access to education for females has increased, many economists have theorized that as education empowers women, employment choices for them become more stringent. Both social norms and lack of quality employment opportunities have an impact on the employment options for women with secondary and tertiary education. However, this is more of any urban



phenomenon, a significantly larger portion of women in the rural population are part of the work force.

This reason is especially valid for rural regions, employment opportunities in rural areas have not kept pace with the growth in the urban regions. The Unemployment Rate (UR) for women in the rural population is 47/1000 which is significantly higher when compared to male UR standing at 21/10003. While domestic duties are a major impediment to any kind of employment, few or the lack of major formal employment opportunities for rural population have particularly hurt the progress of economic empowerment for females. Even entrepreneurship opportunities for rural population are hard to come due to lack of banking infrastructure in the far-flung areas and weak market linkages in others. It is safe to say that while these factors hurt the economic interests of all population, they especially have an overwhelming impact of female employment as they are the more vulnerable gender.

Review of Literature:

Being a recent move, there have been various researches on different aspects of the initiative ranging from the economical to social and ethical dimensions. Some of these researches retrieved through internet searches have been reviewed here.

Ghosh and Mukhopadhyay (1984) reported a drastic reduction in number of female workers and their work participation rates. They explained this situation mainly in terms of the dominant position of the male in the workforce, the low level of overall employment, and the adverse sex-ratio of females in the population. They also examined the issue of inter-state variations in female employment. They found that northern States like Haryana, Uttar Pradesh (UP) and Punjab are characterised by low participation rates and southern states like Tamil Nadu and Kerala show higher participation rates.

International Institute for Labour Studies (2004) has looked at the quality of women employment. The study explains that since most women in India are engaged in part-time work, informal sector, and in the form of non-unionised labour, therefore, it is highly likely that they are employed in low-quality work.

Unni and Rani (2003) have examined the issue of informalisation of employed women. Their study finds rising informalization of the labour force in India and other South Asian countries. They argue that sub-contracting and loose contracts are primary reasons that are responsible for this trend.



Chandrashekhar and Ghosh, (2007) in their analysis of urban female employment have found that there has been a sharp decline in the casual employment of urban women. They have observed that there has been an increase in self and regular employment for urban women.

Srivastava & Srivastava, (2009) Women's employment is crucial for raising their living standards and well-being. However, economic well-being and welfare of women may not improve if they are engaged in low-paying distress-driven work.

Objectives :

The Main objectives of this paper is based on following headings:

- To Examine the Status of women employment in India.
- To Evaluate the Sector wise women employment in India.

Methodology:

The method used in this paper is descriptive-evaluative method. The study is mainly review based. It is purely supported by secondary source of data, i.e. books, journals, papers and articles and internet.

Sectorial Employment of Females in India:

The broad sectoral classification of Employment for urban and rural females. The proportion of urban women engaged in agriculture has gradually declined over time from around 29 percent in the 43rd round to around 11 percent in the 68th round. This sharp decline over this 24-year period from 1987-88 to 2011-12 is very much expected in the context of structural transformation following the economic reforms of 1991. However, the proportion of urban women engaged in the manufacturing sector nearly remains constant upto 66th round. However, there has been a significant increase of urban females to 44 percent in the manufacturing sector. Given the export-oriented and liberalization policies of the government, this stagnancy of urban female employment from 43rd round to 66th round is indeed surprising. Chandrashekhar & Ghosh (2007) have examined this aspect in detail and have pointed to the chances of misclassification of employment in the available data. They find that while the employment of urban women according to principal status does not display any clear trend, but the employment of urban women according to subsidiary status has been rising steadily. They have explained that home-based subcontracting work does not get included in the employment data and thus could be an explanation of the stagnancy of female employment in manufacturing. However female employment in manufacturing has increased significantly between 66th and 68th round.



For urban women, employment in other services increased from around 28 percent in 43rd round to around 55 percent in the 68th round. The service sector employment needs to be studied at a disaggregated level to examine the nature of service sector jobs being created for urban women. For rural women, the proportion employed in agriculture has declined from about 85 percent in the 43rd round to about 75 percent in the 68th round. Srivastava & Srivastava (2009) have labelled this slow movement out of agriculture as “creeping feminisation” of agriculture. The concentration of women in agricultural would not significantly improve their well being as proportion of rural women engaged in manufacturing has been very low and stagnant except an increase of 16.7 percent in the 68th round. Similarly, the employment in other services is also very low and has increased only marginally.

Urban and Rural Employment:

It is important to examine trends of female unemployment across urban and rural India, given that the nature of employment and economic activity in these areas differ significantly. This section provides a disaggregation of female employment and Female (LFPR) in urban and rural areas. Further, it attempts to identify and evaluate government interventions pertaining to female employment in both domains.

According to the Census 2011, the total number of female workers in India is 149.8 million and female workers in rural and urban areas are 121.8 and 28.0 million respectively. Out of total 149.8 million female workers, 35.9 million females are working as cultivators and another 61.5 million are agricultural labourers. Of the remaining female workers, 8.5 million are in Household (HH) Industry and 43.7 million are classified as other workers.

This ratio for the female belonging to agricultural labour, cultivators, and non-farm HHs have increased by 8.49, 6.05 and 4.63 percentage points between 2004-05 and 2011-12. Withdrawal of female from labour-force was highest among agricultural labour HHs followed by cultivators and non-farm HHs both in percentage and absolute terms. The Economic Survey posits that this drop in FLFP in agriculture could be due to the structural transformation of agriculture. Increasing mechanisation in agriculture has resulted in the availability of machines for farm work traditionally undertaken by women, thus reducing the demand for female agricultural labour. In the case of males, withdrawal from work-force was found only among the agricultural labour HHs.

Table: 1
Labour Force Participation Rate and Unemployment Rate (per 1000) for persons aged 15 yrs & above according to Usual Principal Status Approach (ps) for each State /UT

Sl.No	States/UTs	Labour Force Participation Rate (per 1000)		Unemployment Rate (per 1000)	
		Rural (Female)	Urban (Female)	Rural (Female)	Urban (Female)
1	Andhra Pradesh	561	221	34	95
2	Arunachal Pradesh	403	163	108	98
3	Assam	202	216	136	199
4	Bihar	149	76	75	147
5	Chhattisgarh	623	208	10	120
6	Delhi	187	120	92	83
7	Goa	240	250	269	113
8	Gujarat	240	250	9	19
9	Haryana	156	118	61	186
10	Himachal Pradesh	170	169	194	19
11	Jammu & Kashmir	99	122	318	130
12	Jharkhand	226	130	116	190
13	Karnataka	362	264	16	31
14	Kerala	312	303	308	290
15	Madhya Pradesh	203	87	87	73
16	Maharashtra	463	128	16	55
17	Manipur	330	262	33	117
18	Meghalaya	466	471	54	208
19	Mizoram	642	439	12	64
20	Nagaland	590	388	65	172
21	Odisha	196	131	116	113
22	Punjab	108	117	186	231
23	Rajasthan	250	91	123	138
24	Sikkim	331	319	351	465
25	Tamil Nadu	509	250	61	67
26	Telangana	529	267	17	148
27	Tripura	316	308	505	467
28	Uttarakhand	220	115	116	95
29	Uttar Pradesh	121	76	200	262
30	West Bengal	199	160	91	129
31	Puducherry	341	279	136	81

Source: Report on 5th Annual Employment-Unemployment Survey 2015-16, Ministry of Labour and Employment Labour Bureau.

For rural employment, the MGNREGS (Mahatma Gandhi Rural Employment Guarantee Scheme) provides a right-based programme to boost labour-force participation. Similarly, the Maternity Benefits (Amendment) Act 2017



provides a policy framework to make industries more women-friendly, thus having a great impact on urban female employment.

The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) is the major government initiative that provides a platform to women for employment opportunities. The MGNREGS reserves minimum 33 percent for women participation and provides 100 days of guaranteed wage employment in a financial year to every rural HHs. Women participation has increased significantly and perceived it giving them a sense of independence and security.

As per the Economic Survey 2017-18, 4.6 crore HHs were provided employment with a total of 177.8 crore person days during 2017-18. Out of the total number, 54 percent of person days were generated by women. Further, recent trends from 2013-14 to 2017-18 highlight that participation by women in the total person days generated has been more than 50 percent. States like Kerala, Tamil Nadu, Rajasthan, Telangana shows a greater percentage point of women participating under MGNREGS.

Further, the Ministry of Women and Child Development (MoWCD) has launched 'Mahila E-Haat', a unique direct online marketing platform leveraging technology for supporting women entrepreneurs/Self Help Groups/NGOs for showcasing the products/services which are made/manufactured undertaken by these women. Currently, this platform has impacted directly and indirectly over 26,000 SHGs and 3.75 lakh beneficiaries.

Female Entrepreneurship in India:

Given the numerous kinds of barriers that women face in obtaining and retaining 'good jobs', entrepreneurship provides an alternate avenue to productive participation in the workforce. However, India is not performing well on the index of female entrepreneurship either, with only 21.49 percent of total establishments and 13.41 percent of non-agricultural establishments in India being owned by women.

As in the case of employment, women face a number of constraints in pursuing entrepreneurship as a means of livelihood. The most important factors pertaining to business success are, a good business proposition, availability of adequate funding, and an understanding of how to set up and manage the business. A study on women's entrepreneurship conducted by the United Nations Development Programme (UNDP) reveals based on surveys that an absence of business management skills is a major barrier faced by women with entrepreneurial aspirations. The barriers that exist in this domain are also closely linked to the structural challenges that women face given existing gender norms. For instance, women can conceptualise ideas for and enter only



select business domains. However, the most significant barrier is posed by accessibility to finance for setting up businesses, with around 70 percent of women surveyed across 4 cities citing access to credit as a barrier.

In recognition of the fact that credit access is the most critical challenge, the Government of India has introduced schemes to mitigate the situation. The Pradhan Mantri Mudra Yojana (PMMY) was initiated to provide micro or small businesses with access to institutional finance up to Rs.10 lakhs. The scheme prioritises women entrepreneurs with almost 75 percent of loans under PMMY catering to women borrowers. As of December 22, 2017, more than 7.55 crore loans have been extended to women borrowers. In addition to providing loans, the PMMY refinancing agency MUDRA (Micro Units Development and Refinance Agency) offers a 0.25 percent rebate on refinance interest rate to women borrowers.

In addition to PMMY, the Government of India also instituted the Stand Up India scheme with a similar objective. The scheme aims to provide institutional financing in the manufacturing, services or trading sector between Rs. 10 lakh and Rs. 1 crore to at least one Scheduled Caste(SC)/Scheduled Tribe(ST) borrower and one woman borrower per bank branch. With an overall target of at least 2.5 lakh borrowers, it should provide credit to around 1,.25 lakh women borrowers. As of 4th March 2018, Scheduled Commercial Banks had sanctioned 45,004 loans to women entrepreneurs under Stand Up India.

Government efforts have not been restricted to the domain of facilitating access to institutional credit. The Ministry of Micro, Small and Medium Enterprises (MSME) has launched a portal called 'Udyam Sakhi' to address the issue of business management skills. This will provide a platform to provide women entrepreneurs with the support and guidance required at various levels of entrepreneurship. Despite these multi-dimensional efforts spearheaded by the government, the Mastercard Index of Women Entrepreneurs (MIWE) 2018, India ranks 52nd out of 59 countries on the availability of conditions to promote female entrepreneurship.

Conclusion:

The female workers have much lower participation rates than their male counterparts and hence comprise a marginalized section. The share of rural women in the workforce is much higher than those in urban. However, women in rural India are clearly in an inferior position in the labour market vis-à-vis their urban counterparts. This is evident from the fact the most of the rural women are casually employed and are engaged in low-paying agricultural work. During 2011-12, more than 42 percent of rural women were casually employed while this figure stood at less than 15 percent for urban women. This implies



that most rural women work long hours in poor working conditions. Moreover, most of the rural women are predominantly engaged in agriculture where earning opportunities are low. On the other hand, the proportion of urban women engaged in agriculture has been declining rapidly and most of the urban women are finding work in 'services' sector. The wage differentials between rural and urban women are also striking. Rural women earn considerably lower wages than urban women, and the disparities have not shown any tendency to decline. In spite of the various programmes of the government, the country has not made great strides in female employment or entrepreneurship, as shown by the declining trend in FLFPR. The right incentives for industry and entrepreneurship will provide the necessary impetus to overcome the barriers to female employment.

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Synthesis, Characterizations and Gas Sensing Performance of SrO₂ Activated Zr_(0.50)Sn_(0.50)O₄ Nanocomposite Thick Films

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Abstract

Thick films of bulk tin oxide and zirconium oxide powders were observed to be less sensitive to polluting, hazardous and inflammable gases. So, nanostructured tin oxide and zirconium oxide powders were synthesized by disc type ultrasonicated microwave assisted centrifuge technique. Nanocomposite material, Zr_(0.50)Sn_(0.50)O₄ was prepared by using synthesized ZrO₂ and SnO₂ powders by taking their 1:1 proportion. Thick films of nanostructured pure Zr_(0.50)Sn_(0.50)O₄ powder were fabricated by screen printing technique. These films were surface functionalized by SrO₂ for different intervals of time followed by firing at 450°C for 30 min. The surface morphology, chemical composition, crystal structure of the unmodified and surface activated nanostructured Zr_(0.50)Sn_(0.50)O₄ powder by SrO₂ have been investigated by FESEM, EDAX, XRD, etc. Electrical and gas sensing performance of the thick films were also studied in the laboratory. Response, recovery and long term stable nature of the surface activated Zr_(0.50)Sn_(0.50)O₄ sensor were also studied.

Keywords: Nanocomposite Zr_(0.50)Sn_(0.50)O₄, Surface activation, Thixotropic paste, Thick films, Gas sensor, etc.

1.0 Introduction

Pollution has raised its ugly head high in the global environment [1-4]. It created tremendous disasters of global warming. To face such disasters, is a very challenging for mankind. Many gases released by the vehicles and industries contribute the pollution and ultimately the global warming. Gases beyond certain limit can affect the living beings. So, there is a need to detect the gaseous pollutants in the environment, even at trace levels. Many researchers are working already to detect the hazardous gases in the environment and hence to develop the gas sensors at their best level. Researchers are well known about the hazards of different gases released by any means in the open environment. Still, the action has not been initiated in the desired proportion to save the environment from the pollution and its hazards. Also, the researchers have the responsibility to aware the society from the pollution hazards. Hydrogen sulfide is a colorless gas that is known by its characteristic rotten egg like odor. It appears naturally as a byproduct of decomposition. Hydrogen sulfide is a highly toxic gas. It reacts with the enzymes in the blood stream which inhibit cell respiration. In other words, high concentrations of hydrogen sulfide can shut off the lungs. Even low concentration exposure of the H₂S gas can burn the respiratory track and cause swelling around the eyes [5-11]. Prolonged exposure of H₂S gas renders the sense of smell inoperative. Few

of the materials are utilized for fabrication of H₂S sensors, viz. Mn-Ni-Ferrite [5], CuO-WO₃ [6], CuO-SnO₂ [7], ZnO-nanowires [12-14], etc.

The aim of the present work is, to fabricate and develop the gas sensors by utilizing the pure and surface activated Zr_(0.50)Sn_(0.50)O₄ nanocomposite thick films by SrO₂ so that, they could be able to detect various gas traces (ppm / ppb).

2.0 Objectives

- i. To synthesize the nanostructured SnO₂ and ZrO₂ by one of the simplest and cheapest process known as disc type ultrasonicated microwave assisted centrifuge technique.
- ii. To prepare a nanocomposite material, Zr_(0.50)Sn_(0.50)O₄ using ZrO₂ and SnO₂ synthesized materials by taking their 1:1 proportion.
- iii. To prepare the thick films of nanostructured Zr_(0.50)Sn_(0.50)O₄ by screen printing technique. This is one of the simplest and low cost technique.
- iv. To ensure longer life by maintaining proper thixotropy and rheology of the thick films.
- v. To achieve a suitable surface activation by dipping the thick films of Zr_(0.50)Sn_(0.50)O₄ in to SrO₂ for enhancing the gas response and selectivity.
- vi. To analyze the synthesized pure and modified materials by different characterization techniques.
- vii. To investigate the electrical and gas sensing performance of pure and surface activated Zr_(0.50)Sn_(0.50)O₄ thick films.
- viii. To investigate and modify the response and recovery profile of pure and surface activated Zr_(0.50)Sn_(0.50)O₄ thick films.
- ix.

3.0 Research Methods

3.1 Synthesis of Zr_(0.50)Sn_(0.50)O₄ Nanocomposite Powder

Zr_(0.50)Sn_(0.50)O₄ nanocomposite in the form of dry powder were synthesized by disc type ultrasonicated microwave treatment followed centrifuge technique [14-16], by hydrolysis of AR grade zirconium oxychloride and tin chloride in aqueous-alcohol solution. An initial aqueous-alcohol solution was prepared from distilled water and propylene glycol in the ratio of 1:1. This solution was then mixed with 1M aqueous solution of zirconium oxychloride and tin chloride in the desired proportions. The special arrangement was made to add drop wise aqueous ammonia (0.1 ml / min) with constant stirring until the optimum pH of solutions become in the range from 7.9. After complete precipitation and centrifugation, the hydroxide was washed with distilled water until chloride ions were not detected by AgNO₃ solution. Then the precipitates were allowed for ultrasonication and then placed in a microwave oven for 10 minutes with continuous on-off cycles, periodically, followed by calcination at 500°C for 2 hrs. in muffle furnace. The dried precipitates were ground by agate pestle-mortar to ensure sufficiently fine particle size and re-calcined in a muffle furnace at 500°C for 2 hrs, to eliminate the organic impurities, if present. The crystallite size of synthesized nanocomposite was monitored by XRD analysis and confirmed on calculating by Scherer's formula. Thus, the dry powders of nanostructured Zr_(0.50)Sn_(0.50)O₄ have been prepared and ready to use for screen printing.

3.2 Thick Film Fabrication and Surface Activation

The thixotropic paste was formulated by mixing the synthesized nanostructured powder of pure $Zr_{(0.50)}Sn_{(0.50)}O_4$ nanocomposite with a solution of ethyl cellulose (a temporary binder) in a mixture of organic solvents such as butyl cellulose, butyl carbitol acetate and turpeneol. While in formulating the paste, the ratio of inorganic to organic part was kept as 80:20. The thixotropic paste was screen printed on the glass substrates and the thick films of desired patterns were obtained [17-19]. Thus, thick films of $Zr_{(0.50)}Sn_{(0.50)}O_4$ nanocomposite were fabricated by screen printing technique. The films prepared were fired at 500°C for 30 min in muffle furnace. Then the dried films were surface activated by activating them into 0.01 M aqueous solution of strontium chloride, for different intervals of time viz. 5 min, 15 min, 30 min and 45 min and dried at 80°C under an IR lamp, followed by firing at 500°C for 30 min in ambient air. The particles of strontium chloride dispersed on the film surface would be transformed to strontium oxide (SrO_2), upon firing process. Thus, the sensor elements with different mass % of SrO_2 incorporated in to thick films of pure $Zr_{(0.50)}Sn_{(0.50)}O_4$ were prepared. Silver contacts were made by vacuum evaporation for electrical measurements and monitoring the gas sensing performance of thick films.

4.0 Material Characterizations

4.1 XRD Analysis

Fig. 1 depicts the X-ray diffractogram of $Zr_{(0.50)}Sn_{(0.50)}O_4$ powder. The 2θ peaks observed are correspond to the (110), (111), (111), (101), (102), (200), (211), (122), (131), (213), (311), (112), (121), (202), (140), (232) and (321) planes of reflections. No peaks corresponding to SrO_2 were observed, in XRD pattern of surface activated thick films, which may be due to their very small mass % dispersed on the surface of $Zr_{(0.50)}Sn_{(0.50)}O_4$ film. The XRD spectrum reveals that, the material is polycrystalline in nature and combination of tetragonal-monoclinic in structure. The observed peaks are matching well with JCPDS reported data of pure SnO_2 - ZrO_2 . The material was observed to be nanocrystalline in nature. The average crystallite size was observed to be of 38.7 nm, which was determined using Scherer's formula.

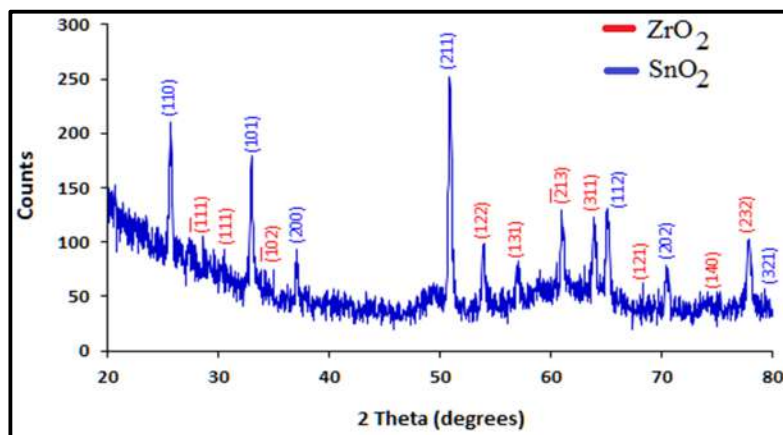


Fig. 1: XRD of $Zr_{(0.50)}Sn_{(0.50)}O_4$ powder

4.2 Energy Dispersive Analysis by X-Rays (E-DAX)

The quantitative elemental composition of the pure $Zr_{(0.50)}Sn_{(0.50)}O_4$ and SrO_2 activated $Zr_{(0.50)}Sn_{(0.50)}O_4$ thick films were analyzed using an energy dispersive spectrometer and mass % of O, Zr, Sn, $Zr_{(0.50)}Sn_{(0.50)}O_4$, Sr, SrO_2 and SrO_2 - $Zr_{(0.50)}Sn_{(0.50)}O_4$ are represented in Table 1.

Stoichiometrically, expected mass % of O, Zr and Sn (in $Zr_{(0.50)}Sn_{(0.50)}O_4$) are 37.88, 27.00 and 35.12 respectively. However, the observed mass % of the respective elements are 37.50, 33.59 and 28.91. Thus, the prepared powder of pure $Zr_{(0.50)}Sn_{(0.50)}O_4$ is slightly less deficient in oxygen (or excess in Zr than Sn), which increases its n-typeness characteristic. Also, the mass % of Zr, Sn and O in each activated samples are not as per the stoichiometric proportion and all samples are observed to be oxygen deficient. This enhances n-type semiconductivity of activated $Zr_{(0.50)}Sn_{(0.50)}O_4$ thick films.

It is clear from Table 1 that, the mass % of SrO_2 ($Zr_{(0.50)}Sn_{(0.50)}O_4$) on the surface of the film increases (decreases) with activation time, which may be attributed to the chemisorption of strontium chloride particles on the surface of the thick films proving activation of the film during dipping process. This forms p- SrO_2 / n- $Zr_{(0.50)}Sn_{(0.50)}O_4$ heterojunctions on the surface of the film, leading to increase the resistivity.

Table 1: Elemental analysis of pure and SrO_2 activated $Zr_{(0.50)}Sn_{(0.50)}O_4$ thick films

Mass %	Activation Time (min)					
	0 (Pure) (Expected)	0 (Pure) (Observed)	5	15	30	45
O	37.88	37.50	24.72	20.72	22.20	16.20
Zr	27.00	33.59	01.72	08.23	08.28	54.98
Sn	35.12	28.91	73.55	71.04	69.39	28.05
$Zr_{(0.50)}Sn_{(0.50)}O_4$	100	100	99.986	99.986	99.84	98.95
Sr	00	00	00.01	00.01	00.12	00.77
SrO_2	00	00	0.014	0.014	00.16	01.05
SrO_2 + $Zr_{(0.50)}Sn_{(0.50)}O_4$	100	100	100	100	100	100

4.3 Microstructural Analysis (SEM)

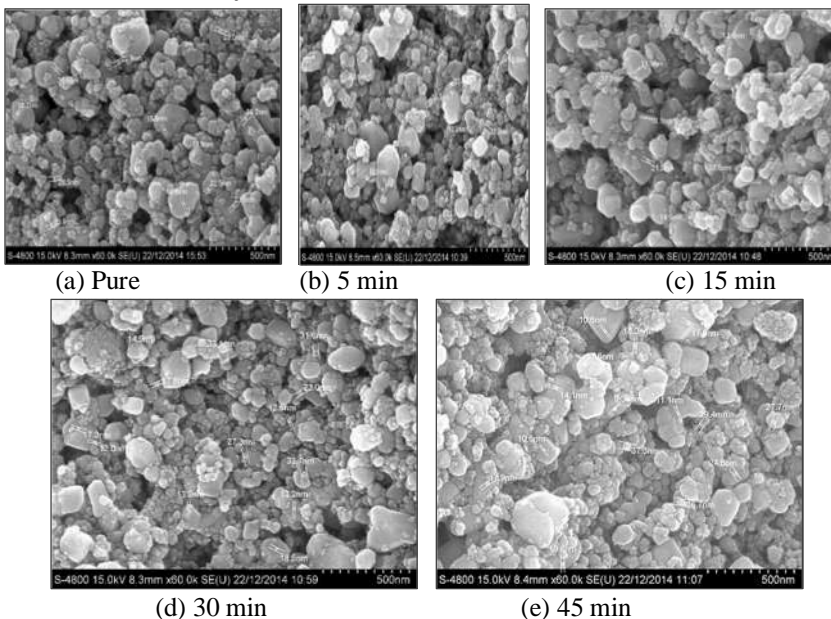


Fig. 2: Micrographs of Pure and SrO_2 activated $\text{Zr}_{(0.50)}\text{Sn}_{(0.50)}\text{O}_4$ thick films
Fig. 2 (a) depicts the SEM image of pure $\text{Zr}_{(0.50)}\text{Sn}_{(0.50)}\text{O}_4$ thick film fired at 500°C for 30 min, which consists of voids and a wide range of randomly distributed grains with sizes ranging from 10 nm to 30 nm. The film has porous nature, which supports the adsorption-desorption type of gas sensing mechanism. The nanoscale grains exhibit high surface to volume ratio. The smaller grains of zirconium oxide are fused with the larger grains of tin oxide.

Fig. 2 (b to e) depicts the microstructures of SrO_2 activated $\text{Zr}_{(0.50)}\text{Sn}_{(0.50)}\text{O}_4$ thick films activated for 5 min, 15 min, 30 min and 45 min, respectively. The films consist of smaller grains of SrO_2 associated with the larger (agglomerated) grains of $\text{Zr}_{(0.50)}\text{Sn}_{(0.50)}\text{O}_4$. Overall appearance of all the films is nearly identical. However, the film activated for 15 min exhibits larger H_2S gas response, which may be attributed to the large surface active sites of the film. The films consist of voids, having grain sizes ranging from 10 nm to 30 nm distributed non-uniformly. It was also observed that, the films activated for 30 min and 45 min show the larger mass percentage of SrO_2 covered the entire film i. e. masking, which decreases the porous nature and surface to volume ratio of the film and ultimately the gas response.

5.0 Electrical Performance of the Sensor

5.1 I-V Characteristics of Pure and Surface Activated $\text{Zr}_{(0.50)}\text{Sn}_{(0.50)}\text{O}_4$

Fig. 3 depict the I-V characteristics of pure and SrO_2 activated $\text{Zr}_{(0.50)}\text{Sn}_{(0.50)}\text{O}_4$ thick films. It is clear from the symmetrical nature of I-V characteristics that, the materials as well as silver contacts made on the films for external connections, are ohmic in nature. The materials are therefore said to have possessing the resistive properties, though more or less.

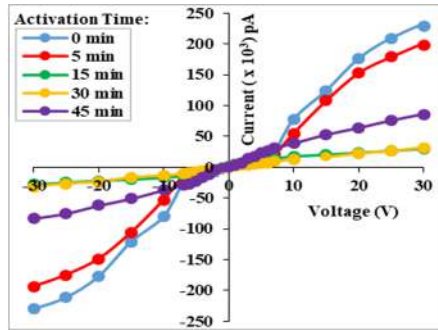


Fig. 3: I-V characteristics

5.2 Electrical Conductivity of Pure and Surface Activated $Zr_{(0.50)}Sn_{(0.50)}O_4$

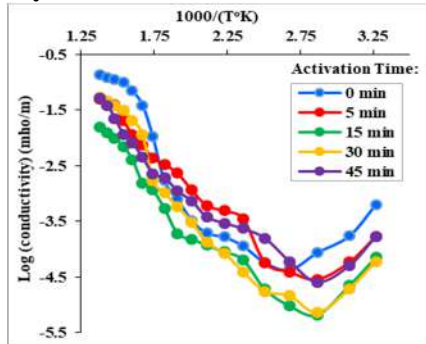


Fig. 4: Conductivity profile

Fig. 4 depict the variation of log of conductivity with the reciprocal of operating temperature of pure and SrO_2 activated $Zr_{(0.50)}Sn_{(0.50)}O_4$ thick films. The conductivities of all the films are decreasing with decrease in operating temperature, up to $75^\circ C$, attributed to the negative temperature coefficient (NTC) of resistance and semiconducting nature of the pure and activated $Zr_{(0.50)}Sn_{(0.50)}O_4$ thick films. The conductivities of all the samples are minimum at $75^\circ C$ and increase with further decrease in operating temperature, attributed to the positive temperature coefficient (PTC) of resistance.

6.0 Gas Sensing Performance of Pure $Zr_{(0.50)}Sn_{(0.50)}O_4$

6.1 Temperature Dependent Performance

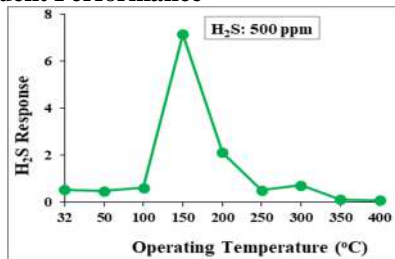


Fig. 5: Variation of H_2S with op. temperature of pure $Zr_{(0.50)}Sn_{(0.50)}O_4$ thick films

Fig. 5 shows the variation of H₂S (500 ppm) gas response of pure Zr_(0.50)Sn_(0.50)O₄ thick films with operating temperature. The maximum response to H₂S obtained is of the order of 7.14 at 150°C, which is very less and decrease with further increase in operating temperature. Also, pure Zr_(0.50)Sn_(0.50)O₄ thick film exhibits no response in the temperature range from 75°C to 100°C. In the temperature notch from 75°C to 100°C, the material exhibits the insulating nature. So, the material shows negligible response in this notch of temperature. At higher temperatures (>100°C), pure Zr_(0.50)Sn_(0.50)O₄ desorbs oxygen leading to increase the conductivity.

6.2 Selective Nature of Pure Zr_(0.50)Sn_(0.50)O₄

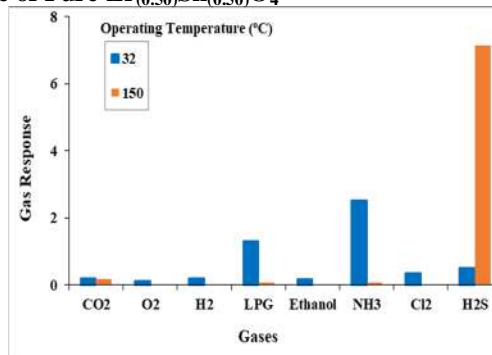


Fig. 6: Selective nature of pure Zr_(0.50)Sn_(0.50)O₄ thick films

It is observed from Fig. 6 that, the pure Zr_(0.50)Sn_(0.50)O₄ thick films are selective to H₂S at 150°C and NH₃ at room temperature (32°C), among all other gases. Pure Zr_(0.50)Sn_(0.50)O₄ thick films have lack of selectivity to NH₃ against LPG at room temperature. Also, pure Zr_(0.50)Sn_(0.50)O₄ thick films are less sensitive to the respective gases. This is the major drawback of pure Zr_(0.50)Sn_(0.50)O₄ thick films, while studying the H₂S gas sensing profile of the sensor.

7.0 Gas Sensing Performance of SrO₂ Activated Zr_(0.50)Sn_(0.50)O₄

7.1 Temperature Dependent Performance

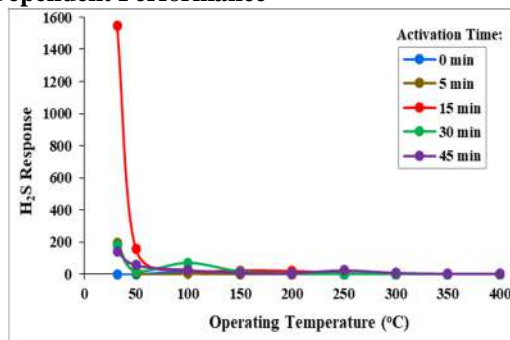


Fig. 7: Variation of H₂S response with op. temperature

Fig. 7 depicts the variation of 5 ppm H₂S gas response with operating temperature of pure Zr_(0.50)Sn_(0.50)O₄ and SrO₂ activated Zr_(0.50)Sn_(0.50)O₄ thick films. It is clear from figure that, SrO₂ activated Zr_(0.50)Sn_(0.50)O₄ thick films at 15 min activation time gives

highest response to 5 ppm H₂S gas at room temperature (32°C). From elemental analysis, it is observed that, the SrO₂ activated Zr_(0.50)Sn_(0.50)O₄ (15 min) thick film is observed to be oxygen deficient. This enhances n-typeness of activated Zr_(0.50)Sn_(0.50)O₄ film. The SrO₂ particles dispersed on the surface of Zr_(0.50)Sn_(0.50)O₄ thick film during activation, form p-SrO₂ / n- Zr_(0.50)Sn_(0.50)O₄ heterojunctions on the surface of the film, leading the increase in the barrier height among heterojunctions and hence resistivity. Upon exposure of H₂S gas, the n-typeness of Zr_(0.50)Sn_(0.50)O₄ decreases and enhances p-typeness in the extent that ruptures the p-n heterojunctions and the whole material exhibits p-type semi conductivity. The holes contribute the net flow of current in the surface of the material. This may be the reason of increase in conductivity of the sensor upon exposure of H₂S gas at room temperature. But, as the temperature increases, the H₂S response decreases.

7.2 Active Nature

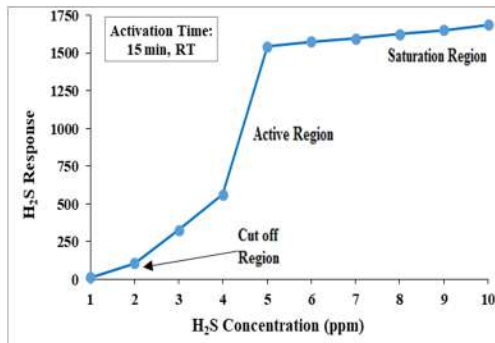


Fig. 8: Variation in H₂S response with H₂S gas concentration (ppm)

The variation of H₂S response of SrO₂ activated Zr_(0.50)Sn_(0.50)O₄ thick films with H₂S gas concentration at room temperature, are represented in Fig. 8. It is clear from the figure that; the gas response goes on increasing near about linearly with gas concentration up to 5 ppm. The rate of increase in H₂S response was relatively larger up to 5 ppm and saturated beyond 5 ppm. Thus, the active region of the sensor would be up to 5 ppm.

7.3 Selective Nature

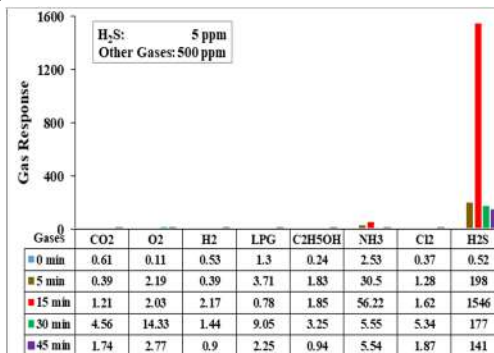


Fig. 9: Selective nature of pure and SrO₂ activated Zr_(0.50)Sn_(0.50)O₄ to H₂S gas

It is observed from Fig. 9 that, the 15 min SrO₂ activated Zr_(0.50)Sn_(0.50)O₄ thick film is most sensitive to 5 ppm H₂S at room temperature. This is the optimized condition as far as surface activation of Zr_(0.50)Sn_(0.50)O₄ with the help of SrO₂ is concerned. Also, it has high selectivity against different gases, viz. carbon dioxide, oxygen, hydrogen, liquefied petroleum gas, ethanol, ammonia and chlorine.

7.4 Activation Dependent Performance

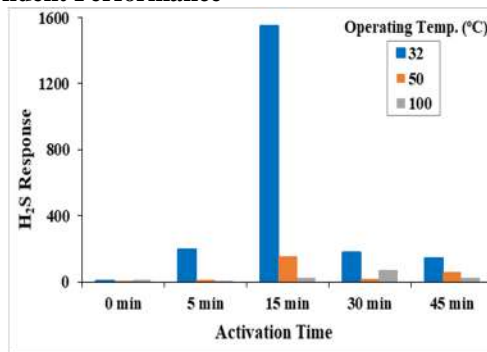


Fig. 10: Variation of H₂S response with activation time (min)

Fig. 10 indicates the H₂S response as a function of the activation time of the SrO₂ activated Zr_(0.50)Sn_(0.50)O₄ thick film sensor. The pure Zr_(0.50)Sn_(0.50)O₄ thick film was observed to be less sensitive to H₂S at all temperature range. The activation of thick films of pure Zr_(0.50)Sn_(0.50)O₄ by SrO₂ enhances the H₂S response. It was observed that, the response to H₂S increases with activation time, reaches to maximum at 15 min and then falls down even with increase in the activation time. At 5 min activation time, very less SrO₂ particles were dispersed on the surface of the thick film and formed less number of p-SrO₂ / n- Zr_(0.50)Sn_(0.50)O₄ heterojunctions on the surface of the film. However, at 15 min activation time, the optimum number of p-SrO₂ / n-Zr_(0.50)Sn_(0.50)O₄ heterojunctions produces better response. For larger activation time (>15 min), the large number of SrO₂ particles would mask the entire Zr_(0.50)Sn_(0.50)O₄ film, reduces response.

7.5 Long Term Stable Nature

Fig. 11 indicates the H₂S response over a long time duration for the SrO₂ activated Zr_(0.50)Sn_(0.50)O₄ (15 min) thick film sensor. The sensor response to H₂S was observed to be constant over a long duration (few months). It was observed that, the sensor response decreases by less than 10 % after 50 days, and remains same thereafter. This proves the long term stability of the sensor.

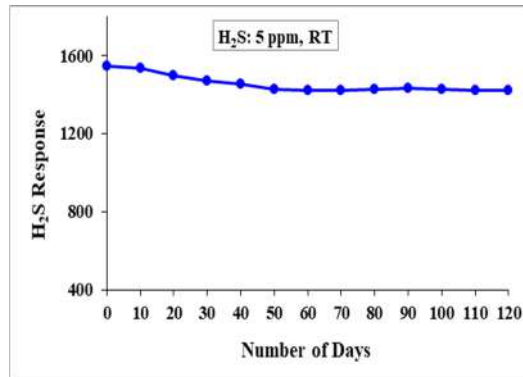


Fig. 11: H₂S response over long time duration (Days)

7.6 Response - Recovery Nature

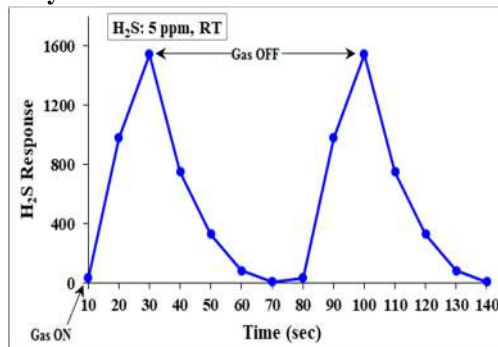


Fig. 12: Response and recovery of SrO₂ activated Zr_(0.50)Sn_(0.50)O₄ thick film

The response and recovery of the SrO₂ activated Zr_(0.50)Sn_(0.50)O₄ (15 min) thick film sensor is represented in Fig. 12. The response and recovery time of the sensor was of the order of 25 sec. to 5 ppm of H₂S gas. For better performance of the sensor, the recovery should be very fast. When the gas exposure was switched off, the sensor returned back to its original chemical status, within a very short time (~ 25 sec.). This is the main feature of this sensor.

8.0 Conclusions

From the results obtained, following conclusions are made for the sensing performance of the sensors.

1. Pure Zr_(0.50)Sn_(0.50)O₄ thick films were almost insensitive / less sensitive to hazardous and toxic gases.
2. SrO₂ activated Zr_(0.50)Sn_(0.50)O₄ (15 min) exhibits crucial response to 5 ppm H₂S gas at room temperature, as well as it is highly selective to H₂S.
3. The excellent features of the sensor are that, it is highly sensitive, selective, low cost, portable in size and weight, long term stability, fast response and quick recovery.



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**FUNCTIONING OF INFORMATION AND COMMUNICATION
TECHNOLOGY (ICT) @ SCHOOL SCHEME IN SECONDARY SCHOOLS**

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ABSTRACT

Recent developments in Information and Communication Technology (ICT) have opened new challenges for education in 21st Century. At present basic reading, writing and arithmetic is not enough but computer knowledge and skills is essential part of modern life. The illiterate of 21st century will not be those who cannot read and write but those who cannot learn, unlearn and relearn. ICT add more value and provide effective learning for all anywhere and anytime with real time interactivity, which is as such is not possible through the conventional face to face classroom learning. Realising the importance of ICT, the Government of India introduced ICT @ School Scheme in the Secondary and Higher Secondary Schools throughout the country to enhance learning and computer literate to large chunk of deprived students

Key Words: Information and Communication Technology (ICT), Secondary and Higher Secondary School.

Introduction:

Information and communication Technology (ICT) is universally acknowledged as an important catalyst for social transformation and national progress. Understanding and leveraging ICT is therefore critical for countries striving for continued social and economic progress. India shows enormous geographic and demographic disparity in ICT use. India has one of the largest ICT workforce in the World. One can find intense ICT use in technology clusters such as Bangalore, Noida and Gurgaon or amongst the upper middle buckets of income in present India. The other side of the story is that large parts of the country lack even telephone and mobile connectivity.

India recognized the important of ICT in the education as early as 1984-85 when the Computer Literacy and Studies in Schools (CLASS) was initially introduced as a pilot project with the introduction of BBC micro-computer. The National Task Force on Information Technology and Software Development (IT Task Force) constituted by the Prime Minister in July,1988 has made special recommendations on introduction of IT in the education sector including schools. The committee recommended that computers and internet shall be made accessible to Schools, Polytechnics, Colleges and Public Hospitals in the country by the year, 2003.



The UNESCO World Education Report, 1998 notes that the new technologies challenge traditional conceptions both of teaching and learning and by reconfiguring how teachers and learners gain access to knowledge have the potential to transform training and learning processes. ICT Provide an array of powerful tools that may help in transforming the present isolated, teacher-centered and text-bound classrooms into rich, student focused interactive knowledge environments.

Lopez (2003) states Information and Communication Technology (ICT) have significant impact on the traditional school system. They have provided innovative opportunities for teaching and learning. ICT have engendered advances in research about how people learn? Thereby bringing about rethinking in the structure of education with the liberalization and globalization of Indian economy. Daniels (2002) asserts that many of the changes that occurred on education around the globe in 1990's occurred at levels beyond the classroom and the day-today experiences of learners. Kozma (2002) states that special attention has been given to diffusion of innovative ICT practices as an ongoing process in several aspects of school life such as curriculum, teaching and learning process, time-tables and planning of learning space.

NEED OF THE STUDY:

The "ICT in Schools" scheme is a window of opportunity to the learners in the schools of India to bridge the digital divide. The Cabinet Committee on Economic Affairs (CCEA) on 9th January, 2010 give approval to launch this scheme with the following objectives:-

- (i) To establish an enabling environment to promote the usage of ICT specially in Higher Secondary and Secondary Government Schools in rural areas.
- (ii) To ensure the availability of quality online and through access devices both in private sector and by SIETS.
- (iii) Enrichment of existing curriculum and pedagogy by employing ICT tools for teaching and learning.
- (iv) To enable students to acquire skills needed for the digital world for higher studies and gainful employment.
- (v) To provide an effective learning environment for children with special needs through ICT tools.
- (vi) Promote critical thinking and analytical skill by developing self-learning.
- (vii) To promote the use of ICT tools in distance education including the employment of audio-visual medium and satellite based devices.

The ICT @ Schools Scheme was launched in Odisha in 2013-14 and in Sonepur district. The District Education Office identified 50 Government Secondary Schools to launch the scheme and it becomes operational. Under the ICT @ Schools Scheme an ICT laboratory with 10 computers, smart board, scanner, Web Camera, Modem, etc were provided to the identified schools. Besides these one ICT teacher are also appointed under the scheme. Thus ICT @ Schools Scheme is a novel and new initiative to convert the Secondary Schools into Smart Schools. The present study is an attempt to



study the functioning of the ICT @ Schools Scheme in terms of facilities and use of information technology and development ICT related skills and values among teachers and students.

RESEARCH QUESTIONS:-

The following are the research questions of the present study.

- 1) What are the provision were made in the secondary school under ICT @ school scheme.
- 2) Whether implementation of the scheme has helped in capacity building of the teacher.
- 3) What benefits does ICT based instructions provide toward students.
- 4) What are the problem faced by school using the provisions in term of infrastructure, management and technical supports?

Objectives of the Study:-

The following are the objective of the present study.

- 1) The find out the facilities available under ICT @ School Scheme in the secondary school of Subarnapur district.
- 2) To study the enhancement of computer literacy among students and teachers.
- 3) To study the impact made on teacher capacities and practices under ICT @ school scheme.
- 4) To study the problem related to implementation of ICT @ school scheme at secondary school level.

Design of the study:-

i) **Method of the study:-** For the present study descriptive survey method was used.

ii) **Population:-** All the 50 Government secondary schools of Subarnapur district where ICT @ Schools Scheme was operational constitute the population of the present study.

iii) **Sample:-** For the present study out of 50 schools, 25 Government secondary School were selected through random sampling method. Similarly 75 Teachers, (3 from each schools) are also selected randomly for the present study. Again 25 computer teacher (one from each school) and 150 student (6 from each school) are also selected randomly as sample of the present study.

iv) **Tools used :-** For the present study 04 self made tools were used i.e. (1) School information blank (2) Questionnaire for teacher (3) Questionnaire for computer teacher and (4) Questionnaire for students.

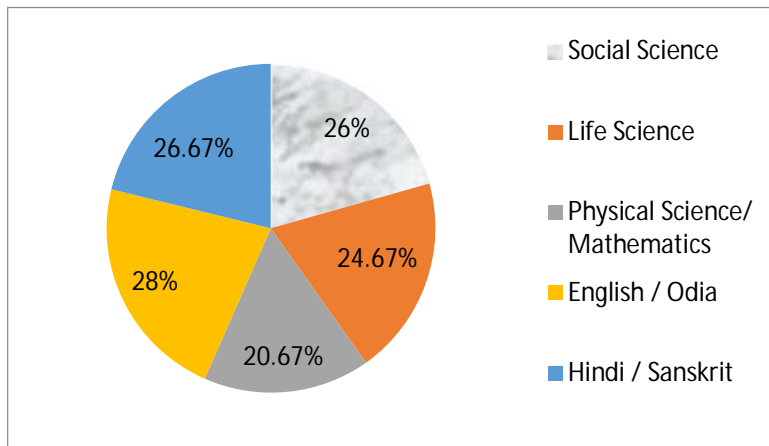
DATA ANALYSIS AND INTERPRETATION:

TABLE – 1

Sl. No.	Items	Available in Schools	Functional condition
1	Computer	25 (100%)	25 (100%)
2	Projector	25 (100%)	22 (88%)
3	Smart Board	25 (100%)	24 (96%)
4	Printer-cum-Scanner	25 (100%)	21 (84%)
5	Web Camera	25 (100%)	25 (100%)
6	Modem	25 (100%)	25 (100%)
7	UPS	25 (100%)	23 (92%)
8	Generator	25 (100%)	22 (88%)
9	Computer Table	25 (100%)	25 (100%)
10	Chair	25 (100%)	25 (100%)

The above table shows that all the government secondary schools covered under ITC @ school scheme have ICT Lab. with Computer, Projector, Smart Board, Printer-cum-Scanner, Web Camera, Modem, Table and Chair. So far as their functional conditions at present is concerned in all schools computer, Modem, Web camera, table and chair are in functional and are in better condition. But projector is functional in 22(88%) schools, Smart Board in 24 (96%) schools, Printer-cum-Scanner in 21(84%) schools and UPS in 23(92%) schools are in functional condition.

School subject taught through ICT



The above Pie-Chart reveals about the different school subject taught by the subject teacher in government secondary school through ICT mediated smart board using e-content.

Table-2
Teachers views on Effectiveness of ICT instructions.

Sl. No.	Effectiveness of ICT instruction.	Teachers view (N=75)	Rank
		No / Percentage	
01.	Help student to understand concepts in more effective way.	64 (85.33%)	01
02.	It facilitates better classroom management	63 (84%)	02
03.	Computer helps students to express their thinking in better and different ways	62 (82.67%)	03
04.	Technology enhanced learning activities for students.	58 (77.33%)	04
05.	Computer will change the way of students learning in classes.	57 (76%)	05
06.	Computer will help student to understand concept very easily and clearly.	55(73.33%)	06
07.	Computer facilitates the more advance way of learning.	54 (72%)	07
08.	The use of computer in teaching and learning make stress free.	53 (70.67%)	08
09.	I fell it helps me to complete the syllabus in time.	53(70.67%)	09
10.	Internet helps to meet subject learning goals.	51 (68%)	10
11.	Enhance encouragement or curiosity to integrate computer in teaching and learning process.	37(49.33%)	11
12.	Computer is not conducive to student learning's because it is not easy to use.	35(46.67%)	12

The above table shows the views of teachers on effectiveness of ICT instructions in classroom.

Findings and Discussion:-

- 1) In all Government Secondary Schools covered under ICT @ Schools Scheme have ICT Laboratory with Computer, Projector, Smart Board, Printer-cum-



- Scanner, Web Camera, Modem, UPS, Generator and Computer Table and Chair.
- 2) In almost all schools the computer peripherals are in functional condition. In few schools computer peripherals i.e. projector, smart board, printer-cum-Scanner and UPS are not in working properly.
 - 3) About 26% social science teacher, 24.67% life science teacher, 20.67 % mathematics teacher, 28% language teacher using smart board for teaching their subject.
 - 4) Again frequency of ICT use by subject teachers reveals that 41.27% teachers never use them, 14.81% uses rarely, 15.87% teachers uses them sometime and often respectively and 12.17% teacher uses ICT very often.
 - 5) About 85.33% teachers opined that computer helps students to understand concept in more effective ways.
 - 6) Similarly 46.67% teachers viewed that computer is not conducive to student learning because it is not easy to use.
 - 7) About 96% teacher opined the internet facilities not available in their school.
 - 8) Again 64% teachers opined that adequate e-content materials are not available in their subject.
 - 9) All the 25(100%) ICT coordinator/ teacher have requisite qualification and working in contractual basis.
 - 10) Only 09(36%) ICT coordinator opined that they create a home page and have knowledge about designing web sites, e-content materials and video conferencing.
 - 11) About 22 (88%) ICT coordinator facing problem due to limited number of computer and no internet connection.
 - 12) Similarly 81.33% student opined that e-content help them to understand the concept properly.
 - 13) Again 77.33% students viewed that ICT help them to express their thinking in better and different ways.
 - 14) About 50.67 % students opined that computer is not contribute to their learning because it is not easy to use.
 - 15) Similarly 87% of students have basic knowledge of computer operation.

Conclusion:-

Information and communication technology (ICT) have become an integral part of teaching and learning process. Teacher's role has become more important in the era of digital learning. Transforming every class into a digital learning class has become challenging for teachers. At present learners are more inclined towards technology resources than mere teaching. But in reality our teacher community is mostly traditional bounded hardly using ICT resources. Thus implementing ICT in day to day educational practices is also a major concern for the teachers. ICT @ schools scheme is a window of opportunity particularly for government schools located in rural and backward pockets to encourage students learning through smart classroom using e-content. This initiative



in other-words help to bridge the gap of digital divide and success of “Digital India” Mission.

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THE INDIGENOUS ISSUE

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ABSTRACT

The indigenous people are those whose ancestors were believed to be the first inhabitants of the land they live in. Many indigenous people are victims of deliberate and systematic of ecocide. Some indigenous people meekly accept their cultural loss, hoping for exclusive rewards. Some accept the change with a sense of fatalism. These achievements by the indigenous people who have endured centuries of exploitation and marginalization are tremendous change facing governments and the international community. Though India has voted in favour has been consistently denying the existence on applicability of the concept of “indigenous” people to India.

THE INDIGENOUS ISSUE

The Indigenous people are those whose ancestors were believed to be the first inhabitants of the land they live in. The international Labour Organization has added two more criteria; close ties to their cultural and economic practices and economic and political marginalization. As per and UNO estimate there are approximately **400 million** Indigenous people world wise making up **more than 5,000 distinct communities** spanning over **90 countries**. Indigenous peoples constitute about 6% of the world’s population but represent **90% of the cultural diversity**. They hold about 20% of the land mass of the Earth and harbor 80 % of the world’s remaining biodiversity. Culturally each community is unique. However here are certain basic characteristics that all Indigenous communities share.

People who have probably suffered most from the exposure to Western industrial society and the resultant lop-sided development are the indigenous people of the colonized lands. Some glaring examples are the Natives of Americas Australia Amazonia Braziland many others. They have been subjugated dispossessed of their land and were forced into the global system. They lost their autonomy and often their lives. They are rounded up in reservations; or left to roam impoverished on the margins of society in a land that had once been theirs.

Many indigenous peoples are victims of deliberate and systematic **genocide**. From the seventeenth century to the early nineteenth century the settlers of Newfoundland hunted and killed the local indigenous people the Beothucks as if



they are game animals (Harwood 1969:72). The native Australians continued to be objects of attack till the 1920s by organized groups of white settlers. Brutal attacks on peaceful groups of Indians by organized groups of settlers continue to occur in parts of South America even today (Howard 1989:432)

In the late 1970s Embera Indians of Colombia discovered a gold mine and wanted to retain their right over it. The land lords and prospectors systematically attacked them to dispossess of their rights. When they failed they spread rumors that the Indians were subversives. Believing the rumor, the government employed armed police in 1981. There was an armed conflict; several Indians were killed and many were captured and jailed (IWGIA 1981; 43-44). "... gunmen hired by large land owners in Colombia have killed dozens of Indian leaders without a single case of murder ever been brought to trial" (Howard 1988:432).

Where the settlers have not succeed in genocide they restored to **ethnocide**, an extreme form of ethnocentrism, based upon an erroneous and arrogant belief that the cultures and life-styles of the indigenous peoples are inferior to those of the settlers.

The Lacandon a forest dwelling community of Southern Mexico, was able to live in comparative isolation till recently. Today, they are forced to share forest homeland "with more than 1,00,000 peasants who have moved there from other densely populated areas with loggers who have already cleared half of the land with Christian missionaries, with tourists, and with a host of government officials." The emerging situation is such that "within a decade or two there will no longer be a distinct group known as the Landon" (Howard *ibid*: 433). The beneficiaries are a handful of alien entrepreneurs gaining access to Lacandon land, selling them Coca-Cola and giving them bibles.

Some indigenous people meekly accept their cultural loss, hoping for elusive rewards. Some accept the change with a sense of fatalism. Those who are least convinced of the superiority of the alien culture react and resist. Many such people have sacrificed their lives rather than accept the "blessings" of civilization.

Kaingang is an indigenous community in Brazil. They lived a semi nomadic forest life till the early years of the 20 Century. When a railway construction began through their territory, settler began moving into their land, clearing the forest and planting coffee. The Kaingang were drawn into a situation of war for survival. They tried to accommodate the settlers and be in peace with them but



to n avail. When they found n choice, they attacked the railway workers and the settlers. In the nearby city of Sao Paulo a plan was hatched to eliminate them. However the catastrophe was avoided by the intervention of the Indian Protection Service. In the meantime newly introduced diseases played havoc among the Kaingang. The population was decreased from 700 to 200 between 1912 and 1916. The pacified people were placed in a small reserve. In 1949 the governor of the state took away half of their reserve, and gave the land to three business enterprises; probably greatly profiting himself in the transaction.

The Kaingang with the help of other local communities organized a resistance movement. They were able expel 2200 settlers from their lands. The government engaged foreign missionaries to establish schools to train local leadersto be more receptive to government control. A Kaingang chief a prominent leader of the resistance movement was killed in 1980. With the resistance movement weaker government constructed hydroelectric dams in the area, flooding a large part of their land, and settlers continued encroaching upon the remaining land.

By 1984, the Kaingang were again on the offensive. They restored to hunger-strike. The authorities agreed to recognize their rights to a part of their land threatened by the settlers, but delayed implementation. A group of Kaingang organized a protest march in the national capital, Brasila in October 1984. The government responded by police threats. The Kaingang organized a nationwide march on Brasila in March 1985. Ultimately the government announced the creation of the Kaingang Indian reserve in January 1986.

The concerns faced by the Kaingang are not dissimilar to those faced by most indigenous communities around the globe. Some challenges are specific to particular groups; some others are commonly experienced. The major issues facing indigenous peoples everywhere include cultural and linguistic preservation, land rights ownership and exploitation of natural resources, political determination and autonomy environmental degradation and incursion, poverty health, and discrimination. Without land and control of their assets, Indigenous Peoples are destined to remain the world's poorest and least literate communities – with the worst health highest mortality rate and shortest life span.

Marginalization and exclusion from the mainstream political, economic and social spheres prompted indigenous people to lobby and have their concerns included in the documents of United Nations conferences. The United Nations conference on environment and development (1-12 June 1992, Rio de Janeiro,



Brazil), the World conference of Human rights (14-25 June 1993 Vienna Austria), the International conference on Population and development (5-13 September 1994, Cairo Egypt), the World Summit for Social Development (6-12 March 1995 Copenhagen, Denmark) and the Fourth World Conference on Women (4-15 September 1995 Beijing China) issues of importance to indigenous people around the world were discussed. In the final documents adopted at the Conferences Governments were requested to implement recommendations relating to indigenous people and to adopt national legislation to protect and promote their rights. Educational and awareness-raising programmes were also stressed

The Vienna conference recommended for the creation of a Forum on the indigenous people; and formed a working group and deliberated upon the issue in a number of meetings that led to the establishment of the permanent forum by the UN economic and Social Council Resolution 2000/22 on 28 July 2000.

These achievements by the indigenous peoples who have endured centuries of exploitation and marginalization are tremendous challenge facing Governments and the international community. The International decade of the World's Indigenous People is to serve as a time-frame to assess indigenous people's needs and to accelerate the correction of situations in which indigenous people are at a disadvantage. The decade also offers a frame work for the launching of activities and the promotion of progress for indigenous people. It is an opportunity to bring about tangible improvements in the daily lives of indigenous communities.

Declaration on indigenous peoples was adopted by the UN General Assembly, on 13 September 2007, by a majority of 143 states in favour. Understandably, Australia, Canada, New Zealand and the United States voted against. Azerbaijan, Bangladesh Bhutan, Burundi, Colombia, Georgia, Kenya, Nigeria, Russian Federation, Samoa and Ukraine abstained from voting. Though India has voted in favour has been consistently denying the existence or applicability of the concept of "indigenous peoples" to India

At the United Nations, the government of India consistently denied existence or applicability of the concept of "indigenous peoples" to India. India had consistently opposed the UN declaration on the rights of Indigenous Peoples by the United Nations though it voted in favour at the general assembly on 13 September 2007.



India is signatory to the ILO Convention No. 107 concerning the Protection and Integration of Indigenous and other tribal and semi-tribal Populations in Independent Countries and it has legal responsibilities for its implementation. Nonetheless the concept of indigenous peoples has often been questioned in India.

One of the major struggles confronting the world today concern the right of native peoples to retain their own identities, to continue their cultural practices and to utilize resources in ways they view as most appropriate.



A STUDY OF PLANNING ABILITY & FORESIGHT OF WOMEN EXECUTIVES

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Abstract

Planning is a continuous function of management. Planning requires the ability to foresee and visualize the future events and situations. It involves deciding in advance what has to be done in the future. This requires perfect prediction of the future events. Executives who are good planners automatically turn out to be good controllers as well.

Key Words: Planning, Executives, Controllers, Future.

Introduction

In designing an environment for the effective performance of individuals working together in groups, a manager's most essential task is to see that everyone understand the group's purposes and objectives and its methods of attaining them. If group effort is to be effective, people must know what they are expected to accomplish. This is the function of planning. It is the basic of all the managerial functions. Planning involves selecting missions and objectives and the actions to achieve them; it requires decision making, i.e. choosing from among alternative future courses of action. Plans provide a rational approach to achieve preselected objectives. Planning also strongly implies managerial innovation. It bridges the gap from where we are to where we want to go. It makes it possible for things to occur that would not otherwise happen. Planning is an intellectually demanding process; it requires that we consciously determine courses of action and base our decisions on purpose, knowledge, and considered estimates.

Foresight means identifying relevant opportunities that are emerging and strategizing how to make the most of them today. Managers with foresight are able to make better decisions because they act while they still have multiple options. They keep themselves open to future alternatives and can take action when needed. They do not get trapped in the past or the present, but rather envision a preferred future. They see the possibilities and lead others toward these opportunities.

Objectives

1. To study the need and importance of planning skills for women executives.



2. To study the nature of planning skills possessed by women executives in different sectors.
3. To study the role of foresight in effective planning and controlling.
4. To study whether women executives in different economic sector possess similar planning skills and foresight.

Methodology

The present study has been conducted in four districts of western Maharashtra viz. Satara, Sangli, Kolhapur and Pune. The study is purely based on primary data collected from women executives working in the five sectors viz. Education, Banking, Insurance, Medical and Manufacturing Industry. The primary data is collected through a structured questionnaire and observation method. For the present study 300 women executives from different sectors were interviewed and were also asked to fill up the questionnaire.

Selection of Sample Size

Different sources were used for getting the population of women executives working in the Education, Banking, Insurance, Medical and Manufacturing Industry. From the education sector, the Principals of Colleges and the Administrative officers in the Universities were selected.

In the Banking sector, Bank Managers were selected from selected banks viz. The Karad Urban Cooperative Bank Ltd., State Bank of India, Bank of Maharashtra, Bank of India, and Saraswat Bank. In the insurance sector L.I.C Branch Managers and Officers were selected. In the Medical sector, Doctors were selected and in the industry sector, women managers and CEOs of manufacturing industries were selected.

Where the number of women is less than 50, 20% of the women were considered for the study. In case where there are more than 100 women in a particular area, 10% of the women are taken as sample size. However, in some cases where information was available, higher percentages of women were selected.

The selection was done on the basis of Cluster and Purposive sampling technique. The sample size was decided on a percentage basis of the universe.

Tools of Analysis

The collected data is analysed with the help appropriate statistical tools such as, percentages, bar diagrams and chi square test.

Results and Discussions

Table No. 1 Duration of Plans Prepared by Women Executives

District	Years	Edu.	Bank.	Insu.	Medi.	Mfg.Indus.	Total	%
Satara	10-20 yrs.	1	0	0	0	3	4	7.69
	5-10 yrs.	4	1	1	2	2	10	19.23
	0-5 yrs.	7	4	8	16	3	38	73.08
	Total	12	5	9	18	8	52	100
Sangli	10-20 yrs.	1	0	0	0	0	1	2.27
	5-10 yrs.	2	1	2	2	2	9	20.45
	0-5 yrs.	11	4	4	10	5	34	77.27
	Total	14	5	6	12	7	44	100
Pune	10-20 yrs.	0	2	7	25	0	34	22.52
	5-10 yrs.	7	4	8	33	4	56	37.09
	0-5 yrs.	5	9	2	34	11	61	40.40
	Total	12	15	17	92	15	151	100
Kolhapur	10-20 yrs.	1	0	0	11	0	12	22.64
	5-10 yrs.	3	3	2	3	3	14	26.42
	0-5 yrs.	7	4	6	4	6	27	50.94
	Total	11	7	8	18	9	53	100
Total	10-20 yrs.	3	2	7	36	3	51	17.00
	Percentage %	1.00	0.67	2.33	12.00	1.00	17.00	
	5-10 yrs.	16	9	13	40	11	89	29.67
	Percentage %	5.33	3.00	4.33	13.33	3.67	29.67	
	0-5 yrs.	30	21	20	64	25	160	53.33
	Percentage %	10.00	7.00	6.67	21.33	8.33	53.33	
Grand Total	49	32	40	140	39	300	100	
Percentage	16.33	10.67	13.33	46.67	13.00	100.00		

Source: Primary Data

GRAPH NO: 1

Duration of Plans Prepared by Women Executives

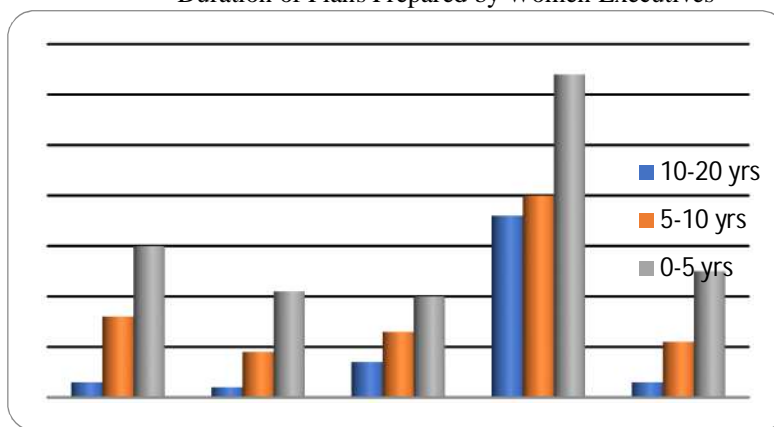


Table No.1 shows that in Satara district, 73.08% respondents plan for 0-5 years, 19.23% for 5-10 years and 7.69% for 10-20 years.

It is seen that, in Sangli district, 77.27% respondents plan for 0-5 years, 20.45% for 5-10 years and 2.27% for 10-20 years.

In Pune district, it is observed that out of the total respondents, 40.40% respondents plan for 0-5 years, 37.09% for 5-10 years and 22.52% for 10-20 years.

In Kolhapur district, 50.94% responses plan for 0-5 years, 26.42% for 5-10 years and 22.64% for 10-20 years.

Out of the total respondents, 53.33% plan for 0-5 years, 29.67% respondents plan for 5-10 years, and 17% respondents plan for 10-20 years.

It is clear that most of the women executives plan for 0-5 years, many of them plan for 5-10 years and very few of them make plans beyond 10 years. It shows that majority of the women executives study believe in planning for duration between 0-10 years. Planning is based on prediction and the accuracy of prediction goes on reducing with increase in period. Women executives seek accuracy in their plans due to which most of them plan for periods between 0-10 years.

Table No. 2 Accuracy of Prediction Ability of Women Executives

District	Prediction Accuracy	Edu.	Bank	Insu.	Medi.	Mfg.Indus.	Total	%
Satara	Above 90%	3	3	3	5	5	19	36.54
	75-90%	5	1	2	10	1	19	36.54
	50-75%	3	0	4	2	1	10	19.23
	Below 50%	1	1	0	1	1	4	7.69
	Total	12	5	9	18	8	52	100
Sangli	Above 90%	10	2	1	4	2	19	43.18
	75-90%	3	0	2	2	4	11	25.00
	50-75%	1	3	2	6	1	13	29.55
	Below 50%	0	0	1	0	0	1	2.27
	Total	14	5	6	12	7	44	100
Pune	Above 90%	9	4	1	42	7	63	41.72
	75-90%	1	9	3	17	5	35	23.18
	50-75%	2	2	12	33	3	52	34.44
	Below 50%	0	0	1	0	0	1	0.66
	Total	12	15	17	92	15	151	100
Kolhapur	Above 90%	5	3	2	17	3	30	56.60
	75-90%	3	3	5	1	2	14	26.42
	50-75%	3	1	1	0	4	9	16.98
	Below 50%	0	0	0	0	0	0	0.00
	Total	11	7	8	18	9	53	100
Total	Above 90%	27	12	7	68	17	131	43.67
	Percentage %	9.00	4.00	2.33	22.67	5.67	43.67	
	75-90%	12	13	12	30	12	79	26.33
	Percentage %	4.00	4.33	4.00	10.00	4.00	26.33	
	50-75%	9	6	19	41	9	84	28.00
	Percentage %	3.00	2.00	6.33	13.67	3.00	28.00	
	Below 50%	1	1	2	1	1	6	2.00
	Percentage %	0.33	0.33	0.67	0.33	0.33	2.00	
Grand Total	49	32	40	140	39	300	100	
Percentage	16.33	10.67	13.33	46.67	13.00	100.00		

Source: Primary Data

GRAPH NO: 2

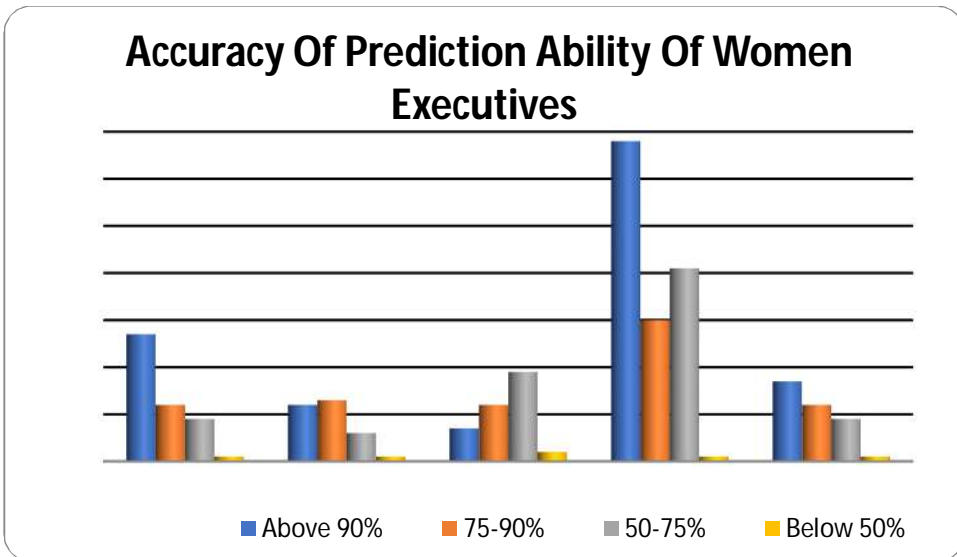


Table No.2 shows that most of the respondents have an accuracy of above 90% in prediction for future. The percentage for this opinion is 36.54% for Satara district, 43.18% for Sangli district, 41.72% for Pune district, and 56.60% for Kolhapur district.

However there are a very small number of respondents whose prediction accuracy is below 50%. The percentage for this opinion is 7.69% for Satara district, 2.27% for Sangli district, and 0.66% for Pune district.

In the Education sector, the percentage of respondents who say that they have a prediction ability of above 90% accuracy is 9%. For the other sectors, the percentages are, 4% for Banking sector, 2.23% for Insurance, 22.67% for Medical sector, and 5.67% for Manufacturing Industry. A negligible number of respondents are of the opinion that the accuracy of their prediction is below 50%.

It is seen that most of the women executives have very good prediction which means they can predict and foresee the events with a high level of accuracy which is useful for visualization, planning, judgement and decision making.

Statistical Interpretation:

Hypothesis Testing

Ho: There is no significant association in the accuracy of prediction of the women executives in different sectors.



H1: There is significant association in the accuracy of prediction of the women executives in different sectors.

Chi-square = 24.785; degree of freedom = 11; P = 0.000

H₀ is rejected and H₁ is accepted. Hence there is significant association in the accuracy of prediction of the women executives in different sectors.

Conclusion:

The women executives under study make a thorough study of the past trends along with the present situations and surroundings before forming a judgement about anyone or anything. They properly scan the environment, study the facts and figures and only after that they arrive at any conclusions. They have good judgement skills because they are practical, impartial, sincere, professionally qualified, sensitive and experienced persons.

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ROLE OF LEADERSHIP AND MANAGEMENT IN HIGHER EDUCATION

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Abstract

Leadership is a daily activity that almost every person has a view and experiences. In the organizational setting, the word leadership comes from Latin and means "to lead," "to lead," or "to pull." It usually means using interpersonal power and influence to get people to follow and stick around for organizational work. Leaders influence their followers by using a variety of approaches, including facilitation, mentoring and delegation and by using different styles depending on the organization's situation and personal standards and skills. Leadership is seen as an important aspect of the guiding component of management and therefore it is one of the assets that a successful manager must possess. Institutional leadership and management are two completely different but closely related aspects of the overall effectiveness of functioning of higher education. In This paper the investigator had put light on the importance and interdependence of Leadership and Management and their Role in Higher Education.

Key Words:Role of Leadership, Management, Higher Education, Educational Management, Institutional Leadership

Introduction

Leaders of higher education have responsibility in assuring the quality of their higher education institutions. However, quality assurance effort can only be achieved if there is hard work of all units in an education institution. Still, the role of leaders of higher education institution is essential because leaders look for voluntary participation of their subordinates in order to achieve the goals of organization. Furthermore, leaders of higher education need certain competencies to be effective in leading their higher education institutions. Moreover, higher education institutions in the future depend on effective leadership applied by higher education leaders.

Effective leadership is leadership applied by leaders who have interpersonal intelligence, so they can understand how to communicate with other people and build relationship in collaborative culture. In building good professional relationship, there must be awareness and involvement. Besides that, leadership also needs compliance and active listening even to those who are considered

would be a waste of time. Leaders must think outside the box by developing their own creativity skill and others' creativity skill in order to find innovative ways for change. In other words, leaders must have creative thinking through collaboration and stimulation of other people's thought that can direct personal inclination to be visionary.



According to RAMSDEN (1998), effective academic leadership in higher education is a function of several factors or characteristics. These include:

- Leadership in teaching,
- Leadership in research,
- Strategic vision and networking,
- Collaborative and motivational leadership,
- Fair and efficient management,
- Development and recognition of performance and
- Interpersonal skills.

Characteristics of Effective Leadership

Leadership is the most important and influential element of governments, organizations and businesses. Regardless of its importance, it is a difficult skill for the members of the leadership team, who feel very little in managerial roles, or the new organization is encouraged to have a high position within their organization. Development programs provide leaders with tools, confidence, information and skills to influence and motivate their followers, who allow the leaders of experienced trust to run easily and efficiently in the heart of the organizations.

- **Influence:**
The ability to inspire power to influence and lead others in action in leadership development is the dispersion of discrimination between a leader and a



manager. The best leaders are those who can successfully, above and above the organization, change the behavior by driving, the business can influence the results.

- **Credibility:**

Reliable leaders do not have to humiliate, manipulate or humiliate anyone publicly or privately, these leaders know that honoring people's loyalty and respect in return is important. Reliable leaders are transparent with their actions and there is no hidden agenda.

- **Teacher:**

Leaders are talented teachers and have mastered the art of training others in personal and professional development. They teach leadership principles and help others develop their own credibility.

- **Master Delegator:**

By employing responsibilities, the leaders develop skills in others. This involves allowing others to make a mistake and help staff learn through the process.

- **Empower Others:**

Empowerment is given to the leaders (to enable or allow) to take responsibility for others and take risks. Taking the possibilities is part of the process of development and learning and people need to take rest and to relax, to learn from mistakes.

- **Integrity:** Honesty is one of the top qualities of a great leader. It is a concept of actions, values, methods, measures, principles, expectations and continuity of results. It refers to a deep commitment to the right thing for the right reasons, regardless of the circumstances.

- **Trust and Respect:**

Leaders are able to gain trust and respect from others. Their behavior is predictable and consistent People trusts them because they have gained trust with their consistency in professional practice.

- **Celebrates Successes:** Effective leaders are able to identify success and celebrate those successes to their team. This team is an important component in function and development.

Management implies an orderly way of thinking. It describes in operator terms what is to be done, how it is to be done and how we know when have done. Management is not a mystique. It is a method of operation. Good management should result in an orderly integration of education and society "School management, as a body of educational doctrines, comprises a number of principles and precepts relating primarily to the technique of classroom procedure and derives largely from the practice of successful teachers. The writers in the field have interpreted these principles and precepts in various



ways, usually with reference to longer and more fundamental principles of psychology, sociology and ethics.

Educational Management

There is no single accepted definition of educational management as its development observed in several disciplines or fields like business, industry, political science, economics, administration and law. So while defining the meaning of the term educational management can be said that, “Educational management is a complex human enterprise in which different resources are brought together and made available to achieve and to accomplish the desire and expected goals or objectives. It is being mainly a human endeavour should be properly planned without emphasizing the rigid application of mechanical and physical principles. It is fundamentally a social organisation where inter human relationships must play a major role. For success of educational management, there must be adequate freedom and flexibility on the one hand and necessary discipline and decorum on the other hand in the educational institution. Thus, management of education or educational management implies the practical measures for ensuring the system to work for achieving the goals or objectives of an educational institution. So educational management operates in educational organisations or institutions.

“Theory and practice of the organisation and administration of existing educational establishments and systems.” — G. Terry page and J.B. Thomas

Educational Management works on:

- Setting directions, aims of objectives of educational organisations or institutions.
- Planning for progress of the programme.
- Organising available resources—People, time, material.
- Controlling the implementing process.
- Setting and improving organisational standards.

Review of the Literature

Setiawati Priska Maranata (2016) had put focus on the importance of quality assurance for higher education and the effective leadership role in assuring the quality of higher education institution based on qualitative approach with literature study method in her study on Effective Leadership in Quality Assurance for Higher Education: A Literature Review. Dr. Sharma and others (2013) had put focus on Management of Higher Education Institutions: Issues and Challenges. In their study the investigators suggested that Integrating programs such as seminars, workshops and updates on school administration and leadership can sharpen the skills of institutional leaders on the job. McKee & Massimilian, (2006) stated that ‘Resonant leaders’ effectively manage their



emotions and inspire followers to work in complex and changing environments. Avolio et al., (2004) state that Leadership can be defined in terms of traits, characteristics and behaviours that focus on a clear vision, action, modelling the way, ethical relationships, congruence, trustworthiness and collaboration.

Role of Leadership in Higher Education

- Creative Vision
- Planning and goal-setting
- Sharing the decision-making process
- Empowering and taking initiative
- Development of faculty and staff
- Building Community
- Empowering Teachers and Cultivate Leadership Skills
- Utilizing Data and Resources
- Creating Collaborative, Inclusive Learning Environments
- Lead by Example

Role of Management in Higher Education

The role of management can be divided into following parts:

1. Academic Management

- i. Curriculum and teaching learning process
- ii. Student assessment
- iii. Research
- iv. Library management

2. Student Service Management

- i. Enrolment projection and monitoring
- ii. Admission
- iii. Counselling
- iv. Alumni management
- v. Examination and results

3. Administrative Management

- i. Financial
- ii. Human resources
- iii. Infrastructure
- iv. Office administration

Conclusion

In the end it can be concluded that leadership and management are two entirely different, yet intimately intertwined, aspects of the overall effective functioning of a higher education. leadership is a process for influencing decisions and guiding people, whereas management involves the implementation and administration of institutional decisions and policies. leadership and



management cannot be addressed as discrete and autonomous entities. A meaningful understanding of both concepts can only be reached when they are examined in relation to one another. The symbiotic interdependence of leadership and management in higher education is an important element in understanding either concept. Each depends on the other for support and to provide the institution with the multifaceted decision-making, policy development and administrative roles necessary to function effectively.

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i ;køj.k mu l HkH çakř i Hkkola dk l e g g s t k s t h o k a d s H k k f r d , o a t ř o d " k f D r l s i H k k f o r d j r s j g r s g đ r F k k i r ; d t h o d k s v k o k f d ; s j g r s g đ ¹ o k L r o e a i ; k o j . k d s v l r x r m u l H k h n " k v k j l a x B u l a , o a i H k k o l a d s l f e e y r f d ; k t r k g s t k s f d l h t h o v f l o k i z t k r d s m n H k o l f o d k l , o a e r ; q d k s i H k k f o r d j r h g đ ² H k j r d s i ; k o j . k l j (k . k v f / k u ; e 1986 e a i ; k o j . k v ř š H k k e r F k k e k u o h ; i k . k h j v l ; t h i f o r i k . k h j i k ř š l i ř e t h o k . k q r F k k l E i f u k e s v ř š m u d s c h p f o l e k u v l r l E c a k l f e e y r g đ ³ i k d f r d i ; k o j . k d h l j p u k n s ? k v d a l s f e y d j g p z g đ ¼ ½ H k k f r d ; k v ř o d ? k v d ¼ ½ t ř o d ? k v d a ⁴ H k k f r d ? k v d d s v l r x r L F k y l t y l e n k v ř š o k ; q v k r s g đ v ř š t ř o d ? k v d e a t h o t l r j i k ř š v ř š e k u o v k r s g đ t h o e d y v ř š i k d f r d i ; k o j . k v k i l e a f u ; ř = r g l r s j g r s g đ i k d f r d i ; k o j . k d s f d l h H k h f g l l s e a d k b z l i f j o r z u g r k g s r k s m l i f j o r z u d h v l ; i f j o r z u l a l s i ř z g l s t k r h g đ i z f r u s l o ; a , d h f ř ; k f o f / k f o d f l r d j j [k h g đ f t l s v x r h e a I n d i a s e l f R e g u l a t o r y s y s t e m m e c h a n i s m d g k t r k r g đ b l f ř ; k f o f / k l s i ; k o j . k r e e a L o r % g h l a r y u c u k j g r k g đ e k u o t k r u s v i u h J s B r k f l) d j r s g q f o d k l d h t k s ; k = k v H k r d r ; d h g s m l e a i k d f r d l a k / k u a d k v r ; f / k d f o u k " k g v k g đ f o " o l r j i j v ř š k s x d ř k r l s g h t g l f o d k l d k s x r f e y h g s o g t a i ; k o j . k d s f y , l a d v [k v k g k u k " l q g l s x ; k A v k / k f u d r d u h d a l s e k u o u s i ; k o j . k d l s m l l h e k r d i f j o f r r d j f n ; k f d m l d k l o ; a d k v l r R o g h [k r j s e a i M + x ; k A v k t i k d f r d l a k / k u a d k f t l r j g l s f o n k s u g l s j g k g s m l d s d k j . k H k k f r d i ; k o j . k d s d i n ? k v d a e a b r u k i f j o r z u g l s x ; k g s f d m l d h { k r i r i r z v l r f u t g r " g k e ; k k v s v d " f ř ; k f o f / k } k j k l E h k o g h u g t a g đ b l r F k k d f f k r f o d k l d k l E i w l z t h o t x r i j i f r d y i H k k o i M k g đ ; | i o k k f u d v k f o d k j k a u s 0 ; f D r d h c g r j h d s f y , f " k { k v ř š L o k L F ; d s { k = e a v r ; f / k d ; k s n k u f n ; k g đ y ř d u b l ; k s n k u l s i z f r d s f o u k " k d k l a d v H k [k v k d j f n ; k A b - , O - " H k k d j u s d g k g s f d " v i u h o k k f u d o r d u h d h " k f D r d s e ř k f j r g l e u s d s m r l k g e a v k / k f u d e k u o u s m r i k n u d h , d h i z k y h d k f u e l z k d j f y ; k g s t k s i z f r d s l k f k v u k p k j d j r h g s v ř š , d s l e k t d h j p u k d j y h g s t k s e u t ; d l s f o d r d j r h g đ ⁵ f o d k l d s m l s ; v ř š f o p k j / k j k i j f o p k j d j u s d h " l q v k r 1970 d s i ; k o j . k v i n k s y u l s g p A y ř d u b l l s i o z H k h c < ř s i ; k o j . k h ; [k r j k a d h p p l z d i n y ř k d a u s v i u h j p u k v l a e a d h g s f t l e s ' S i l e n t S p r i n g ' (1 9 6 0) , i k y , j k f y p d h ' T h e P o p u l a t i o n B o m b ' (1 9 6 8) , l a ř j k v A l a k d h ' o n l y o f E a r t h R e p o r t ' , b o l y k ř t l v i f = d k d s f o " k s v d ' B l u e p r i n t o f s u r v i v a l ' v k f n u s f o d k l d k s i ; k o j . k d s f y , [k r j k e k u g đ i ; k o j . k l s t ř š v k n s y u v ř š l x h d j . k d s i H k k o l a d k v / ; ; u d j r k g s v ř š v ř š l x h d j . k l s g l s j g s f o d k l d h i f ř ; k d l s x y r B g j k r k g s t k s b l i z k j g s & ⁶



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1/6 i; fn l ekt dks l kekftd U; k; vS xjhc dh fpnk gS rks ikdfrd mRikn ds fouk" k dh vufr ugha tk l dA

1/7 i; dby xteh.k fodkl dh ckr djuk vi; kR gA xteh.k i; kbj.k vS ml ij fuHj xteh.k turk ds rHh cpk; k tk l drk gS tc fuoZuh; uxjh; fodkl l Hko cuk, A 9

jkVh; vS vUrjZVh; Lrj ij bl grq l dkjRed izkl fd, x, A 1909 ea vesj dk vS dukMk ds chip ty l hek l /k 1922 ea i fK; ka ds l j {k.k ds fy, vUrjZVh; l febr dk xBu gYfl at h i kS/kd kly vkt ku ijr cpus ds fy, ekV, y i kS/kd kly tyok; q i jorU D; kS i kS/kd kly vkfNA 1992 l s vHh rd 22 l feyu gS pps gA i s j l l feyu 2015 ea oS od rki eku dks c<us ugha nus ds fy, l e> k k fd; k x; kA yfdu buds fy, dkbZ dkuuh ck; rk ugha gA

Hkjr; l io/kku ea vufrNn 48 *d* Hkx 4 *d* rFk vufrNn 243 i; kbj.k l j {k.k dks egYo nrs gA vufrNn 21 ea vlr fufr "kO *thou ds vFZ ea LoPN i; kbj.k dks "kkfey djrs gq tu U; kl , oaij flFfr l j {k.k ds l UnHk ea l oPp U; k; ky; us Hk 0; k [; k nh gA fnYyh ea [krjukd Lrj rd igps ok; q i nmk.k ds de djus grq l e&fo'ke uEj dh dkja dks l e&fo'ke rkjh[ka ea pykus ds iz tsc l s ok; q i nmk.k ea deh vk; hA vkt dby i; kbj.k l j {k.k dks gh thou dk , dek= igyw ekudj fodkl dh miSkk ugha dh tk l drh D; kSda l H; rk vS vS kSxhdj.k dh nM+ea tgla igp x, gS ogla l s, dne vkfne volFk ea ykSuk Hk l Hko ugha gA , d s ea xalkh n"ku ea fufr fopkj dk Qh egYo i wZ gA gY/kfd vkt ds l e; dh i; kbj.k dh l eL; k, a egRk xalkh ds l e; ugha FkA ijUrq fodkl] rdudh] vkrefuHj rki xte Lojkt vkfn fopkj i; kbj.k ds i fr mudh l kp dks idV djrs gA jkeplnz xgk tS s fopkj d egRk xalkh dks i kj fEkd i; kbj.kfon-ekurs gA 10 xalkh dh dk ekuuk Fk fd vk/kqud l H; rk tS vS kSxhdj.k dh cqu; kn ij [kMh gS ea dby FkA l s ykx fo'o ds ikdfrd l d k/uka dk fonkgu djds vehj cu tksr gS tS ykxk vS yyp dks vS c<k nsk gA 11 1909 ea idkfr "fgln Lojkt" i qrd ea egRk xalkh bl l H; rk dks "kSkuh l H; rk" dgrs gA xalkh th Hk nfV ea ; g /kjr h vius i R; d fuokl h dh vko"; drk dks i jk djus ds fy, ; FkSv l k/ku mi yC/k djokrh gS yfdu gj 0; fDr ds ykyp dh i frZ ugha dj l drhA mudk ekuuk Fk fd vk/kqud l H; rk vl hfer vko"; drk vka ij vk/kfjr gS ogha ikphu l H; rk dh idfr vk/; kRed Fk ft l ea Hk dfrd vko"; drk vka ij vk/kd tS ugha fn; k tkrk FkA xalkh th ds vuq kj i f"peh l H; rk vS fokku us us drk l s eg ekM+fy; k gA gkykhd xalkh th rdudh ds Hk f[kyQ ugha FkS ijUrq os ml rdudh ds f[kyQ FkS tS ekuo dh vRk dks uV dja ft l ds ek/; e l s ekuo vko"; drk vka dks i jk djus ds fy, idfr dk vkk/kdk fonkgu fd; k tk, vS idfr ds l argy dks [kRe dj fn; k tk, A tgl; i f"peh fopkj dka us ukj fn; k] idfr dh vS ykS/ks ogha xalkh th us "xte Lojkt" dh /k j. k nhA cM+ i kS i j fdl h , d "kgj ea mRi knu ds i a hokh fl) kR ds LFkku ij os T; knk ykxka }kjk y?k bclbZ dka ek/; e l s mRi knu dk fl) kR nrs gS tS vkfFkd fodlnhdj.k ds fl) kR ij vk/kfjr gA bl fl) kR l s xkba l s ykxka dk i yk; u : ds k] dN "kgj ka ea tul e; k nco ugha gS xk vS mRi knu l s xkba l s ykxka dks jst xkj Hk feyxa bl rjg i; kbj.k ds fouk" k l scpko ds l kFk&l Fk vketu ds fy, Hk l qo/k tud gA mudk Jej k h dk fl) kR gj 0; fDr dks dke l s tM+ k gS ft l l s l ekt ea dks Hk oxZ vehj ugha cu ik, xk vS l kekftd] vkfFkd U; k; dh LFkki uk ea enn feyxa

xalkh viuh vko"; drk vka dks l hfer djus ij cy nrs gS ft l l s mi Hksx ea deh vk; s vS idfr ij Hk j Hk de i MA mudk dguk Fk fd ; g oKkud rF; gSfd tgl; txy T; knk dKvS gS o'kZ de gsrh gA tgl; i M+ yxk, tksr gS ogkackj "k c+> tkrh gS vS i Mha dh l e; k ea of) gkus yxrh gA 12



, d LFku ij T; knk d kj [kku; i; kbj.k inik.k] tul [; k ?kuRo ea of)] xkela l si yk; u vkfn LokLF; ds fy, foijhr ijfLFkr; ka dks tle nrs gA ftudk mik; xkalkh th fodlnh; dj.k] y?kq vSj dVh m | kxka ds : i ea nrs gA

vkt idfr o i; kbj.k eaekt m tgjhyh xS ka dk Lrj ftl rjg c<k gSm l lsvLFkek tS sjkxka ea rsth l s of) gPZ gA i; kbj.k l s tMh l el; kvka dsfy, pruk vSj tkx: drk ykus dks ikfFedrk nuk vko"; d gA i; kbj.k pruk l srkRi; l gSfd euq; ; g l e>s dh idfV k inV k i; kbj.k ds l kfk l xfr j [kus ea l [k vSj l ef) gS, oafol xfr ea onuk , oafolHfr'kd k vlrufgr gA i; kbj.k pruk dk jpuRed Lo: i ; g gS fd euq; ijfLFkr dh l aryu dks l j fkr j [ks, oa i; kbj.k inifr ugha dja i; kbj.k l Ecl/kr fpru dh ikphure ijEijk dk ifke l kkkRdkj onka ea ifjyfkr gA glaykfd vk/kqud i; kbj.k; foKku dh rdudh "kRnkoyh onka ea iz, r ugha gA yfdu idfr vSj ekuo ds vu; k; kfJr l kgp; l dh tkudkj ekuo tfr dks bl ikphu Kku Hk/kj ea miyCk gA

onka ea l eLr i; kbj.k dh j[kd , d ekv h ijr dk mYyqk feyrk gA __Xon ds vuq kj *, d egku-ekv h ijr }kjk tyh; okroj.k dk fu; a.k gsrk gA ^{12A} ftl idkj f>Yyh xHkLFk f"kk"q dh j{kk djrh gA ml h idkj ; g egku-mYc ¹³ bu ea-ka ea of.kf "mYc orZku ea ifjHkkr vkt ku ijr dh vSj l xdr djrk gA ; fn ekuo i; kbj.k ds ?kVdka dks l j fkr djxk rks og ml ds fy, j{kk dop dk dke djxka Hkkrh; onka ea i; kbj.k l j{k.k grq ofk ouLifr; ka dks egfoiwZ ekuk x; k gA ; tPh us ofkka dks i; kbj.k ea nqi Hkoka dks "keu djustoky ekuk gA ¹⁴ vFkobsn ea v"o"o ofk dks vkid ltu nusoky ekuk gA ¹⁵ __Xon ds vuq kj ty ea mxus okys i kS; ou rFk ofkka l s vkPNkfr ior inik.k dks de djrh gA ¹⁶ ou Hkka dk l j{k.k djrs gS rki ekufu; a-d vSj ty o'kd gsrk gA tks l wZ dk l h/k rki ugha vkus nra ou {s- esueh cuh jgrh gS vSj bl l srki ekufu; a-r jgrk gA ¹⁷ onka ea ekuo vSj i; kbj.k dks, d ml js dk ijd ekuk gS bl hfy; s onka ea ouLifr) ufn; ka vkfn dks i n'uh; ekuk tkrk gA ¹⁸

fu'd'iz %& c<rs i; kbj.k ds [krjs; Fkk&ck<} l eph ty Lrj dk c<uk] vkidVd ij rsth l s cQZ dk fi?kyuk] fgeky; {s- ea ck<+dk vkuk vkfn dks n'krs gq vc l e; vk x; k gSfd ge; g fuf"pr dja fd rhoz fodkl pkrf, ; k i; kbj.k l j{k.k ¹⁹ bl grq dN kra i j /; ku nuk vko"; d gS x; k gS &

- 1- oula ds l j{k.k ds fy, l kelftd] /kfeZl vklnkyu pyk, A tk, A
- 2- fodkl dh ifO; k dks fl QZ Hkkrd vFkka l s ckj fudkyk tk, vSj i; kbj.k l j{k.k l Ecl/kr epnka ij tuppZ tu l gHkkrk c<k bZ tk, A
- 3- mRiknu dh rdudh , d h gS tks fodkl ds l kfk&l kfk i; kbj.k l j{k.k dja
- 4- Atk ds ofYid l k/kuka dk 0; ki d Lrj ij iz kx gka
- 5- mRiknu dh y?kq bZk bZ ka ij tSj fn; k tk, rkfd cM& i&kus ij gkus mRiknu l s l Ecl/kr cjk bZ ka tS s & c<rk "kgjhj.k] xkela l si yk; u] inik.k l s cpk tk l dA
- 6- mRiknu ds dlnz dNd cM& "kgj u gk d j xk o Nks/s "kgj Hk gS ft l l s vSj kxhdj.k ds fodlnr xkalkohn ekMry dks viuk; k tk l dA bl ekMry ea cM& m | kxka dk iwZ"; k ykS ugha gksk oju- vko"; drkuq kj Nks i&kus ij mRiknu djuk gA fodkl vSj i; kbj.k ds bl }U} ea vc , d k jkLrk fudkyuk gksk tks idfr dks upl ku igpk, s feuk fodkl dh vSj ys tk l dA fodkl "khy n'skka dks fodfl r n'skka dk vuqj.k djustigyl kpuk gkska bl i h<h dks vkus okyh i h<h ds Hkfo"; ds ckjs ea fopkj djuk gkska vc l e; vk x; k gSfd foKku vSj fodkl] rdudh rFk c<rh mi Hkksoknh i ofr dks ufr drk ds vk/kj ij ij [k tk,] vko"; drk vka dks l fer djust ij tSj fn; k tk,] rHk i; kbj.k dh l el; kvka dks l y>kuk l Hko gkska xkalkohn utfj; s ds vuq kj i; kbj.k l j{k.k vSj fodkl ds e/; l keatL; dk ekZ viukdj mpr rdudh l s idfrd l d k/kuka ds vko"; drkuq kj U; ure fonku dks l fuf"pr fd; k tk, A

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- 6- nq; ,e-ih fodkl ,oai ;k; j.k dk vUr}D} % , d ifj is ;] "kksk i =] Kku foe"l v) bfr'kd
"kksk if=dki dks/k [kyk fo"ofokky;] dks/k] tuojh 2009] i: 19
- 7- jkt- if=dki l ekpj i =] t; ij] 19 fl rEj 2019] i: 10
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emeW bu , f" k; k ynu] 1988 i: 67
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- 14- "k-ck- 2-2-4-5
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- 17- mi ; r ukV u- 15
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ANALYSIS OF GROWTH AND VARIABILITY OF EQUITY FUND SCHEMES

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Abstract

Net Asset Value (NAV) is one of the criteria to assess the performance of the Mutual Fund Schemes. Buying and selling, as well as performance of mutual funds can be traced by tracking its NAV. As the NAVs are calculated usually on a daily basis and the fund's performance can either be measured against various benchmarks or against mutual funds from other fund houses those have similar investment objectives. In this research paper, 10 Equity Funds are analyzed with the help of Net Asset Values (NAV) of respective schemes. In case of public sector funds Canara Robeco Emerging Equities (G) showed highest SGR, while Baroda Pioneer PSU Equity Fund Plan-A (G) showed negative SGR. In case of private sector Birla Sun Life Advantage Fund (G) has shown highest SGR, while negative growth was accounted by HDFC Premier Multi-Cap-(G). Noticeable fact is that both of sectors had peak in the year of 2014-15. The ranking of ten Equity fund schemes according to highest CGR values and lowest CV values of both sectors also carried out.

Keywords: Mutual Funds, Equity, Public Sector, Private Sector, NAV, Etc.

I. Introduction:

Net Asset Value (NAV) is one of the criteria to assess the performance of the Mutual Fund Schemes. In simple words NAV is per unit market price of the mutual fund scheme. Net Asset Value (NAV) of a fund is the total market value of all the investments of the fund (minus its expenses) divided by the number of units outstanding, on that given day. NAV equals the current market value of a fund's holdings minus the fund's liabilities (sometimes referred to as "net assets"). In a majority of the mutual fund holdings, the Net Asset Value is calculated on a daily basis after the trading closes in some specified financial exchange. The open-ended schemes in mutual funds sell as well as exchange their shares at the net asset value. The closed-ended schemes in mutual funds are allowed to sell their shares at either higher or lower price range than their actual net asset value. This system is known as the premium or discount in mutual fund industry. In the mutual fund industry, when a fund is divided in varied groups of shares, each group has its own NAV. Buying and selling, as well as performance of mutual funds can be traced by tracking its NAV. As the NAVs are calculated usually on a daily basis and the fund's performance can either be measured against various benchmarks such as a stock market index like the Sensex, Nifty, BSE 200, etc., or against mutual funds from other fund houses those have a similar investment objectives.



In this research paper, 10 Equity Funds are analyzed with the help of Net Asset Values (NAV) of respective schemes. A comparative study of the different schemes under Equity funds, as well as comparative analysis of Public Sector and Private Sector Mutual Funds has been done by considering average of monthly NAVs.

II. Objectives:

- 1) To assess the growth and variability of selected equity funds.
- 2) To compare the public sector and private sector equity fund schemes.

III. Database and Methodology of the Study:

➤ **Collection of data and Statistical Tools** –This research is entirely based on secondary source of data. The data relating to Net Asset Value (NAV) of Selected Mutual Fund schemes have been collected through websites of respective mutual fund companies. Other websites such as www.amfiindia.com, www.mutualfundindia.com www.moneycontrol.com, and www.valueresearchonline.com have been used. For evaluating market return and risk, NIFTY-50 taken as benchmark index and data has been collected from National Stock Exchange (NSE).

There were 47 Mutual Funds at the end of March, 2012. Out of these 10 Mutual Funds have been selected, based on highest percentage share of Average Assets Under Management (AAUM). The sample comprises top 5 from Public sector and top 5 from Private sector mutual funds. From each Mutual Fund top performing Equity fund schemes have been selected by adopting Purposive sampling Method, during the year 2011-12. This enables to identify growth and variability of fund schemes as well as comparative study of the public and private sector Equity mutual fund schemes. Selected sample consist only Open-ended Growth Schemes for the study. This possesses the homogeneity of the data and is helpful for peer group comparative study.

Furthermore, statistical measures of Compound Growth Rate, Simple Growth Rate and Coefficient of Variation have been adopted to identify the growth, risk element and consistency of the schemes.

- **Period of Study** – Monthly basis data i.e. April 2011- March 2012 to April 2015- March 2016 is considered. A maximum of 60 observations of sample schemes as well as market index NIFTY-50 have been collected.
- **Scope of study** – Study covers evaluation of the financial performance of sample mutual funds. Especially the growth and variance of NAVs, ranking and comparative analysis of both public and private sector selected Mutual fund schemes has been carried out under this study.
- **Limitations of the study** – The study is limited to selected Equity Fund schemes only.

IV. Review of Literature:

1. **V Aditya Srinivas**, discussed in his paper ‘Mutual Funds as a Tool for Financial Inclusion’ that Mutual funds, being low risk, enable the common man to participate in the capital market and thereby benefit from the Indian growth story.
2. **G.V.Satya Sekhar**, in his article "Role of Indian Mutual Funds in Financial Inclusion: Public Vs Private Sector" has examined the role of mutual fund

organization in financial inclusiveness. He considered the performance of public and private sector through AUM and unit holding pattern of the funds.

- “Trends of Household Savings and Its Impact on Indian Economy” article by **Dr.D.Padma**, has mentioned that household sector is the major sector which contributes nearly 73% to total gross savings than the private sector (20%) and public sector (4%). Household income, its distribution to expenditure and savings are very important for economic analysis. These determine the nature and rate of saving and the rate of economic growth. Since savings of a household and economic growth are closely related.

V. PRESENTATION OF DATA

The growth and variation of sample schemes is analyzed below.

- Analysis of NAV and Measurement of Variability**

Researcher has examined the Mutual Fund scheme growth considering an average of monthly NAVs of Equity Fund Schemes. Compound Annual Growth Rate and Simple Annual Growth Rate have been implemented to measure the growth in NAV. To measure the consistency of growth, Coefficient of Variation (CV) is implemented. CV is a statistical measure of the dispersion of data points in a data series around the mean. Lesser the value of CV, higher will be the consistency of the scheme and vice-versa. This analysis will help us to draw reliable conclusions, to make comparison and to assess the performance of Mutual Fund Schemes.

- Analysis of NAV of Equity Fund Schemes**

Equity funds primarily invest in stocks, aimed at providing comparatively high returns within the mutual funds family, but with a relatively higher degree of risk by investing in the equity and equity related instruments of companies over medium to long term. Within equity funds, the structure of a particular fund may differ from that of another. These funds include diversified funds, market capitalization based funds, sector specific funds and theme based funds and tax saving funds.

Table – 1 Analysis of NAV of Equity Fund Schemes Group-A
Average of Monthly NAVs (Rs.) (2011-12 to 2015-16)

SN	Name of Mutual Fund Schemes	2011-12	2012-13	2013-14	2014-15	2015-16	Statistical Results		
A) Public Sector Mutual Fund Schemes							Mean	C.V.	CGR
1	SBI Blue Chip Fund (G)	13.5	16.22 (20.15)	17 (4.81)	24.79 (45.82)	27.9 (12.55)	19.88	27.62	20.64
2	UTI-Top 100 Fund (G)	27.55	29.25 (6.17)	31.69 (8.34)	44.49 (40.39)	47.39 (6.52)	36.07	22.77	16.23
3	Canara Robeco Emerging Equities (G)	21.83	24.71 (13.19)	26.59 (7.61)	49.06 (84.51)	59.19 (20.65)	36.28	41.35	30.74
4	LIC Nomura Equity Fund (G)	24.33	26.49 (8.88)	27.04 (2.08)	38.27 (41.53)	37.9 (-0.97)	30.81	19.52	13.36
5	Baroda Pioneer PSU Equity Fund Plan A (G)	7.73	7.09 (-8.28)	6.05 (-14.67)	8.6 (42.15)	7.6 (-11.63)	7.41	11.30	1.60
B) Private Sector Mutual Fund Schemes							Mean	C.V.	CGR
6	Kotak-Classic Equity (G)	19.55	21.81 (11.56)	24 (10.04)	33.09 (37.88)	34 (2.75)	26.49	22.41	16.46
7	HDFC Premier Multi-Cap (G)	27.44	26.76 (-2.48)	26.13 (-2.35)	40.82 (56.22)	41.27 (1.10)	32.48	21.56	13.18
8	Reliance Equity Opportunity Fund Institutional Plan (G)	9.1	10.57 (16.15)	11.19 (5.87)	17.71 (58.27)	19 (7.28)	13.51	29.83	22.00
9	Birla Sun Life Advantage Fund (G)	143.76	146.8 (2.11)	159.88 (8.91)	254.34 (59.08)	288.22 (13.32)	198.60	30.49	21.42
10	ICICI Prudential Focused Blue chip Equity Fund (G)	16.92	17.17 (1.48)	19.2 (11.82)	27.19 (41.61)	28.3 (4.08)	21.76	22.83	16.50

Source: Data collected from respective Mutual Fund websites from 2011-12 to 2015-16
Note: Figures in the parenthesis indicates Simple Growth Rate (SGR)

Graph: 1 Analysis of NAV of Equity Fund Schemes Group-A

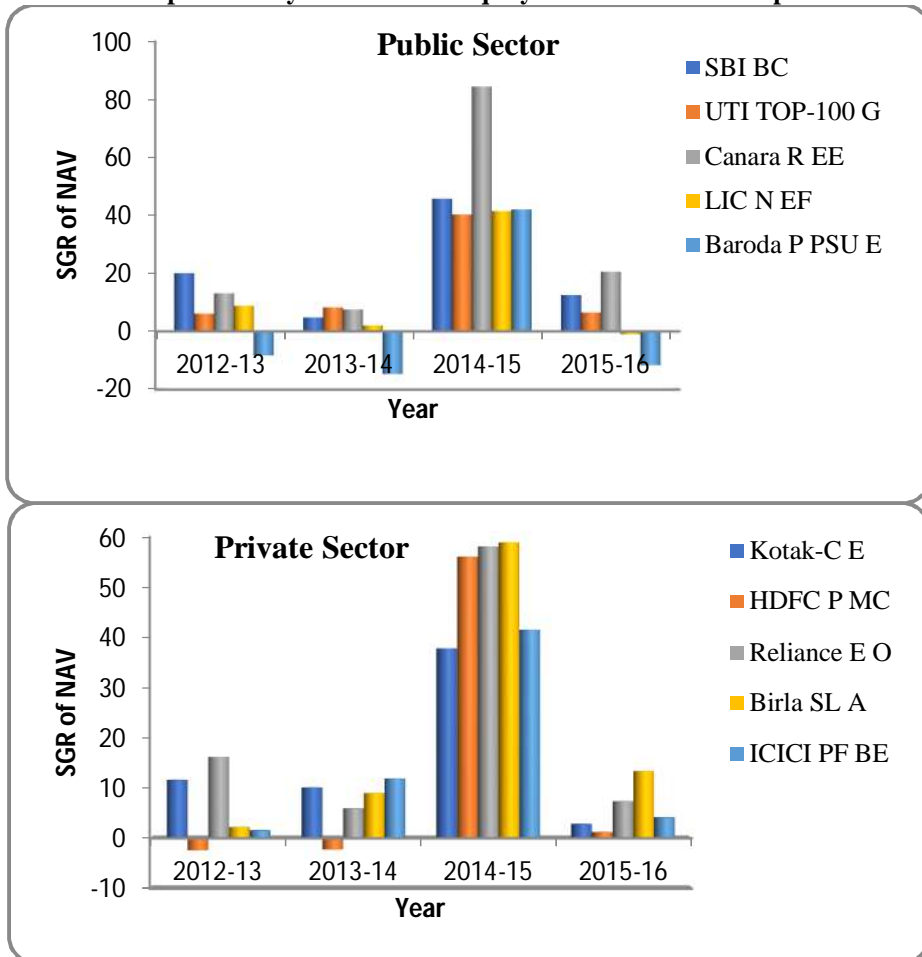


Table -1 summarizes the growth of monthly average NAV of ten equity fund schemes for the year 2011-12 to 2015-16. During the years 2011-12, 2012-13 and 2013-14 the NAV values were below mean NAV of respective schemes. From scheme No. 1 to 10 (except scheme No.5, Baroda Pioneer PSU Equity Fund Plan-A (G)) all equity schemes showed the NAV values which are above the mean NAV of respective schemes, for the year 2014-15 and 2015-16. While Baroda Pioneer PSU Equity Fund – G showed a little bit high NAV value than mean NAV value in 2011-12 and accounted Rs. 7.73. For next two years the NAV value was low. In the year 2015-16 the NAV values of respective mutual fund schemes have reached the maximum level compared to all other years except, Baroda Pioneer PSU Equity Fund. Observing the SGR (Simple Growth Rate) values, it can be concluded that the growth of all equity schemes was higher in the year 2014-15. During this period the NAV figures had an extraordinary boost. Therefore, the



year 2014-15 is the period for an extraordinary market fluctuation with fair yield of all equity schemes under this study period.

Highest growth rate (CGR of 30.74) and variation (CV of 41.35) is accounted by Canara Robeco Emerging Equities (G) under public sector. This indicates that this scheme had highest growth with more fluctuations as NAV is concerned during study period.

The second highest growth rate is accounted by Reliance Equity Opportunity Fund Institutional Plan (G) with CGR of 22 and CV of 29.83 percent, followed by Birla Sun Life Advantage Fund (G) (CGR of 21.42 and CV of 30.49) under private sector. This shows that Reliance Equity Opportunity Fund Institutional Plan (G) has performed well with less variation compared to Birla Sun Life Advantage Fund (G).

Analyzing the CGR and CV figures of all equity schemes, Baroda Pioneer PSU Equity Fund (G) showed lowest CGR of 1.60 with least CV of 11.30 under public sector over a study period. It is identified that this scheme had lower growth with less variation. As all equity schemes have shown positive CGR values it can be said that all schemes have positive growth.

Graph -1 illustrates the growth of ten equity fund schemes. In case of public sector funds Canara Robeco Emerging Equities (G) showed highest SGR, while Baroda Pioneer PSU Equity Fund Plan-A (G) showed negative SGR. During 2014-15 all schemes showed highest SGR in their respective NAVs compared to remaining years. In case of private sector Birla Sun Life Advantage Fund (G) has shown highest SGR, while negative growth was accounted by HDFC Premier Multi-Cap-(G) in 2012-13 and 2013-14. During 2014-15 all schemes had boom compared to rest of the years. Noticeable fact is that both of sectors had peak in the year of 2014-15.

- **Ranking and Comparative Analysis of Selected Schemes Based on Variation (CV) and Growth Rate (CGR)**

In this section, Rank method has been employed to assess the NAV growth, in addition, to measure the variation CV has been taken into account. Ranks are assigned to these indicators namely CGR (Compound Annual Growth Rate) and CV (Coefficient of Variation).

The merit ranking scores are given in the following manner. The basis for allotting scores is that higher value of CGR implies good performance. Hence, Rank '1' is assigned for the highest value of CGR. Further, for lesser and lesser values scores would be 2, 3, and 4 and so on in that order ranking is allotted to the respective fund schemes. Thus the fund with the highest value at CGR would get the lowest score, which implies the superior performance.

The lower value at CV implies better performance in terms of variation i. e. risk, in other words less volatility which guides to low level of risk. Therefore lowest rank i. e. '1' assigned to lowest CV and vice versa. Further, higher and higher value of CV represents more volatility; therefore scores would be 2, 3, 4 and so on in that order is allotted to the respective fund schemes. In the later part, different groups in both sectors (public and private) are also assigned ranks. This acknowledges the NAV growth performance of different groups as well as both sectors.

• **Ranking of Equity Fund Schemes**

This section evaluates the ranking of ten Equity fund schemes. These schemes have been ranked first according to highest CGR values and lowest CV values of both sectors separately.

According to **Table 2** CGR values of all Equity schemes in public sector lay between the range of 1.6 percent to 30.74 percent. CV values lay between the range of 11.30 percent to 41.35 percent. Observing the growth rate (CGR) and variation (CV), Canara Robeco Emerging Equities (G), followed by SBI Blue Chip Fund (G) have highest growth along with higher CV; it shows growth is incorporated with fluctuation. Increase in the growth of NAV also leads raise in variation too.

In private sector, CGR values vary in between range of 13.18 percent to 22 percent. CV values have position in between 21.56 percent to 30.49 percent. Observing the growth rate (CGR) and variation (CV), Reliance Equity Opportunity Fund Institutional Plan (G) followed by Birla Sun Life Advantage Fund (G) has highest growth along with higher CV. Here also, it is identified that, as the growth rate of NAV increases, value of Coefficient of variation also increases.

**Table - 2 Ranking of Equity Fund Schemes
Average of Monthly NAVs (Rs.) (2011-12 to 2015-16)**

SN	Name of Mutual Fund Schemes	CGR	Rank (Based on CGR)	C.V.	Rank (Based on CV)
A. Public Sector Mutual Fund Schemes					
1	SBI Blue Chip Fund (G)	20.64	2	27.62	4
2	UTI-Top 100 Fund (G)	16.23	3	22.77	3
3	Canara Robeco Emerging Equities (G)	30.74	1	41.35	5
4	LIC Nomura Equity Fund (G)	13.36	4	19.52	2
5	Baroda Pioneer PSU Equity Fund Plan-A (G)	1.6	5	11.30	1
B. Private Sector Mutual Fund Schemes					
6	Kotak-Classic Equity (G)	16.46	4	22.41	2
7	HDFC Premier Multi-Cap - (G)	13.18	5	21.56	1
8	Reliance Equity Opportunity Fund Institutional Plan (G)	22	1	29.83	4
9	Birla Sun Life Advantage Fund (G)	21.42	2	30.49	5
10	ICICI Prudential Focused Blue chip Equity Fund (G)	16.5	3	22.83	3

Source: As per Table - 1

Note: Ranks are assigned to sector wise. Highest CAGR and Lowest CV are given first rank.

VI Conclusion

An evaluation of the financial performance of sample mutual funds in case of Growth of Mutual Fund schemes at aggregate level showed that Equity schemes showed positive CGR values.

While studying the sector wise comparative analysis of mutual fund groups it was found that, in both public as well as private sector; all equity schemes have shown spectacular growth.



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**EFFECT OF WATER QUALITY ON FISH FARMING OF SEWAGE
FED CHOUR IN MADHEPUR C.D. BLOCK OF MADHUBANI
DISTRICT IN BIHAR**

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Abstract

Present study deals with the assessment of some physico-chemical , microbial parameters and fisheries activities of a sewage fed Madhepur Chour for its suitability of human consumption and fish culture have been carried out during the period 2017- 18. The aims of the present study were to determine the water quality, assess nature or humans impact on the physicochemical and biological characteristics of the Chour water with a view to effective utilization, better management, conservation and sustainable exploitation of the Chour resources. E-coliforms were used as indicators of bacterial pollution while phosphate, nitrate, BOD and oxygen were used as indicators of possible nutrient enrichment in the Chour. This water body lies in the heart of the Madhepur, Madhubani, Bihar and continuously receiving sewage from the surrounding residential areas and producing bad odor. Nitrate, phosphate and BOD values were high depicting cultural eutrophication occurring from surface runoff of nitro-phosphate fertilizers from nearby lands into the Chour and the present findings revealed that the water quality of the Chour is productive and eutrophic.

Keywords: Physico-chemical, Characteristics, Madhepur Chour, Biological and Pollution.

Introduction:

Population growth due to rapid industrialization has resulted in the increase of wastewater discharge into the environment. Out of the waste water generated a major portion is supported by the sewage water. Sewage is a complex mixture of natural inorganic and organic materials with a small proportion of man-made substances. Normal domestic and municipal waste water is composed of 99.9% water and 0.1% suspended, colloidal and dissolved solids. Wastewater is characterised with rich total solids, suspended solids, biological oxygen demand, chemical oxygen demand, nitrate, chloride, sodium and potassium contents. Other sewage characteristics include high level of pH value, turbidity, total hardness, colour and coliform count. Waste water, although sufficient as a



source of nutrients, can generate problems such as toxicity to fish, accumulation of heavy metals and toxic substances in the muscles of fish, and the potential danger of transmission of pathogens from waste water to handlers and consumers. A Water Quality Index (WQI) is defined as a rating reflecting the composite influence of different water quality parameters on the overall quality of water.

Water is an elixir of life. Majority of water available on the earth is saline in the nature, only small quantity exists as freshwater. Freshwater has become a scare commodity due to over exploitation and pollution. Industrial, sewage and Panchayat wastes are being continuously added to water reservoirs, affect physico-chemical quality of water making them unfit for use of livestock and other organisms. Excessive algal growth has been noticed in the water body due to high concentration of nutrients. Water quality conditions in a water body are controlled by both natural processes and human influence. Natural factors such as the source of the water and the types of rock and soil in the pond watershed will influence some water quality characteristics. These factors are difficult to control and usually cause few problems. Instead, most serious water quality problems originate from land uses or other activities near or in the waterbody. The effects of these activities can usually be minimized through proper management and early detection of problems through testing.

Concerns about Chour water quality are directly related to the uses of the waterbody. As with all management decisions, consider the primary uses of waterbody to determine which water quality parameters are of greatest concern. For example, a water body used to supply drinking water for animals should be tested for different parameters than a Chour used excessively for fishing.

Sewage fed fisheries is unique technique of utilization of domestic sewage for fish culture. The early inspiration of utilizing the sewage for fish culture emerged from the waste. Stabilization pond used as water source of vegetable fields. This technique is considered to be the largest operational system in the world to convert the waste in consumable product.

This practice is not only unhygienic but also harmful since the sedimented organic matter besides raising the bed level of Chour being highly oxidisable in character may undergo decomposition and cause negative oxygen balance causes mortality of aquatic fauna. But sewage partly or fully decomposed contains a high percentage of nitrogen, phosphorus, Ca, K etc. These nutrients together with adequate alkalinity contribute largely to a high productivity in sewage water and for this reason fertilization of fishpond is sometimes carried out with raw sewage. Usage of more land for agricultural purposes, soil salinization, increase in the use of agricultural fertilizers, common pesticide use and erosion have become problems threatening natural water source.



Review of Literature:

The final and specific reason for reviewing related literature is to know the recommendations of the previous researchers for further research which they have listed in their studies.

Kannel *et al.* (2007) One of the most important critical factor in natural water bodies is the amount of dissolved oxygen. It is regulated by abiotic and biotic factors and susceptible to frequent changes. Dissolved oxygen is a regulator of metabolic processes of both plant and animal communities and acts as an indicator of water quality. Fish cannot survive when DO content is less than 3 mg/l.

Ramachandra *et al.* (2012) Conductivity (specific conductance) is the ability of water to conduct an electric current. Most dissolved inorganic substances are in the ionized form in water and contribute to conductance. The conductance of the samples gives rapid and practical estimate of the variation in dissolved mineral content of the water supply.

Rajankar *et al.* (2009) The total alkalinity or acid combining capacity, is generally due to carbonate and bicarbonates of calcium and magnesium. The presence of carbonates, bicarbonates, and hydroxides are the main cause of alkalinity in natural waters.

Stone and Thomforde (2004) The amount of calcium hardness is important in pond fertilization because higher rates of phosphorus fertilizer are required at higher calcium hardness concentrations.

Bhatnagar and Devi (2013) Calcium and magnesium are essential to fish for metabolic reactions such as bone and scale formation.

The objectives of the study:

The objectives of the present study is to observe water quality of Madhepur Chour by physico-chemical and microbial procedures and to determine the changes in water quality parameters by seasons.

Material and Methods:

Madhepur Chour is a perennial fresh water body located in Madhepur C.D. block, Madhubani, Bihar. This waterbody is situated at 26.1738° N, latitude and 86.3753° E longitude. The Chour receives water from Kosi River, rainwater and sewage from residential settlements. The total area of the water body is about 100 hectares and depth is around 5-7 Mt. The water from this Chour is used for irrigation and as well as for fish culture. Water samples were collected from selected water body in labelled and pre-treated polyethylene bottles by random sampling technique taking all the necessary precaution without entrapping any air bubbles and without disturbing the bottom sediment. The parameters like dissolved oxygen, and pH were analysed onsite itself and water samples were brought to the laboratory for further analysis. The physico-chemical parameters such as pH, dissolved oxygen, total alkalinity, total hardness, electrical



conductivity, total dissolved solids in triplicate by adapting standard procedures. Water samples were collected monthly during morning hours of the day (between 8 AM to 10 AM) covering one year from February 2017 to January 2018. Some changeable and sensitive parameters like pH, dissolved oxygen, water temperature and free CO₂ were directly analyzed in the field itself. The unpreserved and preserved samples were transported to the laboratory keeping in icebox for analysis of remaining parameters. All necessary precautions were taken during sampling and transportation. E.coli analysis was carried out by membrane filter technique and coliform density was calculated as per MPN tables. Fishes were identified as per standard literature.

Results and Discussion:

It is evident that the maintenance of healthy conditions in aquatic ecosystem is dependent on the physico-chemical properties of water and biological diversity. The water temperature of the Chour is an important parameter influencing the water quality. It varied according to the seasonal fluctuation of atmospheric temperature with maximum during summer season (35.60⁰C) and minimum during winters (10.05⁰C).

pH is a measure of the acid qualities of water; a pH of 7.0 means a neutral solution; water with a pH below 7 is normally harmful in that it may dissolve iron from pumping facilities and mains and produce a red water problem pH is one of the important factors that serve as an index of the pollution. The present waterbody showed an alkaline pH with the values ranging from 7.50 to 7.95. pH value of majority of lakes and reservoirs in India has been found between 6 to 9. The higher range of pH indicates higher productivity of water. pH is lowered by acids: acid generating salts and free CO₂ ; HCO₃, OH⁻, PO₄ and borates. Acceptable range of pH is 6.5-8.5.

The total dissolved solids test measures the total amount of dissolved minerals in water. The solids can be iron, chloride, sulphate, calcium or other minerals found on the earth surface. The dissolved minerals can produce an unpleasant taste or appearance and can contribute to scale deposits on pipe walls.

In the present study, TDS values varied between 345.20 and 418.70 mg/l. The peak value was observed in summer season. High solids in water cause inferior potable quality of water. However, total suspended solids ranged from 32.80 to 110.55 mg/l. Water body exhibited high value of solids which is caused by the addition of high quantity of sewage.

Chlorides in water body can be occurring naturally by deep aquifers or caused by pollution from water course, or industrial or domestic wastes. Chloride level above 250 mg/l can produce a distinct taste in drinking water. Where chloride content is known to be low, a noticeable increase in chloride levels may indicate pollution from sewage source. Chloride concentration varied between 160.50 and 186.78 mg/l. The limit of chloride is 250 mg/l with the upper limit of 1000



mg/l for drinking water. In such condition the chloride concentration of the water body is under safe limit.

Dissolved oxygen (DO) in the water is necessary for respiration and thus is essential for aquatic life to exist. Much of the oxygen comes from the atmosphere and is dissolved in the water through diffusion and wave action. The remainder comes from plants through photosynthesis. It is removed by bacterial and other respiration. When the oxygen concentration falls below ppm there is not enough oxygen for fish to survive or for the oxidation of dead plant material. In the current study, DO level fluctuated from a minimum of 2.2 mg/l to a maximum of 4.4 mg/l with an average of 3.2 mg/l. Eventually, the water body goes from an oligotrophic to an eutrophic state. Thus, it is important to keep track of the dissolved oxygen.

The present investigation revealed that the free CO₂ is deviated in the range of 13 to 28 mg/l. High values were observed in summer (26 mg/l), where as lower values in monsoon season (15 mg/l). Total hardness is a measure of calcium and magnesium concentration in water and is controlled by the source of the Chour water. Water body in limestone areas will generally have harder water than those in areas underlain by sandstone or shale. Total hardness varied between 240 and 352 mg/l. In potable water Ca⁺⁺ and Mg⁺⁺ range between 75 and 200 mg/l and 50 and 100 mg/l respectively. In the present study, the water can be classified as hard category which is below the prescribed limit of 200-600 mg/l. Peak level of BOD values were observed during the study period varied from 28.5 to 37.65 mg/l. As per the recommendations of BIS, BOD limits for bathing and drinking purposes are 2 mg/l and 3 mg/l respectively. The COD values fluctuated between 51.6 and 60.50 mg/l, which are likely due to the addition of sewage bringing inorganic matter.

Considering phosphate, the most vital nutrient productivity of natural water resources. The phosphate level in the present study fluctuated from 0.22 to 0.95 mg/l. Phosphate level increased during summer season with 0.80 mg/l and decreased in winter season to 0.28 mg/l. The peak phosphate Madhepur Chour water body environs could possibly result from agricultural runoff reaching surface waters by rain drainage or irrigation return reaching the water body.

Sulphate concentration in the Chour water deviated from a minimum of 46.5 mg/l to a maximum of 68.78 mg average of 54.79 mg/l respectively. Higher sulphate level was observed during summer season (65.64 mg/l). Sulphate in Chour water is primarily related to the types of minerals found in the watershed and acid rain. Industries and utilities that burn coal release sulphur compound into the atmosphere that are carried into the water body by rainfall. Nitrate level fluctuated between 12.88 and 49.38 mg/l. Nitrate concentration exceeded the permissible limit prescribed by WHO13 and Central pollution control Board standards.

Table:1
Permissible limit of physico-chemical characteristics of water

Parameter	Maximum permissible limit, CPCB (1995)	WHO (2004)
pH	6.5-8.5	7.0-8.5
Alkalinity (mg/l)	30	120
TDS (mg/l)	500	500
TSS (mg/l)	100	-
BOD (mg/l)	30	6.0
COD (mg/l)	250	-
Calcium (mg/l)	75	-
NO ₃ (mg/l)	45	10
Chloride (mg/l)	200	-
Sulphate (mg/l)	200	-
EC (µmhos/cm)	1500	-
Total hardness (mg/l)	-	500

The high NO₃ concentration could be due to leaching and surface runoff of nitro-phosphate fertilizer from nearby farmlands into the Chour as well as sewage from the residential areas and solid waste material dumped into the water body. This give rise to cultural eutrophication and this could have serious ecological implications such as algal blooms, hypoxia and even fish kill in the Chour. Eutrophication could also lead to unpleasant taste and odour of the water when the algae die and decompose thus deteriorating the quality of water. Nitrogen does not occur naturally in soil minerals but is a major component of all organic matter. Decomposing organic matter releases ammonia which is converted to NO₃ if oxygen is present. This conversion occurs more rapidly at higher water temperatures. All inorganic forms of nitrogen (NO₃⁻, NO₂⁻ and NH₄⁺) can be used by aquatic plants and algae. If these inorganic forms of nitrogen exceed 0.3 mg/l (as N) in spring, it means there is sufficient nitrogen to support summer algal blooms. Excessive amounts of nitrate can also be dangerous for drinking water. Dairy cows should not drink water with NO₃ concentrations in excess of 100 mg/l measured as nitrate-nitrogen.

E-coli form bacterial can cause waterborne diseases. These coliforms at high levels may occur in the waterbody that receive animal wastes or human wastes. These bacteria are generally only a concern if the water will be used for animal drinking water or for swimming. It is recommended that water bodies used for swimming contain less than 200 fecal coliform bacteria per 100 ml of water. Chour waters used for livestock watering should contain less than 10 fecal coliform bacteria per 100 ml for adult animals and zero fecal coliform bacteria



for calves and other young livestock. In the current study, E-coli bacteria fluctuated between 202 and 325 coliforms /100 ml. The peak values were observed in monsoon season, which might be due to the flushing of faecal contaminated water from the surrounding drains and bank sides.

Fisheries in Sewage fed Chour: The sewage fed Chour is usually large and can be as big as 20 ha in size. Although this sewagefed Chour is generally shallow and vary from 5 to 7ft in depth. The photosynthetic activity in the Chour is the basis for biological purification of the sewage. Cyprinus carpio and Indian major carps stocking takes place once in a year depending on the intensity of operation. Although both Indian and exotic carps are grown, fish farmers have specific preference for the Indian carps, namely catla (*Catla catla*), rohu (*Labeo rohita*) and mrigal (*Cirrhinus mrigala*) with bulk of the stocking consisting of mrigal. Exotic fish like silver carp (*Hypophthalmichthys molitrix*), and common carp (*Cyprinus carpio*) are stocked as a small percentage.

Conclusion:

From the present findings, it is found that the water quality of Madhepur Chour is not suitable for drinking, washing and bathing purposes. Environmental condition of the Chour was not good due to the continuous dumping of waste materials as well as flowing of sewage from the residential settlements. From the observed values of dissolved oxygen, biochemical oxygen demand and chemical oxygen demand, it may safely be concluded that the bacteriological load in the water body is high and the water body has reached the eutrophic stage yet it is recommended that dumping of all kind of waste materials including sewage waste into the Chour should be stopped immediately to allow the self purification process of a aquatic system to regain its original beauty. It will be better if the Chour is given some purification treatment and renovation including providing fencing around the periphery of the waterbody. The government organizations are to plan for time to time monitoring of the water quality along with a check on the influents, standards with a view to reduce the external contribution into the pollution level of Madhepur Chour. Everything humans do, even mere existence, affects the quality of the water. There is an urgent need to establish a proper disposal method for the raw sewage in Madhepur Chour as this is seriously threatening public health. There is also need for the Panchayat authorities to consider applying for construction of wetlands to enhance the quality of their sewage effluents.

Our present study pertaining to water quality rating clearly shows that the status of the water body is eutrophic and it is unsuitable for human uses. But the physico-chemical properties except total hardness of the study area are within the desirable limit for fish culture. The water quality is deteriorating from time to time due to the inflow of sewage water, anthropogenic activities, industrial effluent, lack of proper sanitation, and urban runoff. Hence highest priority



should be given to water quality monitoring to obtain necessary information to design specific pollution prevention programs and to determine the suitability of this largest sewage fed wetland for multiple uses.

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MANAGEMENT OF WORKING CAPITAL - A CASE STUDY ON TEHRI HYDRO DEVELOPMENT CORPORATION (T.H.D.C) OF INDIA LTD

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Abstract

Working Capital may be regarded as life blood of a business. This paper studies the effectiveness of management of working capital in T.H.D.C India ltd. The effective provision of management of working capital can do much to ensure the success of a firm, while its inefficient management can lead not only to loss of profits but also lead to the ultimate downfall of a concern. It is the capital available to purchase inventory, pay employees, keep the lights on and finance other short term expenditures .Working Capital Management involves the relationship between firm's short term assets and its short term liabilities. The goal of management of working capital is to ensure that a firm is able to continue its operations and that it has sufficient ability to satisfy both maturing short term debt and upcoming operational expenses.

In this study the main components of working capital including management of cash, inventory, and receivables of THDC India Ltd. has been analyzed from the accounts for the time period of five years from 2015 to 2019. Ratio analysis is the tool used in the analysis of the study.

Keywords: Working Capital Management, Current Assets, Liabilities, Cash Management, Inventory.

1-INTRODUCTION

Working Capital has to play an important role in day to day management of a firm. It implies the funds needed to meet day to day expenses of short term nature. It is the capital available to purchase inventory, pay employees, keep the lights on, and finance other short term expenditures. This makes managing working capital a critical business skill. One can't think of doing a business without working capital.

Management of Working Capital involves the relationship between a firm's short-term assets and its short-term liabilities. The goal of working capital management is to ensure that a firm is able to continue its operations and that it has sufficient ability to satisfy both maturing short-term debt and upcoming operational expenses. The management of working capital involves managing inventories, accounts receivable and accounts payable and cash.



2-CONCEPT OF WORKING CAPITAL

Working Capital refers to that part of the firm's capital, which is required for financing short-term or current assets such as cash, marketable securities, debtors and inventories. From the point of view of working capital, it can be classified into two different ways:

- a. **Gross Working Capital:** Gross Working Capital refers to the amount of funds invested in current assets, which are employed in the business. It flows from cash to materials, production, finished goods, debtors and back to cash.
- b. **Net Working Capital:** The Net Working Capital is the difference between current assets and current liabilities. This concept helps the firm to determine how much amount is left for operational requirements. It may be positive or negative. This is the most acceptable implication of the term working capital.

2.1-IMPORTANCE OF WORKING CAPITAL

In order to ensure the smooth running of an enterprise, an adequate amount of working capital is very essential. Efficiency in this area can help in utilizing fixed assets gainfully, to assure the firm's long-term success and to achieve the overall purpose of maximization of shareholders fund. Shortage of cash or its inefficient management may result in loss of liquidity and loss of reputation due to non-payment of obligation on due dates.

Insufficient inventories may be the main cause of production held up and it may compel the enterprise to purchase raw material at unfavorable rates.

Thus, there is a need for working capital to deal with the problem arising out of lack of immediate realization of cash against the goods sold. In technical terms, this is referred to as the 'operating cycle' or 'cash cycle'. Adequate working capital provides a cushion for bad days, as in presence of sufficient working capital; a concern can pass its period of depression without much difficulty.

2.2-TECHNIQUES OF WORKING CAPITAL

"A study of the causes of changes take place in the balance from time to time is necessary".

The following are the techniques of working capital analysis:-

- I. **Arithmetic Technique:-** This is a very simple technique and presents a picture of change in current assets and current liabilities over a period of two years and enables its effects on the position of working capital of the enterprise. This is a basic approach to working capital analysis through which changes in balances can be measured in quantitative terms.
- II. **Accounting Techniques:-** Even though there are various accounting techniques, yet the most important are as follows:-
 - a) **Ratio Analysis:-** This is a technique in which various ratios of working capital are used by the management as a means of examine the efficiency with which the working capital is being utilized in the business.
 - b) **Funds Flow Statement:-** This is an effective management tool to study how funds have been procured for the business and how they have been employed. This technique helps to analyze changes in working capital components between two dates.



III. **Statistical Techniques:-** Use of statistical techniques has become a usual phenomenon in any type of analysis. Some of the statistical techniques which are often used in the analysis of working capital management of a business are:-

- a) **Measures of Central Tendency:-** Measure of central tendency gives the central value of the variable which may be taken as representative of values in the mass of data.
- b) **Measures of Dispersion:-** It gives an idea of the extent to which the data are scattered. There are four common measures of dispersion- the range, the quartile deviation, the average deviation, and the standard deviation.
- c) **Chi-Square Test:-** Chi-Square test is used in testing of hypothesis referring to the difference between a set of observed frequencies of a sample and a set of expected frequencies.
- d) **Analysis of Time-Series:-** Time series analysis is the quantitative method used to determine patterns in data collected over time.
- e) **Analysis of Variance:-** It has been developed specially to test the hypothesis whether means of several samples have significant difference or not.

3-PROFILE OF T.H.D.C

T.H.D.C. is a joint venture corporation of the Govt. of India and Govt. of U.P. which was incorporated as a limited company under the Companies Act,1956 (presently the Companies Amendment Act,2013) in July 1988, to develop, operate and maintain the Tehri Hydro Power Complex and other Hydro projects. The work was handed over to T.H.D.C. in June 1989.

The equity portion of the project is being shared by Govt. of India and Govt. of U.P. in the ratio of 75:25, the Corporation has an authorized share capital of Rs. 4000 crore.

The Govt. approved the implementation of Tehri Dam and HPP Stage1 (1000 M.W.) in March 1994 along with the essential works of pumped storage plant and committed works of Tehri Power Complex viz., Koteshwar Project and the Pumped Storage Plant were envisaged to be taken up at a later stage. The Corporation has extended into a Multi-Project Organization, with project spread over various states as well as neighbouring country, Bhutan. T.H.D.C. India Ltd presently has a portfolio of 14 projects totaling to an installing capacity of 5719 M.W. under various stages of implementation.

In the view of storage of funds, for implementation of the project in the state sector, it was decided in November 1986 to implement the Tehri Project as a joint venture of the Govt. of India and Govt. of U.P. through financial assistance from USSR, in November, 1986. An agreement on economic and technical co-operation between the Govt. of India and Govt. of U.P. was signed, which internally included execution of 2400 M.W. Tehri Hydro Power Complex comprising 1000 M.W. Tehri Dam & Hydro Power Plant, 400 M.W. Koteshwar Dam & Hydro Power Plant and 1000 M.W. Tehri Pumped Storage Plant. This agreement envisaged financing in the form of credit amounting to 1000 million Rubles from USSR.



4-REVIEW OF LITERATURE

There have been numerous studies conducted on the analysis of working capital management in India and outside India. For this study, an attempt is being made to review and present some of research studies that have influenced the preparation of this paper positively by contributing a deep knowledge to the topic. These studies can be presented in the following manner as per the requirement of the study.

Muhammad and Syed (2011) investigated the impact of working capital management on firm's performance for non-financial institutions listed in Karachi Stock Exchange index. A panel data of 21 firms listed in KSE-30 index for a period of years 2001 to 2010 was analyzed. Results were obtained using canonical correlation analysis for identifying the relationship between working capital management and firm's performance.

Nireesh, J.A. (2012) investigated the relationship between working capital management and financial performance of listed manufacturing firms in Sri Lanka. Cash conversion cycle, current assets and current liabilities to total assets were used as the measures of working capital management. Correlation and Regression analysis were used for the analysis. The study also concludes that manufacturing firms in Sri Lanka follow conservative working capital management policy.

Wilson et al.(2012) in their research expanded the horizon of knowledge in this area by shedding more light on working capital management measured by the cash conversion cycle and how the individual components of the cash conversion cycle influence the profitability of world leading brewery firms. The outcome of the analysis clearly pinpoint that working capital management as represented by the cash conversion cycle, sales growth and lesser debtors, collection period impacts on beer brewery firms profitability.

Pushpakumar and Yadhav (2014) investigated a study on working capital management in public enterprises in which it was revealed that there must be an adequate level of working capital to give rise to a given capacity and return on investments in fixed assets must be maximized. Shortage and excess of working capital both are undesirable and results into decline of profits.

Hingurala et al. (2017) this study investigated the effect of working capital management using a sample of 44 listed companies on Colombo Stock Exchange (CSE) over the period 2011-2015. The efficiency of management of working capital is measured using the Cash Conversion Cycle (CCC) and its components using Tobin Q ratio. Further, suggested that CCC and Tobin Q are inversely related to each other; managers can create value for their shareholders by managing investment in working capital of their firms in an efficient manner.

5-OBJECTIVES OF THE STUDY

The specific objectives of the study are as follows:-

- Determining and evaluating the effectiveness of the method working capital management.
- To analyze the financial position of various activity areas of the company.
- To find out the adequacy of working capital for commercial benefits.



6-RESEARCH METHODOLOGY

Research refers to a search for knowledge; it is a scientific investigation. "Research is a systematic effort to gain new knowledge."

Research methodology used in the present study is as follows:-

Research Design- In the present study, descriptive and analytical research design is adopted, as the purpose of study is to describe and analyze the working capital policies of T.H.D.C. India Ltd.

Data type- Present study is based on secondary data.

Data source- This study is based on secondary information collected through five years' annual reports of the company. Data is also collected from books, magazines, journals and some related websites like www.thdc.co.in. The data collection method was aimed at the study of working capital management of the company. Time to time visit to the company regarding discussion about the data has been done.

PERIOD OF THE STUDY

In the present study, the data collected from the Annual Reports of the company for the period commencing from financial year 2014-15 to 2018-19 has been dealt with.

LIMITATIONS OF THE STUDY

- The report is based upon secondary data; hence the reliability of the report depends upon the authenticity of the secondary data.
- The report is based on the balance sheet of the company, which fails to reflect the average or typical situation as it is prepared at one moment of time. It ignores short-term fluctuations in assets that may occur within the period covered by two dates in the balance sheet.
- The duration of survey was limited which act as a time constraint to the study.

7-DATA ANALYSIS AND INTERPRETATION

I. Management of Cash- Management of cash is an important aspect of complete working capital management because it is the most liquid current asset and without the management of cash all the activities of the business will be irrelevant. In modern world, business is segmented into different units and is diversified in different geographical areas. It is the duty of finance manager to provide adequate cash to each unit of the business enterprise. Sufficient amount of cash is necessary for the safety of the business. All the amounts here shown in tables are in lakhs.

We can analyze management of cash with the help of following ratios:-

- **Current ratio-** It is the ratio which measures the ability of the company's current assets to pay out the current liabilities which are to be paid within a short period of time i.e, one year.

Table 1: Current ratio = Current Assets / Current liabilities

Interpretation- The current ratio indicates the availability of funds for the payments of

Year	Current Assets	Current liabilities	current Ratio	Quick assets	Quick ratio
2015	2,57,434	1,40,940	1.826	2,50,580	1.77
2016	2,33,184	1,08,319	2.152	2,26,080	2.08
2017	2,27,149	1,21,676	1.866	2,20,858	1.81
2018	1,59,640	2,11,582	0.754	1,53,521	0.73
2019	1,97,328	2,25,674	0.874	1,91,297	0.84

current liabilities in the form of current assets. A higher ratio indicates that there are sufficient current assets available with the organization, which can be converted into cash without any reduction in the value. An ideal current ratio is 2:1. Here, current ratio is fluctuating in the period of 5 years. Average current ratio is 1.49:1 which is close to the ideal ratio but during last two years company's current asset value is comparatively less, which needs to rise up to come up in satisfactory position.

- **Quick ratio-** This ratio establish a relationship between quick assets and current liabilities. The major objective to compute this ratio is to measure the ability of the firm to meet its short-term obligations as and when due without relying upon the realization of stock.

Quick ratio = Quick Assets / Current liabilities

Quick Assets = Current Assets – (Inventories + Prepaid expenses)

Interpretation- The Quick ratio indicates the amount of quick assets available for each rupee of current liability. We know that the ideal quick ratio of any company is 1:1. Here, quick ratio is again fluctuating. Average quick ratio is about 1.45:1, which is above ideal level but we can observe that it is declining comparatively in later years. In 2018 and 2019, quick ratio is close to satisfactory. It implies the company is in need to maintain more quick assets in order to reach an ideal level, so that it doesn't need to rely upon inventories.

Cash Ratio- Cash ratio = (Cash + Cash equivalents)/ Current liabilities

Table 2: Cash Ratio

Interpretation- It is revealed from the analysis of the above table that cash ratio had a

Year	Cash+cash equivalents	Current liabilities	Ratio
2015	4,135	1,40,940	0.0293
2016	7,595	1,08,319	0.0701
2017	31,744	1,21,676	0.2608
2018	6,139	2,11,582	0.0290
2019	5,253	2,25,674	0.0232

fluctuating trend throughout the period under study from the year 2015 to 2019. In starting years, it is low but slightly high in 2017. Again reducing to lower ratio which

indicates that cash ratio of the company is overall low. It implies that there is no cash lying idle and profitability is satisfactory from this point of view.

Cash as a % of Current Assets and Working Capital-

Cash as a % of Current Assets and Working Capital= (Working Capital/ Current Assets) x100

Working Capital= Current Assets – Current Liabilities

Table 3: Working capital

Interpretation- The percentage of cash to current assets figured from 45.25 in 2015 to

Year	Working Capital	Current Assets	Current liabilities	Ratio
2015	1,16,494	2,57,434	1,40,940	45.25
2016	1,24,865	2,33,184	1,08,319	53.54
2017	1,05,473	2,27,149	1,21,676	46.43
2018	(51,942)	1,59,640	2,11,582	(32.53)
2019	(28,346)	1,97,328	2,25,674	(14.36)

46.43 in the year 2017, indicating a fluctuating trend but in the year 2018 and 2019, working capital is negative because current liabilities are more than current assets. It implies that in these years, company’s current assets are less due to which it is not possible for the company to meet working capital requirements through current assets. However, mean value over the period of study is 29.026 which is quiet satisfactory but it needs to increase its current assets to get a rise in ratio in later years.

II. Management of Inventory- Inventory management is an important factor of working capital management as investment in stock should be controlled properly. To maintain a large size of inventory, a considerable amount of funds is required, it is therefore, absolutely imperative to manage inventories efficiently and effectively in order to avoid unnecessary investment. A firm neglecting the management of inventories will be jeopardizing its long run profitability and may fail ultimately.

Table4: Management of inventory

Year	Total Assets	Current Assets	Inventory	% of Inventory to Total Assets	% of Inventory to Current Assets
2015	13,07,677	2,57,434	5,094	0.3895	1.978
2016	13,54,914	2,33,184	4,997	0.3688	2.1429
2017	14,80,795	2,27,149	3,264	0.2204	1.436
2018	14,39,717	1,59,640	3,000	0.2083	1.879
2019	15,57,783	1,97,328	3,060	0.1964	1.5507

Interpretation-The above table reveals that the inventory of the company as % to its total assets has been showing fluctuating trend during the period under study. It shows that there is not heavy amount blocked in this component in current assets.

- **Inventory Turnover Ratio**= Cost of Goods Sold / Average stock

Table 5: Inventory turnover

Year	Cost of Goods Sold	Average Stock	Times
2015	1,52,996	5,094	30.034
2016	1,23,289	4,997	24.672
2017	1,27,046	3,264	38.923
2018	1,31,230	3,000	43.74
2019	1,41,368	3,060	46.198

Interpretation-It was observed that the inventory turnover ratio in the year 2019 indicates higher sales achieved with the adequate investment in inventory as compared to other years. A growing trend can be seen during the period under study. As according to the rule, higher inventory turnover is desirable but it may not necessarily an indication of profitable position.

III-Analysis of Working Capital- In the analysis of working capital, there is a crucial role of direction of changes over a period of time. Working Capital Management is one of the important aspects of financial management. It is therefore very essential for the analyst to make a study about the trend and direction of working capital over a period of time. Such analysis enables us to study upward and downward trend in current assets and current liabilities and its effect on the working capital position.

- **Working Capital Turnover Ratio-** Working Capital Turnover Ratio= sales / average working capital
Average working capital= (current year working capital+ previous year working capital)/2

Table 6: working capital turnover ratio

Year	Average Working Capital	Sales	Ratio
2015	78,582	1,52,996	1.946
2016	1,20,680	1,23,289	1.0216
2017	1,15,169	1,27,046	1.103
2018	53,531	1,31,230	2.451
2019	(40,144)	1,41,368	(3.52)

Interpretation- It has been observed that the turnover of working capital ratio in the company under study has been low during the period of study which indicates that more

revenue is not generated with its working capital. It is very important for the company to look upon its working capital.

Table 7: Working Capital ratio

Interpretation-The above table states that the working capital to sales ratio in THDC is

Year	Net Sales	Working Capital	Current Assets	Total Assets	% of W.C. to net sales	% of W.C. to current assets	% of W.C. to total assets
2015	2,40,793	1,16,494	2,57,434	13,07,677	48.37	45.25	8.91
2016	2,47,965	1,24,865	2,33,184	13,54,914	50.35	53.54	9.22
2017	2,23,597	1,05,473	2,27,149	14,80,795	47.17	46.43	7.12
2018	2,22,873	(51,942)	1,59,640	14,39,717	(23.30)	(32.53)	(3.60)
2019	2,85,029	(28,346)	1,97,328	15,57,783	(9.94)	(14.36)	(1.82)

having a fluctuating trend again. It must be less than one-third so that the revenue may be utilized in proportion but it not like that. During 2018 and 2019 a negative working capital is shown.

As per accounting conventions, working capital at the level of 50 percent of current assets of a business enterprise is considered to be standard norm. In the above table it is about satisfactory for the period 2015 to 2017. It shows the financial soundness of the concern regarding the use of its working capital. During 2018 and 2019 it is again declining.

Further, the table shows that the percentage of working capital to total assets is decreasing but slowly. Accounting analysts also calculate the percentage of working capital to total assets of a concern and are of the view that the norm in this regard is 20 percent but in the table above, it is low which indicates a restrictive policy to be enforced with regard to working capital.

SUGGESTIONS

- Management should make proper use of inventory control techniques, like fixation of minimum, maximum and ordering levels for all the times for less blockage of money.
- The investment of surplus funds made by the corporate office and the unit is not generally involved while taking decisions with regard to structure of investment of surplus funds. The corporate office should not involve the units so as to better ascertain the future requirements of funds and accordingly the investments are made in different securities.
- The amount of working capital need to be maintained and the current assets must be more than its current liabilities so that they need not operate on an almost strictly cash basis with less stock and receivables.

CONCLUSION

There is a great need for the effective management of working capital in any company. There is no precise way to determine the exact amount of gross or net working capital for any business concern. The data and problems of company should be analyzed to determine the working capital as there is no specific rule as to how current assets should



be financed. It is not predictable in practice to finance current assets by short term source only, keeping in view the constraints of the company, a judicious mix of short and long term finance should be invested in current assets. Since current assets involve cost of funds, they should be put to productive use. To ensure the utilization of full capacity, the working capital should be adequate. Ultimately the purpose of working capital management is to make certain that the company is allowed to resume its activities and that it should be capable to reassure both debts of short term and forthcoming expenses for its day to day activities.

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A STATE-LEVEL SITUATIONAL ANALYSIS OF AVAILABILITY AND DISTRIBUTION OF PUBLIC HEALTH SERVICES IN RURAL INDIA

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Abstract

India as a nation is committed to the attainment of 'Health for All' by 2020 AD through the universal provision of comprehensive primary health care services (Planning Commission, 2002). In order to materialize this goal of rendering health services to all, availability of adequate number of health centres with required facilities and health personnel with suitable skills are fundamental. Further, their appropriate deployment at different levels of health care set-up is also crucial for the attainment of this 'Health for All' vision. Thereby this study sees through the level of availability/non-availability and inequality of public health infrastructure and health personnel in rural areas of all the states of India. This study is entirely based on secondary data sourced from Rural Health Statistics, National Health Profile and other reports of Ministry of Health and Family Welfare among others. This is a descriptive study and the researchers have used statistical tools like average and percentage to analyse the availability and distribution of rural health services in all the states of the country. The study finds that there is large amount of non availability and uneven distribution of rural health centres and health personnel in rural areas of the Indian states and this problem will be a central challenge in meeting our health goals. Therefore the researchers call for sustainable and evidence based health infrastructure and health personnel plans to address the imbalance in rural health services.

Key Words: Health for All; Health Infrastructure; Health Personnel; Rural Health

Introduction:

"India lives in her seven hundred thousand villages", is a famous quote of Mahatma Gandhi. Even after seventy years of independence, true to his words, almost seventy percent of India's population live in rural areas of the country. This human resource forms a vital component of the country's growth and development. Thereby the health of rural population has a crucial role to pave way for the inclusive and sustainable development of the country. This necessitates the need for the existence of strong and efficient public healthcare system in rural India. But lack of quality infrastructure, dearth of qualified medical personnel, and non-access to basic medicines and medical facilities characterize the rural health system in our country (Singh and Badaya 2014). Still many people in rural areas have to travel long distance to get health services due to lack of availability and accessibility of quality health services (Iyengar and Dholakia 2012). People in rural areas suffer from many health issues and rural health sector in India confronts many issues more than any other social sector. Though a lot of policies and programs are being run by the Government for rural health, the success and effectiveness of these programs is questionable due to gaps in the implementation.



Many studies (Singh and Badaya 2014) (Iyengar and Dholakia 2012) (Saha UC and Saha KB 2010) have highlighted these problems that prevail in rural health sector in India. In this context, this paper attempts to examine the availability/non-availability and inequality in distribution of rural health services across the states of India in aim of fulfilling any gap in pointing out the issues in rural health and providing solutions for the same.

Need for the Study:

Foundation of our rural health services was laid by Bhore committee about 60 years ago when acute infections dominated the health scenario. In view of the changing health scenario, it is time to review the structure of rural health services and shape the Government policies to cater to the needs of rural population (Ananthkrishnan N, 2007). The challenge for any healthcare system is to ensure the equitable distribution of health Services – both geographically and in the different areas of health care (Martinez and Martineau, 2002). In India, for example, urban areas command 73 per cent of the public hospital beds, even when 69 per cent of India's population resides in rural areas. In 2016, only 11.14 per cent of all allopathic doctors registered with the Central or State Medical Councils worked in Government service and barely 3.3 per cent of all allopathic doctors worked in public health facilities in rural areas (National Health Profile 2017). Considering the picture of grim facts there is a dire need of new practices and procedures to ensure that quality and timely health-care reaches the deprived corners of the Indian villages. This necessitates the need for the study of availability and distribution of health services in rural areas of the Indian states.

Objectives:

The objectives of the study are:

- To examine the availability and shortfall i.e., non-availability of rural health services in terms of health infrastructure and health personnel in Indian states
- To make an inter-state comparison of level of non-availability of rural health services among the states of India
- To suggest suitable solutions to overcome the issues in rural health infrastructure in the country

Methodology:

In this paper, the researchers have attempted to study the present scenario of rural health services by analysing the availability and shortfall of rural health infrastructure and health personnel in all the states of the country. This study is entirely based on secondary data sourced from the Government publications like Rural Health Statistics, National Health Profile and other reports of Ministry of Health and Family Welfare among others. The researchers have used statistical tools like average and percentage to analyse the availability and inequality in distribution of rural health services in all the states of the country.

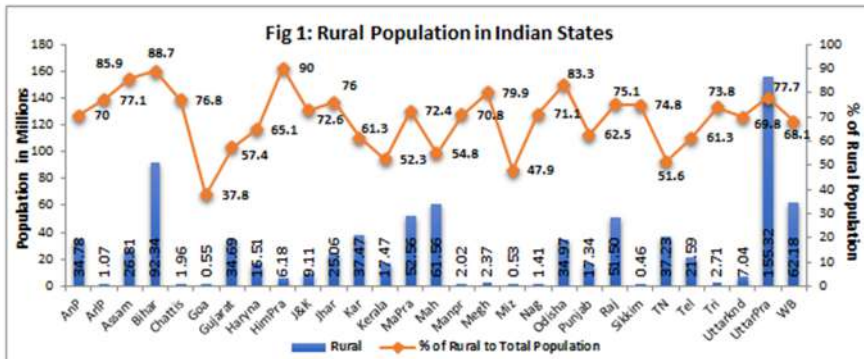
Rural Population in Indian States:

In order to provide a complete picture of availability of health services and their distribution among the states this study focuses on all the 29 states of the country (Census 2011). The rural population profile of the states is given in the Table 1.

Table 1: State-Wise Rural Population in India

States	Rural Population	% of Rural to Total Population	States	Rural Population	% of Rural to Total Population
Andhra Pradesh	34776389	70.4	Manipur	2021640	70.8
Arunachal Pradesh	1066358	77.1	Meghalaya	2371439	79.9
Assam	26807034	85.9	Mizoram	525435	47.9
Bihar	92341436	88.7	Nagaland	1407536	71.1
Chhattisgarh	19607961	76.8	Odisha	34970562	83.3
Goa	551731	37.8	Punjab	17344192	62.5
Gujarat	34694609	57.4	Rajasthan	51500352	75.1
Haryana	16509359	65.1	Sikkim	456999	74.8
Himachal Pradesh	6176050	90	Tamil Nadu	37229590	51.6
Jammu Kashmir	9108060	72.6	Telangana	21585313	61.3
Jharkhand	25055073	76	Tripura	2712464	73.8
Karnataka	37469335	61.3	Uttarakhand	7036954	69.8
Kerala	17471135	52.3	Uttar Pradesh	155317278	77.7
Madhya Pradesh	52557404	72.4	West Bengal	62183113	68.1
Maharashtra	61556074	54.8	India	833748852	68.9

Source: Population Census of India 2011, Office of the Registrar General & Census Commissioner, India.



Source: Based on Table 1

The Table 1 and Figure 1, shows the state-wise rural population in India and also how much percentage of the state’s population live in rural areas of the respective states. From the Table 1 and Figure 1 it can be clearly seen that, except states like Goa (37.8 per cent), Mizoram (47.9 per cent), Tamil Nadu (51.6 per cent), Kerala (52.3 per cent), Maharashtra (54.8 per cent) and Gujarat (57.4 per cent) in all other states more than 60 per cent of the respective state’s population live in rural areas. Especially in states like Himachal Pradesh (90 per cent), Bihar (88.7 per cent), Assam (85.9 per cent) and Odisha (83.3 per cent) more than 80 per cent of the state’s population live in rural areas. Overall, out of total population in the country 69 per cent i.e., more than 800 million people live in rural areas of the country. Among the states Uttar Pradesh has the largest rural population and in this state alone more than 150 million people live in rural areas, which is more than the population of many countries of the world.

Availability and Non-Availability of Rural Health Infrastructure in Indian States:

To protect and promote general health, the public health infrastructure must be strong. Health Infrastructure is an important indicator to understand the healthcare delivery provisions and mechanisms in a country. According to the government’s Indian Public Health Standard (IPHS) norms, we’re supposed to have one Sub-Centre for every 5,000 people (3,000 in hilly areas), one Primary Health Centre for every 30,000 people (20,000 in hilly areas) and one Community Health Centre for every 120,000 people (80,000 in hilly areas). In this connection, Table 2 shows the availability and shortages i.e., non-availability of health infrastructure in the Indian states.

Table 2: State-Wise Availability and Non-Availability of Public Health Infrastructure

State	Sub Centres			PHC			CHC		
	R	P	S	R	P	S	R	P	S
Andhra Pradesh	7261	7458	*	1197	1147	50 (4)	299	193	106 (35)
Arunachal Pradesh	318	312	6 (2)	48	143	*	12	63	*



Assam	5850	4644	1206 (21)	954	946	*	238	172	66 (28)
Bihar	18637	9949	8688 (47)	3099	1899	1200 (39)	774	150	624 (81)
Chhattisgarh	4885	5200	*	774	793	*	193	169	24 (12)
Goa	122	214	*	19	25	*	4	4	0
Gujarat	8008	9153	*	1290	1474	*	322	363	*
Haryana	3301	2589	712 (22)	550	368	182 (33)	137	113	24 (18)
Himachal Pradesh	1285	2084	*	212	576	*	53	91	*
Jammu & Kashmir	2009	2967	*	327	637	*	81	84	*
Jharkhand	6060	3848	2212 (37)	966	298	668 (69)	241	171	70 (29)
Karnataka	7951	9443	*	1306	2359	*	326	206	120 (37)
Kerala	3551	5380	*	589	849	*	147	227	*
Madhya Pradesh	12415	11192	1223 (10)	1989	1171	818 (41)	497	309	188 (38)
Maharashtra	13512	10638	2874 (21)	2201	1823	378 (17)	550	361	189 (34)
Manipur	509	429	80 (16)	80	91	*	20	23	*
Meghalaya	759	443	316 (42)	114	108	6 (5)	28	28	0 (0)
Mizoram	172	370	*	25	57	*	6	9	*
Nagaland	455	396	59 (13)	68	126	*	17	21	*
Odisha	8193	6688	1505 (18)	1315	1288	27 (2)	328	377	*
Punjab	3468	2950	518 (15)	578	432	146 (25)	144	151	*
Rajasthan	11459	14405	*	1861	2078	*	465	588	*
Sikkim	113	147	*	18	24	*	4	2	2 (50)
Tamil Nadu	7533	8712	*	1251	1421	*	312	385	*
Telangana	4708	4744	*	768	643	125 (16)	192	91	101 (53)
Tripura	691	1020	*	109	108	1 (1)	27	22	5 (19)
Uttarakhand	1442	1847	*	238	257	*	59	67	*
Uttar Pradesh	31200	20521	10679 (34)	5194	3621	1573 (30)	1298	822	476 (37)
West Bengal	13083	10357	2726 (21)	2153	913	1240 (58)	538	348	190 (35)
All India/ Total	179240	158417	32900 (18)	29337	25743	6430 (22)	7322	5624	2188 (30)

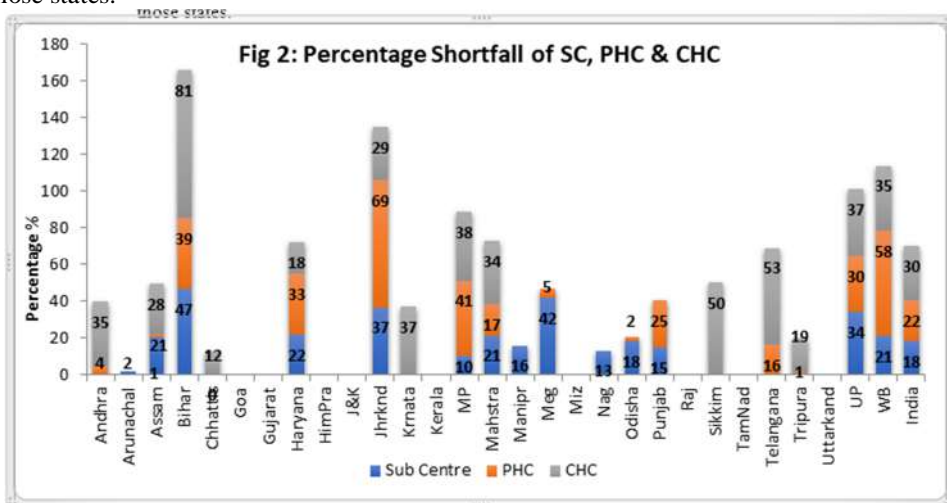
Source: Rural Health Statistics 2018, GoI

Note: ‘*’- Surplus; R-Required, P-In Position, S-Shortfall i.e., (S=R-P)

Figures shown in parentheses are the percentage shortfall of health centres to the required health centres;

All India figures for Shortfall is the total of State-wise Shortfall ignoring surplus in some States

In Table 2, the “Required (R)” column shows the required number of health centres in accordance to the population of the respective states and the “In Position (P)” column shows the number of health centres available in the states. The “Shortfall (S)” column shows the difference between the number of required and in position health centres and also the percentage shortfall of health centres to the required health centres in the states. It also reveals that there is surplus availability of health centres in some states which is expressed by the ‘*’ symbol. Especially in states like Gujarat, Himachal Pradesh, Jammu & Kashmir, Kerala, Mizoram, Rajasthan, Tamil Nadu and Uttarakhand there are surplus number of all three health centres i.e., Sub-Centre, PHC and CHC available in relation to the required numbers in those states. Then in states like Bihar, Haryana, Jharkhand, Madhya Pradesh, Maharashtra, Meghalaya, Uttar Pradesh and West Bengal there is shortfall of all three health centres in relation to the required number of SC, PHC and CHC in those states. Other states show mixed performance of both surplus and shortfall in either of Sub-Centres, PHCs or CHCs. Among all states the highest number of shortage is found in Uttar Pradesh with shortfall of 10,679 Sub-Centres, 1573 PHCs and 476 CHCs followed by Bihar with 8688 Sub-Centres, 1200 PHCs and 624 CHCs shortage. On the other hand, Rajasthan has the most surplus number of health centres with 2946 SCs, 217 PHCs and 123 CHCs in excess followed by Kerala with 1829 SCs, 260 PHCs and 80 CHCs more than the required number in those states.



Source: Based on Table 2

The Figure 2 shows the percentage shortfall of health centres to required health centres in Indian states. This will help to know the level of shortage of SC, PHC and CHC in each state and through this, the inequality in availability of health centres can be identified. The highest shortfall of Sub-Centre is found in Bihar with 47 per cent

followed by Meghalaya with 42 per cent shortfall. Then the shortfall of PHC is highest in Jharkhand with 69 per cent followed by West Bengal with 58 per cent shortage of PHC. The CHC is found to be most deficient in the state of Bihar with whopping 81 per cent shortfall followed by Sikkim with 50 per cent of shortfall of CHCs in relation to the requirement. Overall it can be seen that when people of some states are favoured with the benefits from surplus number of health centres, people belonging to other states suffers from the lack of availability of even the minimum number of required health centres to provide the primary healthcare services. This shows the inequality in the availability of health services among the states of the country.

Availability and Non-Availability of Rural Health Personnel in India:

Another very important facet that constitutes the healthcare system besides infrastructural facilities is the availability of adequate and competent personnel for proper functioning of the health system. Health personnel have been described as the heart of a health system in any country. Human resources for health are defined as “the stock of all individuals engaged in the promotion, protection or improvement of population health” (WHO, 2006). The current availability of health personnel in the country is shown in the Table 3.

Table 3: Availability and Non-Availability of ANMs, Doctors and Specialists at Rural Health Services

State	ANM at Sub Center & PHC			Doctors at PHC			Total Specialists at CHC		
	R	P	S	R	P	S	R	P	S
Andhra Pradesh	8605	13698	*	1147	2045	*	772	384	388 (50.25)
Arunachal Pradesh	455	481	*	143	125	18 (12.58)	252	4	248 (98.41)
Assam	5635	10230	*	1014	1376	*	632	158	530 (83.86)
Bihar	11848	23390	*	1899	1786	113 (5.95)	600	82	518 (86.33)
Chhattisgarh	5971	6799	*	785	359	434 (55.28)	676	57	619 (91.56)
Goa	238	273	*	24	56	*	16	10	6 (37.5)
Gujarat	10474	8340	2287 (21)	1392	1321	153 (10.99)	1452	118	1334 (91.87)
Haryana	2955	4374	*	366	491	*	448	17	435 (97.09)
Himachal Pradesh	2621	1846	814 (31)	538	622	*	356	4	352 (98.87)
Jammu & Kashmir	3604	4582	*	637	694	*	336	256	80 (23.80)
Jharkhand	4145	6632	*	297	340	*	752	92	592 (78.72.)
Karnataka	11740	7156	4646 (39)	2359	2136	223 (9.45)	824	498	326 (39.56)
Kerala	6229	7950	*	849	1169	*	928	40	868 (93.53)
Madhya Pradesh	10363	12353	10 (1)	1171	1112	59 (5.03)	1236	248	988 (79.93)
Maharashtra	12394	14605	*	1814	2929	*	1440	485	959 (66.59)
Manipur	506	923	*	85	194	*	68	3	65



									(96)
Meghalaya	545	1080	*	109	130	*	108	9	103 (95.37)
Mizoram	427	629	*	57	59	*	36	0	36 (100)
Nagaland	522	913	*	126	118	8 (6.34)	84	8	76 (90.47)
Odisha	7968	8108	*	1280	917	371 (28.98)	1480	253	1255 (84.79)
Punjab	3382	4525	*	432	480	*	604	105	499 (82.61)
Rajasthan	16485	18257	*	2079	2396	*	2316	565	1787 (77.15)
Sikkim	171	227	*	24	24	0	8	0	8 (100)
Tamil Nadu	10074	7854	2279 (22)	1362	2780	*	1540	210	1330 (86.36)
Telangana	5486	7679	*	689	1066	*	456	112	252 (55.26)
Tripura	1080	601	527 (48)	93	119	*	84	2	82 (97.61)
Uttarakhand	2104	1760	344 (16)	257	241	16 (6.22)	240	211	211 (88)
Uttar Pradesh	24142	25751	*	3621	1344	2277 (62.88)	3288	192	3096 (94.16)
West Bengal	11283	17583	*	914	1016	*	1396	125	1267 (90.75)
All India/ Total	181881	219326	10907 (6)	25650	27567	3673 (14.31)	22496	4074	18422 (81.89)

Source: Rural Health Statistics 2018, GoI

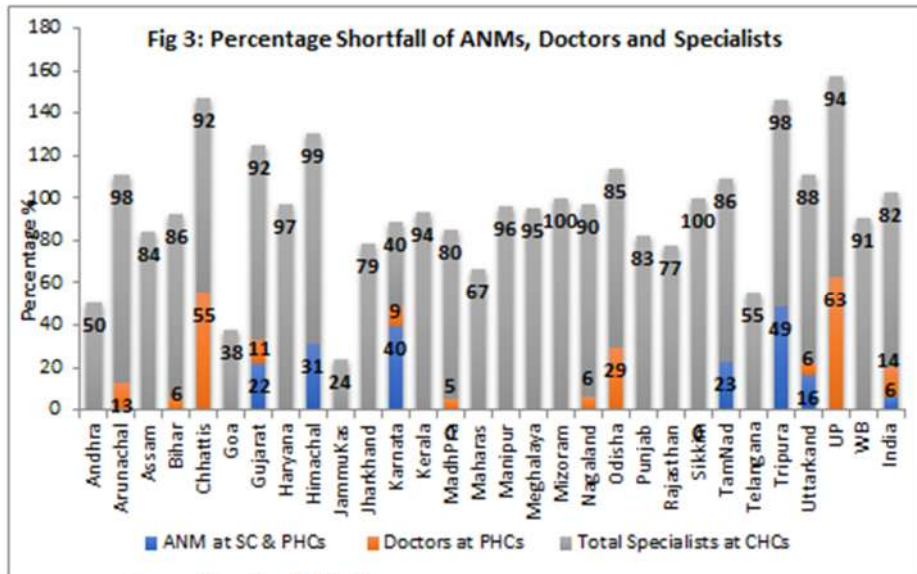
Note: R-Required, P-In Position, S-Shortfall i.e., (S=R-P), ‘*’-Surplus

Total Specialists at CHC includes Surgeons, Obstetrician & Gynaecologists, Physicians and Paediatricians;

Figures shown in parenthesis is the percentage shortfall of health personnel to the required personnel

All India figures for Shortfall is the total of State-wise Shortfall ignoring surplus in some States

The above Table 3 shows the Required, In Position and Shortfall of ANM at Sub-Centres and PHCs, Doctors at PHCs and Specialists at CHCs in the Indian states. Among them, 22 states have surplus of ANMs and 18 states have surplus of Doctors at PHCs but all the states suffer from the shortage of specialists at CHCs. The shortfall of ANMs is found to be highest in Karnataka with 4646 ANMs, followed by Gujarat with 2287 ANMs shortage. It is important to note that these two states consist of surplus number of Sub-Centres and PHCs but they have registered shortfall in manpower. In respect to number of doctors in PHCs and Total Specialists in CHCs, Uttar Pradesh has the highest shortfall of massive 2277 doctors and 3096 specialists. It is important to note that the Uttar Pradesh state has registered the highest shortfall in health centres as well (Table 2), which shows the destitute condition of health services in the state.



Source: Based on Table 3

From the Table 3 and Figure 3, it can be seen that, while some states show surplus of health personnel, other states show an acute shortage of health personnel; especially the massive shortfall of specialists in all the states can be clearly seen. In states like Mizoram and Sikkim there is 100 per cent shortfall in specialists i.e., there are no specialists at all in those state’s CHCs. It is interesting to note that there is surplus number of CHCs at Mizoram but it does not have any specialists to render health services. Overall from Figure 3, it can be clearly seen that this scarcity in staff numbers is massively compounded by the inequitable distribution of human resources both within the health centres set-up (i.e., between SC, PHC and CHC) and also among the states.

Findings and Discussions:

The aim of this study was to assess the level of health infrastructure and health personnel availability and identify the inequalities in distribution of health services availability among states of India. The majority of the selected variables studied above show the sad state of affairs in the rural healthcare services in India. Based on the data from above Tables (Table 2, Table 3), the major findings have been summarized as follows:

- Overall, among all states Kerala and Rajasthan has registered better performance in rural health services by showing surplus of availability in five out of six parameters studied in this paper.



- On the other hand, Uttar Pradesh is found to be the state with most inferior performance in availability of health infrastructure and personnel. Out of six parameters studied it has shown shortfall in five parameters and those shortages were the highest among all Indian states. Therefore addressing the health services issues should become an urgent, social and political priority in the state.

- Further, states like Gujarat, Himachal Pradesh, Tamil Nadu and Uttarakhand have surplus of all three health centres but they show high shortage of health personnel. This leads to less efficiency in delivery of health services at those health centres.

- Insufficient infrastructure and manpower at the SCs and the PHCs make the population to reach out to the specialists at the CHCs, thus increasing the burden of work on the CHCs. But approaching CHCs also ends to be futile because there are no care providers at the CHCs. From the given Table 3 it can be seen that the CHCs in rural India have a shortfall of nearly 82 per cent of specialists, thereby aggravating the problem. Thus the rural community is stuck between inadequate and understaffed SCs and PHCs and the CHCs where health manpower is missing. It is a classic case of ‘poor designing’ of our health manpower planning.

- Manpower planning involves assessment of current and future demand and supply and analysing the gap and formulating short and long term strategies for ensuring availability of sustainable levels of staff. Therefore, the primary aim of manpower planning is to make available the “right kind of personnel, in the right number, with appropriate skills, of the right place, at the right time, for doing the right job” (Mehta 2014). Problems like procedural delays in appointment of faculty, low pay scale structure, lack of supportive system for career development, non-transparent transfer and posting policy and lack of transparency in career progression are the major issues that need policy attention. Moreover, it is a common complaint of people that government health centres suffer from non-availability of medical staff due to absenteeism and lack of regularity in time. Therefore strict actions must be taken against irregular health personnel.

- These findings suggest that mere increase in production capacity is unlikely to resolve the issues related to health personnel availability or distribution in Government rural health centres. It requires a comprehensive review of existing recruitment rules in order to cater to the current and future needs of health personnel. Thereby, development of standard policies regarding recruitment, training, career development plan, transfers and performance appraisal are the need of the day.

Conclusion:

As India seeks to achieve universal health coverage by 2020, the realization of this goal remains challenged by the current lack of availability and inequitable distribution of health infrastructure and appropriately trained and qualified health personnel. Considering the picture of grim facts there is a dire need to address imbalances in the rural sector to ensure that quality and timely healthcare reaches the deprived corners of the Indian villages catering to the needs of the rural population. Therefore the rural health care in India needs to be examined carefully and it immediately calls for effective steps to provide required health services successfully.



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AN OVERVIEW ON VARIOUS FACTORS FOR THE SUCCESS OF EXPATRIATE ASSIGNMENTS

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ABSTRACT

As the world is getting more global so are businesses and thus more and more companies are sending their employees to work in a foreign country. Foreign assignments are often difficult as there are great number of factors that require careful approach and planning. The purpose of this article is to look into these factors and define what the most critical aspects are when conducting a successful expatriate process. This review article compiles several literature reviews in the field of cultural adaptation, personal and situation factors while working in a foreign environment. Identifying these factors is most important for organizations and individuals who are ready to acquire full potential for working abroad.

Key words: Expatriation, success, working, foreign country, cultural adaptation, cultural self-knowledge and group-individual orientation.

INTRODUCTION

Industrially, as business sector confinements over the world keep on dissolving, it has turned out to be more normal for associations to move into new outside business sectors. Keeping in mind the end goal to grow comprehensively, representatives are regularly required to work the world over far from their nations of origin, and they are a potential focused edge for the accomplishment of companies working in a worldwide commercial center. These abroad assignments are generally exceptionally requesting for the representatives included, and lamentably, occurrences of workers neglecting to meet the sending associations objectives are somewhat normal, and can bring about momentous misfortunes for the association (Pires, 2006). Despite testing errands and high disappointment rate associated with worldwide assignments, worldwide companies are as yet hinting at no retreating for sending exiles to work in outside nations in light of incomes from abroad organizations (Bruning and McCaughey, 2005); and representatives are as yet volunteering to tackle universal assignments for the favorable circumstances offered by the abroad experience (Global Relocation Services, 2005).

At the point when organizations go into worldwide business, the systems that were effective in local may not work in remote business environment. Along these lines, it is basic for organizations needing to exploit the universal markets to know about what makes expatriates assignments fruitful. Exile disappointment rates being as high as up to 40% it is undoubtedly monitoring these components is vital and requires a great deal of consideration by any organization willing to tap in remote markets. This proposition



intends to study what makes exile program a win with taking a gander at the social, social and individual components, that when done accurately can improve the probability of expatriates achievement.

In this paper, expatriation is divided into four elements: adjustment, individual traits, social self-information and social elements. This study plans to stretch the significance of pre-takeoff stage, subsequent to the greater part of foundations for the exile disappointment are for the most part preventable by important hierarchical backing as it assumes a major part in making an effective global movement (Kraimer, 2001) and what's more in this stage a large portion of the foundations for disappointment are still preventable.

Expatriates

The term expatriates alludes to 'a representative sent by his or her organization in one nation to oversee operations in an alternate nation' (Noe 2006, p.641), and in this way, organizations can send their own particular workers from their nations of origin or even from third nations to a host nation. There are various open doors and difficulties in advanced worldwide business environment that makes the requirement for expatriates. A decent case from 21st century is the 'China-marvel' where with a specific end goal to defeat the absence of able workforce, organizations in China depend on gifted laborers from different nations (Kaye and Taylor, 1997), and associations every now and again give universal experience to their capable chiefs for profession formative purposes. Other key reasons may incorporate transmitting authoritative society to remote auxiliary, exchanging information, enhancing coordination and practical needs of control, and creating worldwide aptitudes (Bennet, 2000; Tung, 1982).

Subsequent to the expatriates are frequently conveying amazing desires from the organizations, and exile programs likewise enhances both the representative and the association it is therefore critical to have an effective task, rather than one completion in a disappointment. Executing Harrison and Shaffers (2005) portrayal of fruitful exiles, they are effective when they meet after objectives:

- They don't stop their assignments rashly.
- Complete their errands.
- Develop and keep up interpersonal ties with workers in the host nation.

Different studies utilize the expression 'exile alteration' to allude to a procedure through which an expatriates comes to feel great with another environment and adjusts to it (Huang, 2005). Because of the perplexing way of exile assignments, all expatriates are not ready to meet the projects objectives. Concentrates on demonstrate that disappointment rates connected with exile assignments are somewhere around 25 and 40 percent (Forster, 1997; Sanchez, 2000), the normal expense to move an expatriates to be US\$60,000 (Noe, 2006, p.646) and expatriates disappointments for American organizations absolute over US\$2 billion every year in costs (Pires, 2006). Various extra



harms to both associations and people are likewise conceivable; for instance harm to the organization notoriety and debilitation of the returning workers and the host nation nationals also.

Success and disappointment

Elements for expatriate's achievement are various not withstanding; the ideas of accomplishment and disappointment are not generally plainly characterized. Expatriates disappointment or misfortune has been characterized as all people who either stopped or exchange back to the nation of origin before the fruition of their normal remote assignments M. Hemmasi, M. Downes and I. Varner (2010) contend against this estimation by putting circumstances of an untimely return into connection. 'For instance, the case could be that an exile will stay in an area where he/she is not fulfilled, or balanced, or performing great, and that the choice to stay is harming to the firm. On the other hand, it could happen that the expatriates satisfied his/her obligations in front of timetable, in which case, returning home before anticipated that is likely would bring about a cost investment funds for the association. This sort of exile turnover, then, might be seen as a positive result – at the end of the day, a win. On the other hand, an untimely return would be considered a disappointment just if the occasions paving the way to the takeoff were negative, (for example, trouble in conforming to the outside society), or if the arrival brought about a negative result.' (Hemmasi, Downes, Varner, 2010)

The expense of a solitary fizzled expatriates task ranges in the middle of \$250,000 and \$1,000,000 (Vogel, Van Vuuren, and Millard 2008). These numbers incorporate expatriates' starting preparing and moving costs, and loss of administrative efficiency; in any case they do exclude the diminished execution of the outside backup, harmed associations with the host nation government, reduced notoriety, sway on confidence of different representatives, or expense to the organization of substitution on the off chance that they leave the firm (Wittig-Berman and Beutell 2009).

In prior studies on the subject an awesome number of variables have been perceived as adding to the achievement or disappointment of exile assignments. Legitimate pre-takeoff preparing is ordinarily recorded as the most imperative variable and as indicated by Friedman, Dyke, and Murphy (2009) ought to incorporate how to adjust to various societies furthermore as indicated by Haile, Jones, and Emmanuel (2007) familiarity with remote dialects. Notwithstanding preparing the capacity to adjust to various societies is fundamentally imperative trademark for any expatriates and is identified with social separation. Social separation measures the size of contrasts in national societies and any outside task is all the more difficult when social separation between expatriates' home nation and host nation is awesome.

This short audit of the different achievement variables and disappointment rates makes it obvious that organizations must be cautious while selecting the right possibility for the exile task (Andreason 2008). Creating helpful and trustworthy instruments for testing and selecting of exile faculty would incredibly improve the achievement rate of expatriates projects.



ADAPTATION

A key obstruction to the achievement of exile work force includes the adjustment of the person to the new nation. Exiles: 'experience a passionate cycle and commonly hit a low somewhere around six and twelve months subsequent to beginning an task' (DeLollis 2007). Troubles associated with sociocultural adjustment have been recognized as the primary hotspot for some anxiety incited responses experienced by workers on universal assignments in facing the everyday society and standards of the host nation (Pires, 2006)

The powerlessness to perform viably in the new environment regularly brings about lower than anticipated execution, poor administration, low profitability, and inability to meet corporate destinations (Pires 2006; Tung 1987). These concentrates obviously show that meeting the organization goals is reliant upon expatriates' fruitful sociocultural modification.

Sociocultural Adaptation

Oberg characterizes sociocultural adjustment as 'the tension that outcomes from losing all our well-known signs and images of social intercourse' (1960, p. 177). This alteration stage alludes to the subjective prosperity or state of mind of the exile and means the capacity to 'fit in,' and is connected with anxiety and adapting settings. Dark, Mendenhall, and Oddou (1991) recommend that the new setting upsets old schedules and makes sentiment instability in ordinary life. In the meantime, sociocultural change is associated with exiled behavioral fitness in social communication. Prior studies have distinguished a few components that impact sociocultural adjustment, for example,

- Language familiarity
- Length of habitation in the new culture
- Cultural information
- Amount of collaboration
- Identification with host nationals
- Acculturation techniques of the organization

Neglecting to meet these variables amid sociocultural adjustment procedure can deliver stretch and even sorrow in the exile, which might bring about an absence of efficiency in the working environment or even untimely return.

Psychological solidness

Mental solidness alludes to three demeanors:

- Commitment Control
- Challenge (White, Absher, Huggins, 2011).



Duty is the inclination to wind up included in whatever one is doing or experiences (Maddi 1982). Control is the inclination for a person to feel and go about as though he or she has impact over life (Maddi, 1982). Test is the conviction that change is a typical piece of life and offers conceivable outcomes for development (White, Absher, Huggins, 2011).

The three solidness demeanors of responsibility, control and test impact and upgrade the temperament and execution of individual encountering unpleasant circumstance. (Maddi 1999). Specifically, tough dispositions impact how people experience distressing circumstances in life (Maddi 1999). Strong people are cheery, idealistic, and view challenges in a constructive light. Solid people are likewise ready to view exercises as alluring and wonderful, just like a matter of individual decision, and as imperative boost for learning. Therefore, they tend to discover positive significance in life (Maddi 1984). Also, people displaying low strength hint at expanded gloom and also nervousness and pain (White, Absher, Huggins, 2011).

New social environment puts a great deal of strain on any expatriates notwithstanding amid ordinary life and subsequently exiles with tough qualities adapt better to unpleasant circumstances on account of their capacity to put distressing occasions in context. In this way they can take conclusive, as opposed to avoidant, activities to determine issues and decrease stress (Maddi 1999; White, Absher, Huggins, 2011).

Individual qualities

Individual elements esteemed most imperative by numerous prior studies are:

- Perceived Career Path
- Willingness to Relocate
- Degree of International Orientation

The situational variables considered most critical are:

- Selection Criteria
- Training
- Role Clarity
- Level of Support
- Relationship between the Expatriate and the Company
- Performance Management System (Erbacher, D'Netto, España, 2006)

Personal elements

Individual elements are emphatically identified with an individual's qualities, convictions, desires and social foundation. They manipulate the employee's ability to transform into different environment and to prepare his/her response to outside stimulus (Erbacher, D'Netto, España, 2006).



Perceived Career Path: Feldman and Thomas (1992) recommend that there is a nearby association between the exile's task and the general saw vocation way and future profession opportunities. The exile's general execution and commitment to the task might be impacted by thoughts of future profession improvement coming about because of the task (Selmer, 1998).

Eagerness to Relocate: Willingness to move significantly affects exile achievement. Exiles why should excited move into an outside nation seem to have littler number of troubles adjusting to the new area than those hesitant to acknowledge such exchanges (Feldman and Thomas, 1992; Erbacher, D'Netto, España, 2006).

Level of Personal International Orientation: An expatriate's 'cross social awareness' or 'level of internationality', which can fuse variables, for example, ethnic foundation, past expatriates assignments, dialect aptitudes and travel experience, is liable to impact the expatriates capacity to change in accordance with another environment (Feldman and Thomas, 1992; Erbacher, D'Netto, España, 2006).

Situational variables

Situational elements concentrate on the part the home organization plays in influencing exile achievement. These components additionally set up the exile for his or her task in an outside nation. These arrangements intend to decrease the impact of society stun.

Determination Criteria: Research by Mendenhall, Dunbar and Oddou (1987) demonstrates that the lion's share of organizations disregard the significance of making profile for each conceivable exile competitor which would be awesome advantage for choice process and build the achievement of expatriates assignments. Associations more often than not concentrate just on specialized fitness issues, ignoring other critical issues, for example, multifaceted aptitudes (Black, Mendenhall, Oddou, 1991). Distinguishing a 'compelling profile' is additionally a significant piece of choice criteria. Compelling profiling depends on capacities, for example, ability in intercultural correspondence and intercultural affectability that are impractical to learn or are adapted just over an extraordinary timeframe, restricted to abilities like language and communication about external cultures that can be acquired over a normally short time (Graf 2004; Erbacher, D'Netto, España, 2006).

Preparing: Black, Mendenhall and Oddou, (1991) additionally stretch the significance of diverse preparing for multifaceted conformity, culturally diverse ability improvement and employment execution. Suitable and extensive pre-departure training ideas give rise to clear knowledge about their stay in abroad (Erbacher, D'Netto, España, 2006).

Part Clarity: Sagiadellis, D'Netto and España (2004), explored Australian expatriates and inferred that „role clarity“ was connected with exile achievement. Representatives who move into another nation confront an incredible measure of uncertainty in their day-by-day life and decreasing this level of instability aides in the conformity process.



The expatriates' family connection can lower this liability by giving clear rules with respect to employment and hopeful desires, levels of leadership and status suggestions.

Level of Support: Level of bolster means the degree to which the organization, including both the guardian organization and the host organization, give backing to the exile. Maintaining encompasses compensation, personal support, finding education for the kids or getting lodging and general bolster like coaching directions and training (Erbacher, D'Netto, España 2006).

Quality of relationship between the expatriates and the firm: The length of time that an exile has worked in the guardian organization and to what extent the representative has known the administrators in both the home and host nation are crucial in creating and keeping up a solid relationship. Developing firm relationship can improve communication, accountability to achieving authoritative goals, shared trust and performance (Gregersen and Black, 1992; Erbacher, D'Netto, España 2006).

Execution administration framework: Performance assessment and compensating for expatriates is frequently ignored in administration research and practice. Expatriates execution assessment can be risky when the abroad employee's occupation may incorporate such divergent obligations as guaranteeing that specialty units accomplish numeric targets, actualizing aptitudes exchange, supervising staff progression and providing rapport management in a remote domain (Erbacher, D'Netto, España 2006).

SOCIAL FACTORS

As the past point concerned progressively the attitude of expatriates and challenges of the adjustment handle, this part will concentrate on particular social measurements and their impact on exile conduct. While looking into social components this study utilizes Japanese and American societies to show the centrality of appreciating one's own social foundation before managing somebody from an alternate society. These two societies were picked in light of the fact that they work differently and have effectively perceptible qualities. The further separated societies are on the social separation record, the more obvious will be the requirement for social modification (Xu and Shenkar, 2002). The social separation record is a measure for national contrasts in light of Hofstede's grouping of society (Varner and Palmer, 2006).

On the off chance that it is conceivable to disconnect the essential social variables deciding an expatriate's social needs and make the individual see his outlook, organization or any association can, enhance the determination and preparing of exiles and in this manner enhance the achievement rates of expatriates viability (Tung, 1988). In this pre-flight process administrators and officials should be mindful so as not to make overgeneralizations or disregard any points of interest.



While investigating the association between social mindfulness and achievement elements in exile, this study utilities taking after social builds distinguished by Hall (1964), Hofstede (1991), and Trompenaars (1993):

- Group versus person
- Hierarchy versus libertarian
- High connection versus low connection
- Polychronic time introduction versus monochronic time introduction

FAMILY RELATED FACTORS

Prior study directed by Foreign Trade Council (1994) discovered that 80 percent of workers that rejected universal assignments did as such for family reasons. David Week (1993) reported that around 15 percent of The United States exile applicants dismiss any outside assignments on account of their spouses' vocations (Punnett, 1997).

In U.S and Europe family related components are relied upon to be a developing explanation behind turning down a remote task. This wonder begins from a reality that more ladies seek after a vocation and might give a critical pay to the gang. Prior studies have likewise shown that family is especially essential variable in exile achievement. For instance, Black and Stephens (1989) discovered a noteworthy relationship between the alteration of the mate and that of the exile, both of which were decidedly associated with the expatriate's expectations to proceed with his or her outside task as opposed to return too soon (Punnett, 1997).

Family in exile process

Despite the fact that this generally extraordinary significance for exile achievement, relatively few organizations pay consideration on the importance of family related issues when settling on expatriates choices. A review of U.S. firms by International Orientation Resources affirmed this absence of consideration regarding family related issues as just 21% of the organizations that participated in the overview incorporate life partners in pre-race forms (Solomon, 1994; Punnett, 1997). The consideration of life partners entangles the exile choice procedure for both the organization and the expatriates. Counting the life partner in the determination, pre-flight preparing and bolster makes the procedure slower and all the more exorbitant. The studies recommend however that disregarding the family might be all the more exorbitant for the sending association at last than including the expatriate's family into the procedure in any case. A mate who has been in the process with the exile from the earliest starting point is liable to assume positive part in expatriate's conformity and execution (Punnett, 1997). In the event that organizations survey these dangers and conceivable outcomes basically, they can comprehend the significance of incorporating spousal conformity in the exile process.



Spouses

By (1997) life partners seem to fall into three classes. These three gatherings are:

- Female mates, who don't hope to work in outside area.
- Female life partners, who do hope to work in remote area.
- Male life partners, who overwhelmingly hope to work in outside area.

Female life partners, who don't hope to work in outside area are generally considered as the conventional expatriates life partner and the vast majority of the prior exploration led has been outfitted towards this gathering. The essential worry with this gathering is that the wife will encounter significant society stun in the remote environment and will 'close herself far from the world' (Punnett, 1997). Thus it is likely that expatriates chooses to return home rashly as opposed to dangers his wife's enthusiastic, physical and mental prosperity. Consequently, it is fundamentally vital to manage society stun adequately and to ensure that move and effective adjustment is guaranteed.

Female companions, who do hope to work in outside area, confront the issue of society stun and additionally the past gathering, yet they have likewise the worry about their own vocation and profession. This gathering is relied upon to develop in size since more ladies partake in work life and have vocations. Besides they consider the conceivable absence of gainful exercises to a greater extent a supporter to stretch than the individuals who did not hope to work in remote environment. This gathering needs company's support in organizing work licenses, other vital documentation and help in distinguishing proper openings for work. In the event that that finding work ends up being troublesome, for instance research or instructive open doors might be accessible (Punnett, 1997).

Male life partners, who prevalently hope to work in remote area, are still moderately little gathering yet this gathering as become consistently amid recent years, since more ladies achieve center administration levels and along these lines look for global assignments. Male mates all around indented to work outside the home and they feel especially unequivocally that the sending association ought to help them in finding beneficial exercises. For a situation where a male companion in not able to utilize himself he might feel less commendable as they are not contributing monetarily. This circumstance proposes that male companions need significant backing in the change process. They require the same comprehension and backing as their female partners, however might require considerably more enthusiastic bolster, which is not generally accessible (Punnett, 1997).

Considering the noteworthy impact of the family related issues this examination urges associations to build up an expatriate's process in a way that it incorporate the necessities of the life partner and is additionally savvy. Counting the expatriate's mate in the process is a sensitive undertaking, yet when done legitimately is prone to bring about



more noteworthy exile achievement (and lower disappointment rate) and might demonstrate that generally cheap changes can yield considerable advantages.

CONCLUSION

As organizations around the globe continue to keep exploiting the conceivable outcomes of globalization, they will require successful and instructed workforce. Selecting right faculty for abroad assignments is more urgent than any time in recent memory in our time where data and contenders move perpetually speedier and there is little edge for blunders.

Keeping the exile laborers fulfilled and giving them important and right method for backing from pre-flight stage to the end of the abroad task is the way to make the expatriates program an effective one. The study that was done for this study gave a thought of the components youthful future officials consider to be the most critical when working in an outside nation.

Of course material and money related variables stay to be essential for this era as budgetary backing from the sending associations side was every now and again picked as vital type of backing. Notwithstanding, a repeating wonder in this review was that, most of the responders chose scholarly values over the specifically material ones. These discoveries make it workable for this study to make a conclusion, that youthful grown-ups who have had global involvement in their initial adulthoods see the criticalness of concentrating on and exhaustive planning when moving into an outside nation.

With these outcomes organizations ought to be more careful particularly with the pre-flight preparing subsequent to in this stage the vast majority of the conceivable disappointments can be turned away and this preparation is extraordinarily esteemed by expatriates.

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CLASSICAL ELEMENTS IN ASSAMESE LANGUAGE

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Abstract:

A classical language is a language with a literature that is classical. According to U C Berkeley linguist Georg L. Hart, “A classical language should be ancient, it should be an independent tradition that arose mostly on its own, not as an offshoot of another tradition and it must have a large and extremely rich body of ancient literature”. The ministry of Culture of Govt. of India has provided certain criteria or to identify an Indian language as classical language. According to criterias of the ministry of culture of Govt. of India Assamese fulfils all the criterias. So in this paper effort is made to discuss about the Classical elements in Assamese language.

Keywords: Language, Classical, Assamese, Government, Benefit.

Introduction:

The word ‘Dhrupadi’ is the Indianised word of the English word ‘Classical’. Dhrupadi or Classical is defined as traditional in style or form, or based on methods developed over a long period of time and considered to be of lasting value. Nagen Saikia in his book “Xahityar Bad-Baichitra” said, ‘Classical is a form of specific ideals with static human value personification.’ Since 5th century BCE to present day time, Assamese is a enriched and dignified language and its literary works prove that. The language spoke in the eastern most region of India is known as Assamese. Assamese is spoken in Assam primarily and it bears a legacy of almost 1500 years. Assamese is also used in neighbouring states of Assam viz Arunachal Pradesh, Nagaland and Meghalaya. The tribes of Arunachal communicate with themselves through Assamese language. In Nagaland a mixed version of Naga and Assamese language i.e. Nagamese is spoken widely. At present, with 15.4 million speakers, Assamese stands at 67th position surpassing Sanskrit, Greek, Hungarian, Swedish, Norwegian.

Aims and objectives:

The research work “Classical elements in Assamese language” has the following aims and objectives-

- To analyse the history of the origin and development of Assamese language.



- To detail study the Classical features reflected in Assamese language.
- To make a comparative study with other Indian classical languages with Assamese and to ascertain distinct features of these languages helping them to acquire classical language status.

Method and Scope:

For the above mentioned research work, we adopted descriptive, analytical and comparative method as well as field work for the convenience of research.

In the scope of the research, we shall cover history of Origin and development of Assamese language, elements signifying classical status in Assamese language and its features. Alongwith world classical languages, we shall discuss about Indian classical languages also.

Brief Introduction to previous work:

Assamese have a distinct identity and literary heritage possessing all features to be a classical language but there has not been systematic study about 'Classical elements in Assamese language'. There have been study about classical language of the world. Many books give detail analysis of those world classical languages. Some of those books are- 'The Classical Language of Architecture' by John Summerson; 'The Primary Classical Language of the world' by Devaney Pavanar; 'Sanskrit- An Introduction to the classical language' by Michael Coulson; 'When Dead tongues Speak' by John Graber Miller; 'Reading: Latin Grammer and Exercises' by Peter V. Jones and Keith C. Sidwell; 'The oxford Classical Dictionary' by Antony Spawforth and Simon Hornblower; 'Forward with Classics: Classical languages in Schools and Communities' by Arlene Holmes-Henderson, Steven Hunt, Mai Musie; 'The Philosophy of language in classical Indian tradition' by K. S. Prasad. Apart from these, in 7th Jan 2017, Professor of Assamese in Vishwa Bharati University Dr. Sangeeta Saikia wrote an article on 'Axomiya Pratidin' titled 'Axomiya Bhasai ketia labh koribo Dhrupadi Bhasar Marjyada'(when will Assamese get the status of Classical language) and on 4th Jan 2020, Ashok Sarma wrote an article titled 'Axomiya Bhasatuk Dhrupadi Bhasa hisape Sikriti Diyathe Sarkare Gurutta Diyok'(The Government should emphasis on granting classical language status to Assamese). These two article also discussed about the significance of granting classical language status to Assamese.

Assamese, though; having all the features of classical language has been neglected by the government. As a research student of Assamese language, knowing the importance of the topic has chosen the subject for this research work.



Main theme Discussion:

As of now, Tamil, Sanskrit, Telegu, Kannada, Malayalam and Odia are classified as Indian classical languages. Assamese also has much of its significance to become a classical language. We must know what classical language is before analysing our research topic ‘Classical elements in Assamese language’. Generally a classical language is that language which has a legacy of more than 1500 years with archaeological evidences.

Famous Linguist George L. Hast said, “A Classical Language should be ancient; it should be an independent tradition that arose mostly on its own, not as an offshoot of another tradition and it must have a large and extremely rich body of ancient literature.”

The ministry of Culture of Govt. of India has provided certain criteria for to identify an Indian language as classical language. Those are-

- 1) The language should possess historical literary evidence before 1500 to 2000 years ago.
- 2) The literature or literary tradition must be recognised as valuable by generation after generation.
- 3) The literary tradition must be original and should not trace its origin from other speech communities.
- 4) The classical language and literature should be separated from that of modern era and its other branches should not have any continuity.

According the criterias of the Ministry of Culture of Govt. of India, Assamese fulfils all the criterias. Because Assamese has literary evidence since 5th century BCE. Various edicts, inscriptions, writings on Xasipaath etc prove the fact. The literature of medieval period has a bunch of literary works. The modern literary tradition has enriched the languages further more. From the above evidence, we canfirmly claim that Assamese should be considered as a Classical language as it satisfies all the criteria mentioned above.

Assamese has a long historical background, Inscriptions, edicts discovered at various point of time prove its ancient nature. The origin of Assamese language can be traced in various edicts, inscriptions like Nagajari Khanikar village inscription(4th century BCE), Umachal inscription of Surendra Barma (5th century BCE), Barganga inscription of Bhutivarma (6th century BCE), Dubi edicts of Bhaskar Varman (7th century BCE), Nidhanpur edicts of Bhaskar Varman (7th century BCE), Kanai Barashi Bowa inscription (13th



century BCE)etc have evidence. Works like Charyapad, Shri Krishna Kirtan are considered to be common literature of Assamese, Bengali and Odia but we can see many indications of early Assamese language. Since 14th century, we witnessed a rich literary tradition of Assamese literature. 'Pralhad charit' by Hem saraswati is considered to be the earliest literary poem in Assamese. In the same century, poet like Kabiratna Saraswati, Haribar Bipra, Rudra Kandali and Madhav Kandali have provided a fullfledged literary genres to Assamese language through their works. In the Sankari era, Sankardeva, Madhavadeva, Anant Kandali, Ram Saraswati further strengthened the literary foundation of Assamese . In the 17th century , 'Kathaguru-Charit' and 'Buranji Xahitya' were two distinct literary works. 'Kathaguru-Charit' was written in Satriya atmosphere depicting chronicles of Guru Sankradeva and Madhavdeva. On the other hand, 'Buranji Xahitya' resembles the chronicles of Ahom Monarchs written in Royal patronage. The 19th century was very crucial period for Assamese people. "Orunodoi", the first Assamese magazine was published embracing modernity to the Assamese culture and society. The use of unique dictions, new syntax etc have provided a dimension to the language. In the last decade of 19th century, 'Jonaki'(1889) was published which played a pivotal role in the history of Assamese literature. In this period, Lakshminath Bezbarua, Chandrakumar Agarwala, Hemchandra Goswami, Benudhar Sarma, Satyanath Bora etc wrote many short stories, poems, novals, articles for stabilizing and enriching the language. They extensively used new idioms, phrases, local proverbs etc for strengthening the language. After the end of Romantic period, the literature of Assamese turned into new forms. Realism started to flourish in the literary works. Free verse, prose verse, metaphor, symbols, image, fusion of local and foreign language words etc were used indicating the advent and development of modernism in Assamese literature.

Thus, Assamese language has been showing its literary legacy in a very sophisticated manner since 14th Century BC. With all this features, Assamese can firmly claim the Classical language status. With more than 1500-2000 years of legacy and tradition, Assamese fulfills the criterias provided by the Ministry of Culture under Government of India. The subject of Granting Classical language status to Assamese is a matter of deep research. There are lots of evidences and study materials, we need to have a concrete and serious research work on the subject. If thorough research is done by the academians, research scholars, soon Assamese can present its claim to be classified into the classical language category.



If Assamese get the classical language status:

If Assamese get the classical language status, it will be benefites to a large extant –

1. There will be massive positive outcomes in the northeastern region which is troubled by dissimilarities of linguistic identities. Assamese will bind all the communities together in a egalitarian way. The evinity and complexity of linguistic ideties of the North East will reduce to some extent. Assamese will regain its previous status among the tribal population if it gets classical language status. Assamese can play its role to a big brother in binding and promoting mutual understanding among other languages.
2. It will reduce the inferiority complex and negligency of so called educated elite Assamese pupil towards their mothe tongue.
3. The unsolicited affection and extensive use of Hindi and English will reduce to some extent in Assamese society.
4. We have seen dominance of language of majority population over the language of minority population. It can welcome disastrous consequence in the society. But if Assamese gets classical language status, their minority tribal population will happily and respectfully accept Assamese as connecting languages and state language.
5. Assamese language, its literature and culture will gain significance at national and international level.

Conclusion:

Assam and the entire northeast is the heaven of linguistic identities. From the prehistoric ages, people from various ethnic groups are using languages from different language families. Assamese is the main language of Assam. Assamese is widely spread across Brahmaputra Valley, Upper Assam, Lower Assam and hilly regions and it has several dialects as well. Since 14th century to present day, various evidences show various form of Assamese language. Apart from inscriptions, edicts etc, the jewel of Assamese Srimanta Sankardeva has composed drama and built open theatre around 500 years ago. The 500 years old literary evidence clearly establishes the stature of Assamese language to be classified as an Indian Classical language.

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PREDOMINANCE OF DEPRESSION AMONG ORPHAN CHILDREN OF DISTRICT ANANTNAG J&K

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ABSTRACT

Background: The orphan children are more prone to depression. Orphanhood is expected to influence their health and their schooling. The main objective of this study was to access the level of depression of orphan children with respect to their gender.

METHODS: The sample for this study consists of 120 orphan children in which 60 boys and 60 girls orphan adolescents were selected by purposive sampling technique. For accessing the depression among the orphan children, Beck Depression scale was used.

RESULTS: 20.0% orphan boys have high depression, 76.6% have average depression, 3.33% have low depression. And 26.6% orphan girls have high depression, 58.33% have average depression, 15.0% have low depression.

CONCLUSION: It was found that orphan girls have more depression. Possible intervention is necessary to improve their mental health.

KEYWORDS: Predominance, Depression, Orphan, Orphanhood, children.

INTRODUCTION

The word orphan reveals that a child who has lost both parents through death or less commonly one parent. Parents death may affect the child's health both physically and mentally. Orphans are more probable to idealise suicide as a solution to feeling of helplessness. They get socially isolated when depressed due to the lack of care and love.

Orphanhood appears to be great element to depression. Children who lack affection, support of their parents became victims of depression and lose their mental stability. They demand special attention and right direction at their early stages.

Historically children were not considered candidates for depression. Mostly because of Freudian notions about the unconscious depression had viewed as a condition which only affected adults. Today childhood depression is widely



recognized and health professionals see depression as a serious conditions effecting both adolescents and young children.

Children living in orphanages are one of the most vulnerable groups of children living in a society. Many of them live in a state of repeated neglect, abuse or fear .Hence a safe new home that they can trust is not by itself sufficient to repair the damage improved by abnormal early stress on the developing nervous system (huges 1999).

Parents and sometimes grandparents are largely answerable for nurturing children and providing them necessities of life .In some cases when father or both parents of a child are dead and other close relatives are unwilling to take the responsibility of caring an orphan the child is usually placed in an orphanage established to provide care and housing to such needy children.

METHODS

A Cross sectional study was conducted to assess the depression among orphan children of Kashmir valley. A Cluster sampling technique were used to select the sample from different schools and orphanages of Anantnag district of j&k.The sample for the present study consists of 120 orphan children in which 60 were boys and 60 were orphan girls.

TOOLS USED

Beck Depression Scale and Demographic information sheets.

STATISTICAL TECHNIQUE

All the obtained scores of this research were analyzed with the help of simple statistical technique

- Mean
- Standard Deviation
- T-test

RESULTS AND DISCUSSION

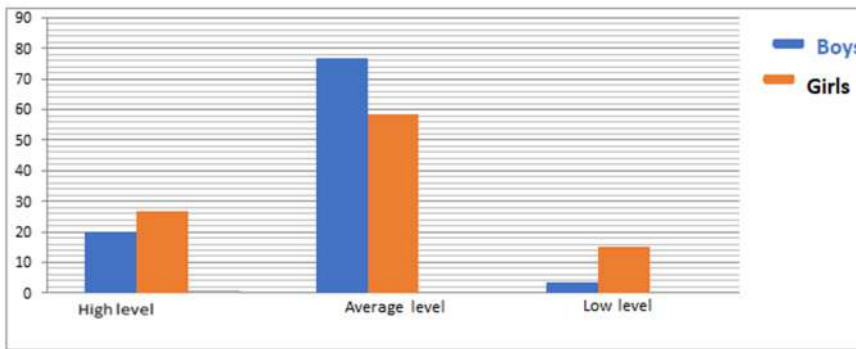
LEVEL OF DEPRESSION AMONG ELDER

	N	%age
HIGH	28	23.33
AVERAGE	90	75.0
LOW	2	1.67
TOTAL	120	100.0

The table shows the level of depression among the elderly.It indicates that 23.33% have high level of depression,75.0% have average level of depression and 1.67% have low level of depression.

LEVEL OF DEPRESSION WITH RESPECT TO GENDER

LEVEL OF DEPRESSION	Orphan boys		Orphan girls	
	N	%age	N	%age
HIGH	12	20.0	16	26.66
AVERAGE	46	76.66	35	58.33
LOW	2	3.33	9	15.0
TOTAL	60	100.0	60	100.0



Boys vs Girls Depression in Orphan Children

The above table indicates 20% orphan boys have high level of depression, 76.66% have average level of depression, 3.33% have low level of depression.

It also indicates that 26.66% orphan girls have high level of depression, 58.33% have average level of depression, 15.0% have low average level of depression.

MEAN DIFFERENCE BETWEEN ORPHAN BOYS AND GIRLS ON THEIR LEVEL OF DEPRESSION.

GROUP	N	MEAN	ST.DEVIATION	<ul style="list-style-type: none"> • t-value • 4.06*
Orphan boys	60	27.76	5.95	
Orphan girls	60	32.84	6.53	

* significant at 0.01 level

The above table shows that mean difference between orphan boys and orphan girls on their level of depression. It indicates that there is a significant difference between orphan boys and girls. The t-value 4.06 which is significant at 0.01 level.

The result of the table indicates that orphan girls have high level of depression as compared to orphan boys.



SUGGESTIONS

- Possible intervention through different seminars and reach outs is the need of an hour to improve mental health among orphan children.
- Special care should be given to orphan children both in schools and in societies.
- Youth with depressed and having poorer mental health should be informed about mental health services and how to access them.
- Orphan girls feel insecurity due to losing parents. Proper care and secure environment should be provided to them so that they can live their life safely.

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PREDICTION OF NETWORK ATTACKS USING BIO-INSPIRED ALGORITHM

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Abstract—Generally, to create data for the Intrusion Detection System (IDS), it is necessary to set the real working environment to explore all the possibilities of attacks, which is expensive. Software to detect network intrusions protects a computer network from unauthorized users, including perhaps insiders. The intrusion detector learning task is to build a predictive model capable of distinguishing between "bad" connections, called intrusions or attacks, and "good" normal connections. To prevent this problem in network sectors, they have to predict whether the connection is attacked or not from the KDDCup99 dataset using bio-inspired machine learning techniques(Genetic Algorithm). The aim is to investigate bio-inspired machine learning techniques for better packet connection transfers forecasting by prediction results in the best accuracy. To propose this machine learning-based method to accurately predict the DOS, R2L, U2R, Probe and overall attacks by prediction results in the form of best accuracy from comparing supervise classification machine learning algorithms and identify the confusion matrix and categorize data from priority and the result shows that the effectiveness of the proposed bio-inspired machine learning algorithm technique can be compared with the best accuracy.

Keywords—dataset; genetic algorithm; Machine learning classification method; Python; Prediction of Accuracy result.

I. Introduction

Intrusion detection defines the identification of attacks on computer systems has been a challenging problem in the domain of network security for quite some time. Software used to detect network intrusions protects a computer network from unauthorized uses thereby preventing malicious activities. The intrusion detector learning task is to build a classifier (i.e. a predictive model) capable of distinguishing between attack/intrusion and normal or good connections.

Considering the growing problems in network security and the need to develop sophisticated and robust solutions, the KDD Cup99 to construct an IDS on a training and testing data set. Since then, different machine-learning techniques such as naive Bayes Classifiers, Decision Trees,k- nearest neighbor, logistic regression, support vector machine, random forest have been trained on the KDD Cup 99 data set to learn about the normal and inconsistent patterns from the testing data and thereby generate classifiers that are able to detect an intrusion attack. The problem of network intrusion



detection is not just to identify the attack connections, but also to know what type of attack the connection belongs to. The limitation of these classifiers is that they generate a unified rule for all the attack types, although the algorithms perform well in segregating attacks from the normal connections, their performance is not so correct when it comes to identify what type of an attack the connection is/was. This can be explained by the fact that a single rule cannot accurately classify all the attack types. This is the problem statement s behind this project. We would like to have a predictive model that has the power to also predict the type of incoming attacks other than identifying attack connections. Amongst the different machine learning techniques, we selected the Genetic Algorithm as a good way to find an efficient solution to the problem.

We have designed a GA that generates a set of rules, wherein each rule has been evolutionarily generated to classify every attack type in the training and testing data set. The rationale behind selecting GA for this task is due to the inherent evolutionary trait in the algorithm which allows us to define our own fitness function based on which only those members or rules or hypotheses are selected that satisfy our fitness criterion. We can, therefore, make the algorithm by selecting only those individuals that clearly classify attack types at every step of its evolution.

With this approach in mind, we have designed and implemented a GA with the focus to achieve a high prediction accuracy rate >95% and minimal false-positive rate on the KDD Cup 99 data set. We have been able to generate a rule set to separate classes, wherein each can correctly classify the attack labels that it has been selected to correctly identify, and thus subsequently predict. The training of the algorithm was carried out on the 70% KDD Cup training data set, while the testing has been carried out on the entire 100% labeled set. The combination of rules gives us an appreciable accuracy (up to 99%) on the training data set and 98% accuracy on the testing data set thus justifying the choice, performance, applicability of Genetic algorithms to network attack predictive model.

II. Literature Survey

[1] *Title:*EM Monitoring and Classification of IEMI and Protocol-Based Attacks on IEEE 802.11n Communication Networks.

*Author:*Jonathan Villain, VirginieDeniau, Anthony Fleury,, *IEEE*, Eric Pierre Simon, Christophe Gransart, and Raouf Kouri

*Year:*2019

This paper discusses the methodology to detect and classify jamming and protocol-based attacks, By outsourcing the attack detection function from the network to protect and used an antenna to monitor the spectrum over time. The spectra highlight that the frequencies of interest belong to the communication channel between 2.402 and 2.422 GHz. On these frequencies, the proposed estimation model has good results in the prediction of attacks. The development of connected devices and their daily use is presently at the origin of the omnipresence of Wi-Fi wireless networks. However, these Wi-Fi networks are often vulnerable and can be used by malicious people to disturb



services, intercept sensitive data, or to gain access to the system. In railways, trains are now connected with wireless communication systems for operational uses or for passenger servicing. To perform this prevention and detection, it monitors and analyzes electromagnetic (EM) signals received by a monitoring antenna and a receiver collecting the EM spectra. After that, it used the support vector machine (SVM) classification model using the collected spectra and uses this SVM model to predict the class of the attack (if any). The approach for detecting the attacks based on the physical layer via the spectra this approach makes it possible to outsource the monitoring system. The classification protocol adapted to this context both the ability to detect jamming attacks as well as protocol-based attacks. It can't discuss to know how our model can evolve in the case where the unknown attack occurs with all types of attacks by popular machine learning algorithms. It can't describe each categorized of DOS attacks like back, Neptune, etc. based on the network connections as well as it can't predict attacks other than DOS.

[2] *Title:* Randomized Security Patrolling for Link Flooding Attack Detection

Author: Xiaobo Ma, Bo An, Mengchen Zhao, Xiapu Luo* , Lei Xue, Zhenhua Li, Tony T. N. Miu, and Xiaohong Guan

*Year :*2019

This study formulates the problem as a Stackelberg security game, and design optimal detection strategies in consideration of the adversary's behavior, which is believed as a significant step forward in formally understanding LFA detection strategies. The proposed strategy is randomized (like security patrolling) to make the specific resource assignment unpredictable to the adversary at the time of scheduled attacks, while simultaneously optimizing the defender utility. Moreover, best and quantal response models are leveraged to characterize the adversary's behavior. We demonstrate that, compared with strategies such as uniform-detection (i.e., probing each path uniformly at random) and best-detection (i.e., constantly probing the path containing the most important link), the proposed strategy can maximize the detection utility. With the advancement of large-scale coordinated attacks, the adversary is shifting away from traditional distributed denial of service (DDoS) attacks against servers to sophisticated DoS attacks against Internet infrastructures. Link flooding attacks (LFAs) are such powerful attacks against Internet links. Employing network measurement techniques, the defender could detect the link under attack. However, given a large number of Internet links, the defender can only monitor a subset of the links simultaneously, whereas any link might be attacked. Therefore, it remains challenging to practically deploy detection methods. This paper addresses this challenge from a game-theoretic perspective and proposes a randomized approach (like security patrolling) to optimize LFA detection strategies. This employs a series of techniques to solve the non-linear and non-convex NP-hard optimization problems for finding the equilibrium. The experimental results demonstrate the necessity of handling LFAs from a game-theoretic perspective and the effectiveness of the solutions. It has protected by different defenders are typically interdependent due to network externalities. It has not optimally



suppressed attacks against different links remain new problems worthy of being systematically explored.

[3] *Title:* Complete Coverage Autonomous Underwater Vehicles Path Planning Based on Glasius Bio-inspired Neural Network Algorithm for Discrete and Centralized Programming

Author: Bing Sun, Daqi Zhu, Chen Tian, Chaomin Luo,

*Year :*2018

A new strategy for multi-AUVs cooperative full coverage path planning methods based on the GBNN algorithm is proposed. In the GBNN and discrete programming AUV cooperative full coverage algorithm, all the AUVs share environment information, and each AUV will consider other AUVs in the area as moving obstacles, which can guarantee AUV covering the detection task in the designated water space without collision. In full coverage cooperative algorithm with GBNN and centralized programming, the CVT distribution is given for multi-AUVs to divide the non-overlapping regions, uniform size task sequences. Each AUV is only responsible for the planning of its sub-area. When the AUV completely traverses each task sequence region, namely complete coverage of the entire work area detection task is realized with the division of labor cooperation. Finally, simulation experiment results show that, through the proposed two kinds of an algorithm, multi-AUV can plan reasonable and collision-free coverage paths and reach full coverage on the same task area with a division of labor and cooperation. For the complete coverage path planning of Autonomous Underwater Vehicles (AUVs), a new strategy with the GBNN algorithm (Glasius Bio-inspired Neural Network) with discrete and centralized programming is proposed. In order to solve the difficulty of single AUV full coverage task of large water range, the multi-AUV full coverage discrete and centralized programming is proposed based on the GBNN algorithm. The simulation experiment is conducted to confirm that through the proposed algorithm, multi-AUVs can plan reasonable and collision-free coverage path and reach full coverage on the same task area with a division of labor and cooperation. It can realize the complete coverage of the region. It has not to make modeling for multi-AUVs complete coverage problem based on a grid map and neural network

[4] *Title:* A Bio-Inspired Approach to Traffic Network Equilibrium Assignment Problem

Author: Xiaoge Zhang and Sankaran Mahadevan

*Year :*2017

It proposed a novel algorithm—Physarum solver— to address the traffic network equilibrium assignment problem. The algorithm converges to the optimal solution by automatically updating the cost on each link and distributes the demand between OD pairs through the network in a way that approaches the equilibrium assignment. Several numerical examples were used to illustrate the proposed method. This is verified by comparing the solutions and performance with the FW algorithm, CFW algorithm,



BFW algorithm, and GP algorithm. The proposed method is seen to outperform the other methods on several networks with different sizes. The main contribution of this paper is to extend a Physarum based method to solve the traffic assignment problem, which integrates the pathfinding and flow redistribution processes into one. The original Physarum model is generalized to solve the SPP in directed networks and asymmetric graphs; the Physarum model is extended to address the network optimization problem with multiple sources and sinks, and a composite function is constructed to update the link cost in a way such that the proposed algorithm is able to converge to the solution of traffic assignment problem. The proposed method is very simple to implement. All the advantages of the proposed method are attributed to the Physarum's unique features: adaptivity and continuity of the flow. Every time the link cost is updated, the flow gets reallocated through the network according to the network Poisson law, which in turn, updates the link cost again. Finding an equilibrium state of the traffic assignment plays a significant role in the design of transportation networks. It adapts the pathfinding mathematical model of the slime mold Physarum polycephalum to solve the traffic equilibrium assignment problem. There are three contributions to this paper. It proposes the generalized Physarum model to solve the shortest path problem in directed and asymmetric graphs and extends it to resolve the network design problem with multiple source nodes and sink nodes. At last, It demonstrates that the Physarum solver converges to the user-optimized (Wardrop) equilibrium by dynamically updating the costs of links in the network. Numerical examples are used to demonstrate the efficiency of the proposed algorithm. The superiority of the proposed algorithm is demonstrated in comparison with several other algorithms, including the Frank-Wolfe algorithm, conjugate Frank-Wolfe algorithm, biconjugate Frank-Wolfe algorithm, and gradient projection algorithm. Propose a generalized Physarum model to solve the shortest path problem in directed and asymmetric graphs, it further to resolve the network design problem with multiple source nodes and sink nodes. It has not to find a mathematical model of the slime mold Physarum polycephalum to solve the traffic equilibrium assignment problem

[5] *Title:* Adversarial Examples: Attacks and Defenses for Deep Learning

Author: Xiaoyong Yuan, Pan He, Qile Zhu, and Xiaolin Li

*Year :*2019

This paper searched the recent findings of adversarial examples in DNNs. This paper attempted to cover the state-of-the-art studies for adversarial examples in the DL domain. Compared with recent work on adversarial examples, this analyzed and discussed the current challenges and potential solutions in adversarial examples. However, deep neural networks (DNNs) have been recently found vulnerable to well-designed input samples called adversarial examples. Adversarial perturbations are imperceptible to humans but can easily fool DNNs in the testing/deploying stage. The vulnerability to adversarial examples becomes one of the major risks for applying DNNs in safety-critical environments. Therefore, attacks and defenses on adversarial examples draw great attention. This reviews the recent findings on adversarial examples for DNNs, summarizes the methods for generating adversarial examples, and proposes a



taxonomy of these methods. Under the taxonomy, applications for adversarial examples are investigated. This further elaborates on countermeasures for adversarial examples. In addition, three major challenges in adversarial examples and the potential solutions are discussed. Deep learning is being applied in many safety-critical environments. It did not make a wide range of applications make it hard to evaluate the robustness of a DNN architecture.

[6] *Title:* Distributed Secure Cooperative Control under Denial-of-Service Attacks from Multiple Adversaries

*Author:*WenyingXu, Guoqiang Hu

*Year :*2019

This paper has investigated the distributed secure control of multiagent systems under DoS attacks. It focuses on the investigation of a jointly adverse impact of distributed DoS attacks from multiple adversaries. In this scenario, two kinds of communication schemes, that is, sample-data and event-triggered communication schemes, have been discussed and, then, a fully distributed control protocol has been developed to guarantee satisfactory asymptotic consensus. Note that this protocol has strong robustness and

high scalability. Its design does not involve any global information, and its efficiency has been proved. For the event-triggered case, two effective dynamical event conditions have been designed and implemented in a fully distributed way, and both of them have excluded Zeno behavior. Finally, a simulation example has been provided to verify the effectiveness of theoretical analysis. The future enhancement focuses on fully distributed event/self-triggered control for linear/nonlinear multivalent systems to gain a better understanding of fully distributed control. It protocol guarantees asymptotic consensus against distributed DoS attacks. It has not done event/self-triggered control for linear/nonlinear multiagent systems to gain a better understanding of fully distributed control.

III. PROPOSED SYSTEM

Bio-inspired computing, short for biologically inspired computing, is a field of study that loosely knits together subfields related to the topics of connectionism, social behavior emergence. It is closely related to the field of artificial intelligence, as many of its pursuits can be linked to machine learning. It relies fully on the fields of biology, computer science mathematics. Bio-inspired computing (also biologically inspired computing or biocomputing) is a concept of computing that deals with the subfields related to the topics of connectionism, social behavior, and the emergence. It closely related to the field of artificial intelligence, as many of its features can be linked to machine learning. It deals fully on the fields of biology, computer science, and mathematics. Bio inspired computing is an important subset of natural computation.

The genetic algorithm (GA) is usually homogenous with respect to the used learning algorithms. On the other hand, recent physiological observations suggest that in biological neurons synapses undergo changes according to local learning rules and it presents a biophysically motivated learning rule which is influenced by the shape of



correlated signals and results in a learning the characteristics which based on the dendritic site. We go through this rule in a biophysical model as well as in the equivalent artificial neural network model. These are models that are inspired by the structure of biological neural networks and they are a class of pattern matching. That we use for regression and classification problems. Although, there is an enormous subfield and it combines hundreds of algorithms and variations. For , it requires the collaboration of researchers from different communities like computer science, artificial intelligence, biology, ecology, social science, etc. in order to have a broader and deeper view and analysis of each micro-level step/interactions thereby having much more significant and outstanding results

Exploratory Data Analysis:

This analysis is not meant to be providing a final conclusion on the reasons leading to the network sector as it doesn't involve using any inferential statistics techniques/machine learning algorithms. Machine learning supervised classification algorithms will be used to give the network connection dataset and extract patterns, which would help in predicting the likely patient affected or not, thereby helping the attack of avoids for making better decisions in the future. Multiple datasets from different sources would be combined to form a common dataset, and then various machine learning algorithms would be applied to extract patterns and to obtain results with maximum accuracy.

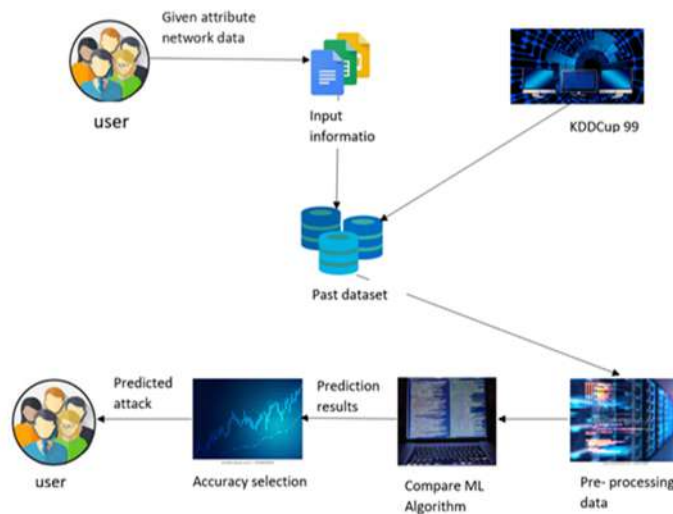
Data collection:

The data set collected for predicting the network attacks is split into the Training set and Test set. Generally, 7:3 ratios are applied to split the Training set and Test set. The Data Model which was created using the Bio-inspired algorithm, Random Forest, logistic, Decision tree algorithms, K-Nearest Neighbor (KNN) and Support vector classifier (SVC) is applied on the Training set and based on the test result accuracy, Test set prediction is done.

Preprocessing:

The data which was collected might have missing values that may lead to inconsistency. To gain better results ,data be preprocessed so as to improve the efficiency of the algorithm. The outliers have to be removed and also variable conversion need to be done. The correlation among attributes can be identified using a plot diagram in the data visualization process. Data preprocessing is the most time-consuming phase of a data mining process. Data cleaning of connections, data removed many attributes that have no relation to the behavior of packet transfers. Data integration, data reduction and data transformation are also to be needed for network connections dataset. For easy analysis, the data is reduced to some minimum amount of records. Initially, the Attributes which are critical to making a loan credibility prediction

is identified with information gain as the attribute-evaluator and Ranker as the search-method.



Data validation and pre-processing technique

Data validation process:

1. Finding the missing value, duplicate value description of data type whether it is float variable or integer.
2. The primary goal of data cleaning is to detect and remove errors and anomalies to increase the value of data in analytics and decision making.

Data Pre-processing:

3. Data Preprocessing is a technique that is used to convert the raw data into a clean data set.
4. Random Forest algorithm does not support null values. Therefore, to execute random forest algorithm null values have to be managed from the original raw data set.

Data analysis of visualization:

1. Data visualization is an important skill in applied statistics and machine learning.
2. Data visualization provides an important suite of tools for gaining a qualitative understanding.

Training:

1. The sample of data used to fit the model parameters.
2. In common dataset is divided into training and test data randomly in the ratio of 67:33 / 70:30. Then we encapsulate any algorithm to train the model.

Performance measurements of DoS attacks using SMLT and GA



1.Dos attack is a cyber-attack in which the perpetrator seeks to make a machine or network resource unavailable to its intended users by temporarily or indefinitely disrupting services of a host connected to the internet.

2.The different ways to launch a DoS attack are by abusing the computer's legitimate features,

. by targeting the implementation bugs.

. by exploiting the misconfiguration of the systems.

Types: Back, Neptune, Land, Pod, etc.,

Performance measurements of R2L attacks using SMLT and GA

1.In Remote to local attack, an attacker sends packets to a machine over a network that exploits the machine's vulnerability to gain local access as a user illegally.

2.Nowadays, it is very important to maintain high-level security to ensure safe and trusted communication of information between various organizations.

3.Recognition of intrusions is a critical matter.

Types: FTP Write, Multihop, Warezclient, Warezmaster.

Performance measurements of U2R, Probe attacks using SMLT and GA

1.The attacker tries to access the normal user account and gains root access information of the system.

2.These attacks are exploitations in which the hacker starts off on the system with a normal user account and attempts to abuse vulnerabilities in the system in order to gain superuser privileges.

Types: Load module, Rerl, Rootkit, Buffer overflow.

3.Probing is an attack in which the hacker scans a machine or a networking device in order to determine weaknesses or vulnerabilities that may later be exploited so as to compromise the system.

Types: Ip sweep, Nmap, Satan, Port sweep.

IV. CONCLUSION

Our results have been very encouraging. We were able to generate a rule using the principles of evolution in a GA to classify all types of smurf attack labels in the training data set. Our false positive rate is also quite low at 0.2% and the accuracy rate is as high as 100%. These results have provided us with the impetus to extend our program and apply it to search over all the fields in the connections. We hope this would improve the performance of the GA considering that at present we are able to classify all of the smurf attack-type of connections based on matching only eight fields. This brings some of the following insights about detecting the network attack of each new connection.It can be inferred from this model that, area analysis and the use of machine learning techniques are useful in developing prediction models that can help network sectors reduce the long process of diagnosis and eradicate any human error.

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THE BALTI CULTURE UNDER THE SWAY OF BONNISM, BUDDHISM AND ISLAMISM

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Abstract

The main objective of the paper is to depict how cultural changes occurred in the different phases of the different religious periods and that cultural changes lead to threaten the cultural identity of Balti tribe in Ladakh. In this paper ‘three ism’s’ means the phases of Bonnism, Buddhism and Islamism. By historically tracing the different phases of different religion of the Balti tribe it is tried to trace the cultural traits of different isms and the occurrence of cultural transmission and cultural change among the tribe. Cultural transmission occurred when the oral teaching of the cultural traits changes from one type of culture to another. Cultural transmission leads to the changes in cultural activities, norms, beliefs and faiths. Primary source of information is used to collect the cultural information of the tribe with the help of an ethnographic method (direct observation) and also secondary sources of information like books, Articles and Journals was used to trace the history of the tribe.

Keywords: Culture, Tribe, Cultural Transmission, Culture Change, Religion.

Introduction

The anthropological definition of culture according to the anthropologist E.B Tylor is “that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society. This definition underscores that “culture” is not “above and beyond” but art and parcel of, the everyday world (Griswold, 1994). For cultural anthropologists who utilize this conceptualization of culture, culture is all encompassing and all-pervasive. Culture is at the heart of human existence (Edles, 2002).

The ethnographic definition of culture is like, culture means all that is produced by human groups to include all elements of social life, anything that is not biological or evolutionary. (Edles 2002). This definition is too broad and it links culture and society too much. There is no way to distinguish the cultural realm from other dimensions of society. There is a complete fusion of the social and the cultural realms (Edles, 2002). The cultural systems includes highly organized and formalized systems of meaning, such as religion, as well as relatively mundane, taken-for-granted webs of signification integral to daily life,



as well as highly organized but also open symbolic systems, such as language and fashion (Edles, 2002).

Like the ethnographic definition of culture, the symbolic definition of culture emphasizes that cultural systems are historically linked to specific social groups at specific moments, and intertwined in complex ways with other societal dimensions. The collective nature of culture is most evident in language which is one of the most fundamental systems of meaning (Edles, 2002).

Religion and culture

For the classical sociologist Emile Durkheim religion is a system of symbols and rituals about the sacred, involving a community of believers. The social and communal function of religion is carried out through the dual processes of reutilization and symbolization (Edles, 2002). It means religion is an important means to evolve cultural traits, rituals and symbols. If a whole community changes its belief system (religion) from one to another form then a holistic change in their rituals and symbols would take place. And from time to time it adopts the different cultural traits but still some cultural traits of the earlier one remains which cause a demolition of a pure culture and formation of a hybridized culture.

Cultural Transmission and Cultural Change

Preferences, beliefs and norms that govern human behavior are formed partly as the result of genetic evolution and partly they are transmitted through generations and are acquired by learning and other forms of social interaction. The transmission of preferences, beliefs and norms of behavior which is the result of interaction across and within generation is called cultural transmission (Bisin, 2005). Whereas, cultural changes is what, when the original cultural traits gets merged with the new cultural traits. The Balti tribe of Ladakh has gone through the three phases of ism's that is Bonnism, Buddhism and Islamism. During these three phases of ism's the cultural changes has been occurred and the transmission of different cultural traits and belief system has been adopted by the tribe in its history.

The Balti Tribe of Ladakh

There are many different tribes residing in the area of Ladakh like, Purgi tribe, Dardi tribe, Bodh tribe, Shina tribe, Changpa tribe, and many more. Different tribe has their own unique culture representing their existence, as culture is the identity of a human as a member of a society. Like all these tribes living in the area of Ladakh, Balti tribe is also residing in the same area, although this tribe



has its own history which begins from the area of Baltistan (the area today falls under the illegal occupation of Pakistan Occupied Jammu and Kashmir).

Many anthropologists believe that the modern Baltis who speaks the Tibetan dialect are not from the pure Tibetan stocks, but with the passage of time, many other tribes namely, Yashkuns, Shins (Dardic people), Turks (Especially Ugyurs from central Asia), Persian (Sufis), Arabs (mostly Sayeds) and Kashmir's made their inroads to Baltistan and gradually merged with the local population. After second or third generation they became Balti (Suri, 2010). Prior to civilization (4th-5th century AD) the Tibetan Khampa was entered through Chorbat valley and the Indo Aryan Dardic tribes came to Baltistan (land of Baltis) through Roundu valley and are known as Balti tribe (Dewan, 2017). Some Colonial historians placed almost all peoples and languages of the upper Indus River into one group and defined Tibetans as "BALTIS" (Dewan, 2017). Baltistan is the region, the majority of which is in Northern Pakistan which forms Gilgit-Baltistan and some areas are in Ladakh division of Jammu and Kashmir, India. It is inhabited principally by the Balti people of Tibetan descent. (Dewan, 2017)

Balti Tribe during the period of Bonnism

Baltistan was known as 'Little Tibet' in the ancient period of time. The exact date of the rule of Tibetans on the area of Gilgit-Baltistan is unknown. But in the different periods of time, the Tibetans came to Baltistan and ruled over there till the period when Baltistan became an independent kingdom in 842 AD.

Even before the invade of Baltistan by the Tibetan Kingdom, the nomadic tribes who were dwelled in the valleys of the Indus, the Shyok and there tributaries have cultural affinities with Tibet. Balti language according to the Linguists is one of the most archaic forms of Tibetan language. The rock inscriptions in the Tibetan script in Baltistan suggest that in some stage, the form of Buddhism practiced in Baltistan became entirely Tibetan (Suri, 2010). Bonchos was the earliest religion of Tibet and later it became the religion of Gilgit Baltistan also. The Bonnism believed in the practices of dualistic theism. The worship of nature was the way to provoke Bon God.

The ancient carving rocks depicts the animisation period of Balti people. The ancient period of Baltis were said to be influenced by Zang Zung (a place in west Tibet) and later on in 7th century Baltistan was ruled by the Tibetan king Songstan Gampo. Before 7th century the people residing in Baltistan adopted the Tibetan culture and religion (Bonnism or Animism). Later on they adopted Indian Buddhism. (<http://forgottenbooks.com>)

The oldest records of the ancient rulers of Gilgit, Baltistan and Ladakh the countries which were later on overrun by the Tibetan, royal ancestry is connected to the Bactrian Geasar. Geasar was the fearless lord of the legendary kingdom of Ling (ancient King of Tibet) in Tibet. The oral tradition of early



Tibetan, Mongolian, Buryat, Balti and Ladakhi depicts the belief of Geasar as a powerful hero or hero of culture. It is recorded in the form of poetry, prose and stories. All these are conserved among the Balti of Baltistan. (www.exploretibet.com)

Balti Tribe During the Period of Buddhism

The Tibetan Tubo king ruled over the area of Gilgit-Baltistan and Ladakh. King Trison Detson, Khenpo Shantarakshita from India ordered in Tibet plateau (including Gilgit-Baltistan) to establish Buddhism. The monasteries were established in Skardu in that era (Dewan, 2017). Now the belief system, culture, rituals, and myths of Buddhism were adopted by the tribe which was quite different from that of Bonchos religion. Here the cultural transformation occurred and many new cultural traits of Buddhist religion transformed in the place of Bonnism.

Independent of Gilgit Baltistan from Tibetan rule

Tibetans ruled over the five valleys of Baltistan which are named as Skardo, Shigar, Rongdu, Khaplu and Kharmang. In 842 AD century the Tibetan monarchy disintegrated and the kingdom of Tibet started breaking in the autonomous provinces and Gilgit-Baltistan regained their independence in the process (Suri, 2010). The Tibetan king Skitze Nemagon (975-990) migrated from Tibet to a region that borders Ladakh to the east. In this era, king Namgyan established an independent kingdom in Purang which includes the present Leh district. And this area became linked with the western Tibet (Leh) and remained so till the advent of Islam (Dewan, 2017). Baltistanis or the whole Baltistan was not paid much attention during the rule of Namgyon's successors. Nemagon's son was Lha Chen sPalgyi-gon (1000-1025). The same situation was continued till four generations of rulers of Western Tibet. During the period of 1125-1150 Lha Chen Utpala the king of much of Ladakh conquered all territories up to Pasho Kajor and continued to rule over Athok (Kharmang) till the era of Maqpon Gazi Mir (ruler of Baltistan) (Dewan, 2017). During the period of Jamyang Namgyal, Baltistan was invaded by Balti ruler Ali Sher Khan Inchan. (Dewan, 2017) The Tibetans ruled over Baltistan as early as in the eight century, and continued to dominate Baltistan Politically and culturally till the fifteenth century, when many Baltis accepted Islam (Dewan, 2017).

Balti Tribe During the Period of Islamism

During the Tibetan ruler Gato Cho Sangay (1437-1464 AD), a great revolution took place in Baltistan. In the beginning of eight century Hijra, Islam spread in Kashmir due to Muslim scholars especially Hazrat Amir-e-Kabeer, Mir Syed Ali Hamdani (Khan). He was a Muslim saint who came from Iran to preach Shiiat Islam and many people in Gilgit Baltistan converted to Islam from Bon-



Po (Bonism) and Tibetan Buddhism (www.Balti.in) . Mir Syed Ali Hamdan visited Kashmir thrice in 1377 AD, 1379 AD and 1382 AD. He visited to Baltistan and Ladakh during his journey to China and Turkistan. He visited Kashmir for the first time in 1373 AD during the reign of Sultan Shahab-ud-din (1360-175 AD). Sultan Shahab-ud-din was busy in war with Sultan Feroz Shah Tughluq in Punjab. After staying four months in Kashmir he went towards Punjab and met Sultan Shahab-ud-din and the war ended up with the noble effort of the saint. (Aabedi, 2009)

The next time Mir Shah Hamdan visited in 1379 AD during the reign of Qutub-ud-din, he was the brother of Sultan Shahab-ud-din. That time Mir Shah Hamdan was visited with the accompany of 700 Sayeed disciples. Later on all his disciples scattered in the valley of Kashmir and the neighboring regions to strengthen the roots of Islam and to perform their religious duties. In 1380 AD after staying few months in Kashmir, he proceeded to Chinese Turkistan via Tibet. In the course of his journey he propagated Islam in Baltistan and Ladakh. Masjid Shah Hamdan Shay and Tyakshi Nubra are believed to be built during this period. In 1382 he visited to Kashmir for the third time and soon he left for Macca for pilgrimage, but on the way to macca he died at Pakhli in 1383 AD. He was buried at Khatlan. (Aabedi, 2009)

In 1435-1445 AD another saint of Islam named as Shah Syed Mohammad Noorbaksh entered Baltistan to preach Noorbaksh sect of Islam. He was the nephew of Hazrat Shah Hamdan and was a loyal disciple of him. He presented himself as the successor of Hazrat Shah Hamdan. (Aabedi, 2009)

During his visit to Baltistan the Rajas named as Gota Chow Singey, Gazi Tham and Shah Azam were the rulers of Skardu, Shigar and Khapulo respectively. Shah Noorbaksh gave a general invitation to the Rajas and their subjects in Baltistan through his noble practice and teaching of Islam. People began to accept Islam one after another (Aabedi, 2009). And soon the whole region converted to Noorbakshi order of Islamic Sufism. The commands of the order of Sufism are as follows:

- Complete elimination of all evil desires and immoralities of human nature from one's self.
- Total submission to ones will before Allah (by following the Quran and Sunnah)
- Love and peace for the whole mankind.(Aabedi, 2009)

The belief in animism is still retained by the people of Baltistan. The local Muslims who converted from Bon-Po and Buddhism considered the Swastila (Yung drung) sign as auspicious and are curved on wooden planks that can be seen in Historical mosques and Khankas (another form of mosque). And also it is customary to show respect to the Bon God (Lha Lhu) during the village festivals. (Aabedi, 2009)



The converted Baltis in the 16th century started attaining the congregations in the Mosques and Khankahs as an important religious ritual. The Khankahs are a kind of typical training school of Noorbakshi Sufis which was introduced by the early Sufi saints arrived in the region. Mosques in Baltistan are mainly built in the Tibetan style and some mosques are built up in the Iranian style which can be seen in Kargil and Leh (Ladakh). (Balti.in/en/-887)

After the Death of Syeed Mohammad Noorbaksh, another important figure appeared on the religious scene of Baltistan who was named as Meer Shams-Ud-Din Araqi. He propagated the Shia sect of Islam in Baltistan and Kashmir. (Khan, 2014)

Araqi came to Kashmir for the first time in 1487 AD during the reign of Sultan Hassan Shah. His main concern was to meet the Sultan, but he could not see him as Sultan was died due to serious illness. He stayed in Kashmir for eight years and was engaged in his mission to spread Islam in Kashmir valley. Some of the influential persons of Kashmir like Kaji Chak, Ali Najar, Baba Ali, Malik Musa Raina and Gazi Chak became his loyal disciples and followed him as a true Shia Muslim. Later these persons under the guidance of Meer Shams-ud-din Araqi started propagating Shiaism openly in Kashmir. When the pro-Sunni Muslim named as Mohammad Behqi heard about the spread of Shiaism he became very angry and made him to migrate forcibly to Baltistan. In Baltistan he preached the Imamia Isne-Ashria (Shiaism) principles. The entire population of Baltistan and Purig followed the Shia sect of Islam. He continued to preach Islam in Baltistan for six years more and during that period the Rajas of Baltistan were Maqpon Bokha, in Skardu, Raja Garzi in Shigar, Rai Behram in Khapulo and Raja Habib Cho in Puric. (Khan, 2014)

It is believed that during his visit to Khaplu and Chorbat he might have reached to Leh. The Khankah of Chushot in Leh and Baru Khanqah in Kargil are considered to be built by him and his disciples in the end of 15th century. He was died in 1525 AD in Kashmir (Aabedi, 2009).

After the death of Mir Shams-ud-din Araqi the propagation of Islam in Baltistan took forward by Mir Daniyal. He was the son of Mir Shams-ud-din Araqi. Mir Daniyal was in Skardu area of Baltistan. While he was engaged in the propagation of Islam, the ruler of Kashmir Mirza Haider Douglat convened him and assassinated him on the allegation of accusing the Sahabas. His dead body buried there by his followers. (Khan, 2014)

Later the two Sayed brothers named as Sayed Naseer Tosi and Sayed Ali Tosi continued the mission of Propagating Islam in Baltistan and constructed many mosques at many places of Shigar and Skardu. Similarly two other brothers came to Baltistan to spread the Islamic perspectives. They were named as Sayed Yahya and Sayed Mukhtar. They came from Turkistan. During that period Raja Azam Khan was the ruler of Shigar. In the beginning they were in Shigar and



then in Chhukra. While preaching and applying some Islamic rules presented by Sayed Mukhtar, the Raja of Shigar that is, Raja Azam kham did not approved all those rules for implementation. Later he visited to the villages of Shyok valley up to Chhorbat area (Baltistan). There he constructed the mosques in every villages and appointed his senior disciples as Mala, to perform religious duties and rituals. Then he reached to Turtuk to preach the noble teachings of Islam there. His descendents permanently settled in Baltistan and they are still performing their respective religious services (Aabedi, 2009).

A holistic change in the culture of the Balti tribe occurred when the Islamic teachings of belief system initiated by the Islamic preacher came from Persia. The cultural change took place and many new cultural structures was adopted by the tribe. There are many different cultural traits and cultural identity of the Persian culture found among the tribe after the coming of Islamism in Baltistan. The idol worship prohibited, purdah system made compulsory for women and many more Islamic teachings and practices followed by the people.

Conclusion

Today it is found that the original cultural identity of the tribe has been diminished due to the cultural transmission in different periods of times. Though, the ancient cultural traits remained till now in the form of folk stories, folk tales, folk songs, dances and in many other forms. But one cannot trace the original culture of Bon of Tibet, Buddhist of Leh and Islam of Persia. There is a mixture of the culture of all those three phases of ism's. And also due to the globalization of the world the interaction of different people is taking place in the core villages of India and Turtuk village is also become a tourist spot in Ladakh due to which the culture is again in the initial phase of another ism.

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EFFECTS OF OVERPOPULATION ON ENVIRONMENTAL POLLUTION AND HUMAN HEALTH

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Abstract

Overpopulation is an undesirable condition where the number of existing human population exceeds the carrying capacity of Earth. Overpopulation is caused by number of factors. Reduced mortality rate, better medical facilities, depletion of precious resources are few of the causes which results in overpopulation. It is possible for a sparsely populated area to become densely populated if it is not able to sustain life. Overpopulation is largely attributed to trends such as people living longer and enjoying higher live birth rates. Overpopulation of specific locations can also result from migration. Oddly enough, the overpopulation of an area can occur without a net gain of population. It can result from a reduction in the carrying capacity of a region, such as reduced agricultural yield due to over farming or drought. Such conditions may lead to an out-migration. Human population growth and climate change have grown hand in hand as the use of fossil fuels has exploded to support industrialized societies.. Most fossil fuel consumption comes from developed countries. It's no secret that the planet faces serious environmental concerns from water and air pollution to deforestation. Numerous studies have exposed that environmental particulate exposure has been linked to increased risk of morbidity and mortality from many diseases, organ disturbances, cancers, and other chronic diseases. While the causes are complex, one significant contributor to the problem is population growth.

Keywords: Over population, environmental, Pollution, Societies and Diseases.

Introduction:

It's no secret that the planet faces serious environmental concerns from water and air pollution to deforestation. While the causes are complex, one significant contributor to the problem is population growth. Understanding the relationship between population growth and environmental issues may be the first step toward identifying real solutions.

Overpopulation is an undesirable condition where the number of existing human population exceeds the carrying capacity of Earth. Overpopulation is caused by number of factors. Reduced mortality rate, better medical facilities, depletion of precious resources are few of the causes which results in



overpopulation. It is possible for a sparsely populated area to become densely populated if it is not able to sustain life.

Growing advances in technology with each coming year has affected humanity in many ways. One of these has been the ability to save lives and create better medical treatment for all. A direct result of this has been increased lifespan and the growth of the population. In the past fifty or so years, the growth of population has boomed and has turned into overpopulation. In the history of our species, the birth and death rate have always been able to balance each and maintain a population growth rate that is sustainable. Developing nations face the problem of overpopulation more than developed countries, but it affects most of the Earth as of now. When we are talking about overpopulation, we should first understand the causes of it.

The current population of the Earth is over 7.6 billion people and growing. It could reach 8 billion by 2025, 9 billion by 2040, and a whopping 11 billion by 2100. Population is growing rapidly, far outpacing the ability of our planet to support it, given current practices. Overpopulation is associated with negative environmental and economic outcomes ranging from the impacts of over-farming, deforestation, and water pollution to eutrophication and global warming.

The term overpopulation is used to describe a situation in which the world or area has a population so large that the people there are suffering as a result. In other words, the population exceeds the region or planet's carrying capacity--the number of people, other living organisms, or crops that can be supported without environmental degradation. Their suffering may include a shortage of food, limited access to healthcare and other public services, overcrowding, and high unemployment.

Causes of Overpopulation:

Overpopulation is largely attributed to trends such as people living longer and enjoying higher live birth rates. Overpopulation of specific locations can also result from migration. Oddly enough, the overpopulation of an area can occur without a net gain of population. It can result from a reduction in the carrying capacity of a region, such as reduced agricultural yield due to over farming or drought. Such conditions may lead to an out-migration.

Decline in the Death Rate: At the root of overpopulation is the difference between the overall birth rate and death rate in populations. If the number of children born each year equals the number of adults that die, then the population will stabilize. Talking about overpopulation shows that while there are many factors that can increase the death rate for short periods of time, the ones that increase the birth rate do so over a long period of time. The discovery of agriculture by our ancestors was one factor that provided them with the ability



to sustain their nutrition without hunting. This created the first imbalance between the two rates.

Better Medical Facilities: Following this came the industrial revolution. Technological advancement was perhaps the biggest reason why the balance has been permanently disturbed. Science was able to produce better means of producing food, which allowed families to feed more mouths. Medical science made many discoveries thanks to which they were able to defeat a whole range of diseases. Illnesses that had claimed thousands of lives till now were cured because of the invention of vaccines. Combining the increase in food supply with fewer means of mortality tipped the balance and became the starting point of overpopulation.

Technological Advancement in Fertility Treatment: With latest technological advancement and more discoveries in medical science, it has become possible for couple who are unable to conceive to undergo fertility treatment methods and have their own babies. Today there are effective medicines which can increase the chance of conception and lead to rise in birth rate. Moreover, due to modern techniques pregnancies today are far more safer.

Lack of Family Planning: Most developing nations have large number of people who are illiterate, live below the poverty line and have little or no knowledge about family planning. Getting their children married at an early age increase the chances of producing more kids. Those people are unable to understand the harmful effects of overpopulation and lack of quality education prompts them to avoid family planning measures.

Environmental Effects of Overpopulation:

The global environmental pollution is considered as international public health problems. Environmental pollutants have various adverse health effects from early life some of the most important harmful effects are perinatal disorders, infant mortality, respiratory disorders, allergy, malignancies, cardiovascular disorders, increase in stress oxidative, endothelial dysfunction, mental disorders, and various other harmful effects. Though, short-term effects of environmental pollutants are usually highlighted, wide range of hazards of air pollution from early life and their possible implication on chronic non-communicable diseases of adulthood should be underscored. Numerous studies have exposed that environmental particulate exposure has been linked to increased risk of morbidity and mortality from many diseases, organ disturbances, cancers, and other chronic diseases. Therefore it is time to take action and control the pollution. Otherwise, the waste products from



consumption, heating, agriculture, mining, manufacturing, transportation, and other human activities will degrade the environment.

The relationship between overpopulation and environmental impacts are often interrelated and complex. Below are some of the key sustainability challenges associated with overpopulation. For the sake of simplicity they are listed separately, but understand the connections between them are complicated, which makes them more challenging to manage.

A growing agricultural base to feed an expanding world population comes with its own complications. As the global population increases, more food is needed. Such measures may be met through more intensive farming, or through deforestation to create new farm lands, which in turn can have negative outcomes. Agriculture is responsible for about 80 percent of deforestation, worldwide. The yield of existing farmland can be increased through intensive farming to feed our rapidly growing population. This approach is characterized by reliance on mechanization, pesticides and chemical fertilizers. Such practices can be associated with soil erosion or depletion. According to the World Wildlife Fund, the land used and abandoned in the last 50 years globally may be equal to the amount of land used today. As well, the agricultural runoff of excess fertilizers is one of the main causes of eutrophication, which depletes waters from oxygen and results in significant negative impacts for marine life.

Deforestation in turn leads to a reduced ability to capture CO₂, thus exasperating the greenhouse gas problem. Deforestation is also strongly associated with loss of habitat and extinctions. Agriculture, as mentioned above, is responsible for about 80% of global deforestation. Another 14 percent is attributed to logging, 5 percent to firewood collection, and the balance resulting from other causes. Human population increase is related to all of these deforestation pressures. More people means we need more food, more wood products, and more firewood.

While there is plenty of water on the planet, it is very much a scarce resource. Only 2.5 percent of water resources are fresh water, and just a small fraction of that is available as unpolluted drinking water. One of the byproducts of population growth has been stress on freshwater supplies. "Water stressed" is defined as a case of demand exceeding the supply of suitable water available. According to one report, around 15 percent of the world's population lived in "water stressed" regions in 2016, the amount has been projected to reach 50 percent by 2030. Another commentator expects 2/3 of the world's population to be living with water shortages by 2025, which he attributes to population growth.

Human population growth and climate change have grown hand in hand as the use of fossil fuels has exploded to support industrialized societies. "More people means more demand for oil, gas, coal and other fuels mined or



drilled from below the Earth's surface that, when burned, spew enough carbon dioxide (CO₂) into the atmosphere to trap warm air inside like a greenhouse," notes Scientific American. Most fossil fuel consumption comes from developed countries. It is a sobering thought that most developing nations aspire to similar industrial economies as they experience economic growth, which further escalates CO₂ emissions into the atmosphere. Deforestation is another important component of greenhouse gas emissions. Globally, forests store more than twice the amount of carbon dioxide than is found in the atmosphere. As forests are cleared and burned, that CO₂ is released into the atmosphere, accounting for an estimated 25 percent of total greenhouse gas production.

At the other end of the spectrum, policies that encourage family planning, education, gender equity and other measures to help slow population growth will help reduce pressure on the planet. Take time to understand the issues, and support policies that will make a difference.

Review of Literature:

Review of related literature makes the investigator fully aware with the previous work that has been done. It also provides an opportunity of gaining insight into the method, measures, subject and approaches employed by the other researchers.

Hussain, (1998).Environmental pollution means pollution of the environment due to release of any substance from any process which are capable of causing harm to man and other living organisms supported by environment .

Kemp, (1998) Environmental pollution is "the contamination of the physical and biological components of the earth/atmosphere system to such an extent that normal environmental processes are adversely affected".

Khan, (1992)Rapid industrialization, urbanization and mechanized transport are introducing new and disturbing elements into the environment. A variety of factories, chemical mills, machines are adding to environmental problem and vehicles as well as Industrial smoke are causing wide spread respiratory diseases and discomfort. The devastation caused by atomic radiation and fallout is too well known in this connection .

Colls, (2002)Polluted air adversely affects the health of human beings, animals, plants, soils, damage buildings and other property. There are five main classes of pollutants: carbon monoxide, hydrocarbons, nitrogen oxides, sulphur oxides and particulates. When the concentration of the pollutants in the air becomes very high, many people had difficulty of breathing and as a result few deaths may occur. Air pollution contributes the incidence of Bronchitis, emphysema and other respiratory diseases. Among children air pollution has been shown to



be associated with the incidence of asthma, acute respiratory infections, allergies and other ailments .

Dawn,(2002). The other sources of pollution are sewerage water, industrial wastes and disposal and controlling emissions from factories, particularly those located in residential areas, pollution of subsoil drinking water because of seepage of industrial effluents and sullage and inadequate solid waste disposal. A village near Lahore hundreds of cases of deformity of bones was found and it was due to contaminated drinking water .

Objective of the Study:

The main objectives of the study is based on following headings:

- To Examine the effects the environmental pollution on Human Health.
- To find out the solution of environmental pollution.

Methodology

The sampling technique for the present study was stratified random sampling. The present study had been conducted in Darbhanga Town. The target population of present study was consisted of all the people living in Darbhanga Town . Sampling frame was prepared in order to draw the sample. A sample of 120 respondents were draw by using Simple random sampling technique. Moreover data was collected with the help of well structured interview schedule. One hundred and twenty households were interviewed. Chi-square test. Correlation and Gamma Statistics were applied to check the central tendency and to ascertain association between independent and dependent variables.

Table: 1
Association between the age of the respondents and problems created by water pollution

Age of the Respondents	Diseases from water pollution				Total
	Gastro	Diarrhea	Hepatitis	Above all	
20-30	8	11	5	0	24
31-50	8	15	20	32	75
51 & Above	6	2	4	9	21
Total	22	28	29	41	120

Chi-Square=24.613 d.f=6 P-value (Significance) =0.000 Gamma= 0.374 Correlation=0.259**

*** = Significant**

****= Highly Significant**

The table (01) represents the Association between the age of the respondents and problems created by water pollution and the value of Chi-Square shows the highly significant relationship between the variables. Moreover, the value of Gamma=0.374 and r=0.259 shows a strength of positive relationship between predictor and response variables.

Table: 2

Association between family type and different types of diseases which they were facing due to air pollution.

Type of Family	Type of pollution					Total
	Skin Disease	Lungs Disease	Throat infection	Eyes problems	Chest Infection	
Nuclear	9	2	7	7	4	29
Joint	9	20	23	19	20	91
Total	18	22	30	26	24	120

Chi-Square=10.139 d.f=4 P-value (Significance) =0.038* Gamma= 0.189 correlation=0.129

The table (02) shows the association between family types and health problems created by environmental pollution and the value of Chi-Square shows there is a significant relationship between family type and disease. Moreover, the value of Gamma=0.189 and r=0.129 shows a strength of positive relationship between dependent and independent variables.

Table: 3

Association between education of the respondents and industries as a caused of environmental pollution

Education of The Respondents	Industries caused of environmental pollution					Total
	Strongly Agree	Agree	No opinion	Disagree	Strongly Disagree	
Matric & intermediate	8	11	8	7	18	52
Graduation	7	8	15	10	3	43
Post Graduation	3	3	7	9	3	25
Total	18	22	30	26	24	120

Chi-Square=18.706 d.f=8 P-value (Significance) =0.017* Gamma= -0.071 Correlation= -0.052

The table (03) shows the Association between education of the respondents and industries as a caused of land pollution and the value of Chi-Square shows there is a significant relationship between education of the respondents and industries as a caused of environmental pollution. Moreover, the value of Gamma= -0.071

and $r = -0.052$ shows a strength of negative relationship between explanatory and explained variables.

Table: 4
Association between income of the respondents and huge traffic volume caused environmental pollution

Income of the Respondents	Increasing traffic volume Caused environmental pollution			Total
	To great Extent	To some Extent	Not at all	
Upto 10,000	3	21	0	24
10,001—20,000	12	30	33	75
20,001 or above	3	8	10	21
Total	18	59	43	120

Chi-square=19.945 d.f=4 P-value(Significance)=0.001 Gamma= 0.368 Correlation=0.212**

Data presented in table (04) reveals the association between income of the respondents and huge traffic volume caused environmental pollution and the value of chi-square shows the highly significant relationship between variables that points out the value of Gamma=0.368 and $r=0.212$ shows a strength of positive relationship between regressor and regressand.

Table 5:
Association between people opinion about problems created by noise pollution

Problems from noise Pollution	Opinion about problems From noise pollution		Total
	Agree	Disagree	
Frustration	76	11	87
Restlessness	0	33	33
Total	76	44	120

Chi-square= 78.621 d.f=1 P-value (Significance) =0.000 Gamma= 1.00 correlation=0.809**

The table (05) shows the Association between people opinion about problems created by noise pollution and the value of Chi-Square shows there is a highly significant relationship between education of the respondents and industries as a caused of environmental pollution. Moreover, the value of Gamma= 1.00 and $r = 0.809$ shows a strength of strong positive relationship between explanatory and explained variables.



Solutions to Overpopulation:

Better Education: One of the first measures is to implement policies reflecting social change. Educating the masses helps them understand the need to have one or two children at the most. Similarly, education plays a vital role in understanding latest technologies like Cloud Desktop Online that are making huge waves in the world of computing. Families that are facing a hard life and choose to have four or five children should be discouraged. Family planning and efficient birth control can help in women making their own reproductive choices. Open dialogue on abortion and voluntary sterilization should be seen when talking about overpopulation.

Making People Aware of Family Planning: As population of this world is growing at a rapid pace, raising awareness among people regarding family planning and letting them know about serious after effects of overpopulation can help curb population growth. One of the best way is to let them know about various safe sex techniques and contraceptives methods available to avoid any unwanted pregnancy.

Tax Benefits or Concessions: Government of various countries might have to come with various policies related to tax exemptions to curb overpopulation. One of them might be to waive of certain part of income tax or lowering rates of income tax for those married couples who have single or two children. As we humans are more inclined towards money, this may produce some positive results.

Knowledge of Sex Education: Imparting sex education to young kids at elementary level should be must. Most parents feel shy in discussing such things with their kids which result in their children going out and look out for such information on internet or discuss it with their peers. Mostly, the information is incomplete which results in sexually active teenagers unaware of contraceptives and embarrassed to seek information about same. It is therefore important for parents and teachers to shed their old inhibitions and make their kids or students aware of solid sex education.

Conclusion:

People are facing many diseases due to pollution like Hepatitis, Lung diseases, Throat diseases, Gastro, Diarrhea, Skin diseases and many other types of health infections. Pollution is an exceptionally important concern because of pollutions' harmful effects on the person's health, on climate and on the environment. Clean and healthy atmosphere is essential for good health of the



people. People cannot inhale in polluted air. Polluted water is also a major problem of the people in studied areas. Residents of that areas said that the sanitation and drainage system is improper due to which they are suffering from many problems. Everyone should therefore be personally responsible for the upkeep of the environment through cooperation and active participation in making the atmosphere pollution free.

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**BANK TRANSACTION TAX: A SINGLE TAX IDEA
AN INDIAN APPROACH**

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Abstract

The need for a new tax system has been one of the most intensely debated topics on India's economic reforms measures. A country's tax system must be able to adapt to the dynamics of the modern economic world. Taxation falls on ever changing economic bases, and not on consolidated juridical facts. Tax reform therefore should allow for enough flexibility and realism which must suit and adjust to its social, economic, political and cultural characteristics. Economists and Tax Reformers in a country like India should not be orthodox to old tax models which have surpassed their useful lives.

Though there is also considerable diversity in what these taxes are called, including bank debit taxes, bank account debit taxes and financial transaction taxes, this article intended to introduce Single Tax on Bank Transactions (i.e. Bank Transactions Tax) which will replace the current paper-ridden (declaratory) taxes by a single paperless (non-declaratory) bank transaction. This paper will critically analyze the opportunities and challenges of this tax system in India and also its effect on various segments of economy.

Keywords:-Single Tax System, Bank Transaction Tax, Bank Debit Tax, Financial Transactions Tax, etc.

Introduction

The conventional tax paradigm faces a serious crisis due to its incapacity to provide explanations, diagnostics, justifications, and solutions to new facts and circumstances that are rising on the contemporary economic scenario. The traditional mechanism of tax collection are based on the notion that the taxpayer is a potential defrauder, until proven otherwise, and this has led to the creation of a significant number of control, inspection, auditing and surveillance systems that turn out to be expensive, complex, and highly bureaucratic, but nonetheless, incapable of preventing tax evasion. The major challenges faced by the conventional tax paradigm are the growing incapacity of nation-states to deal with problems created by "tax havens", by increasingly complex means for laundering money, and by the uncontrolled flows of foreign funds between companies belonging to a single global conglomerate (transfer-prices).

So, far as the Indian taxation structure is concerned, it faces with two basic serious issues; the first is the existence of the parallel or black economy-there is high level of unaccounted GDP which by definition does not form part of the tax base and the second is India's rising real economy due to globalization, financial inclusion and improved financial technology.



In the complex tax machinery in India tax reform is the need of an hour. The proposed introduction of GST, efforts to reduce litigation in direct taxes and streamline administration are examples of measures working in this direction.

In the complex tax machinery in India tax reform is the need of an hour. The proposed introduction of GST, efforts to reduce litigation in direct taxes and streamline administration are examples of measures working in this direction. However, the existing paradigm of tax policy may not be enough to correct the underlying problems of a globalised economy which is financially integrated to the world financial system. So, there is a need for a paradigm shift of tax policy. This is the context in which Feige, Edgar L (2000) and Cintra, Marcos (2009) proposed an alternative Single Tax system called BTT (Bank Transaction Tax).

Objectives of the Study

- To study the concept and application of Bank Transaction Tax as part of Tax Structure Reform.
- To study the Issues and Challenges of implementation of BTT in Indian scenario.
- To Study the impact of BTT on economy as a whole.

Literature Review

Lastrapes and Selgin (1997) investigate the impact of a two-cent check tax on the U.S. economy during the 1930s. They estimate the impact of the tax on the currency-deposit ratio and the money stock using a vector autoregressive model and monthly data from August 1921 to December 1936. They show that the tax led to significant disintermediation. As a result, the monetary contraction in the U.S. during the 1930s is estimated to have been 15 percent higher than it would have been without the tax. The authors also argue that policymakers were aware of the likely adverse effect of the tax, and yet deliberately chose to overlook it in order to raise revenue. They present the two-cent check tax as a typical example of the Depression era policies that disregarded the impact of fiscal measures on monetary and financial outcomes.

Coelho, Ebrill and Summers (2001) argue that BTTs have been successful in raising revenue in the short term. They also document abundant anecdotal evidence that these taxes have resulted in financial disintermediation. The authors argue that BTTs should be avoided, unless there are significant fiscal needs that cannot be met by more appropriate tax instruments.

Arbeláez, Burman and Zuluaga (2002) use panel data analysis to estimate the effect of a BTT on interest margins and profitability of 43 financial institutions in Colombia during 1995-2001. They find that the BTT increased the cost of credit and led to significant disintermediation. As a result, profits of financial institutions declined in the short-term by more than the amount of revenue raised by the government. The authors recommend abolishing the tax.

Albuquerque (2003) argues that a BTT increases the cost of government borrowing in Brazil. He calculates the inflection point of a Laffer-type curve adjusted for the higher cost of government borrowing and argues that an increase of the actual average tax rate



during the period (0.34 percent) to the estimated maximum rate (0.62 percent) would have yielded only about 16 percent of GNP more in revenue in 2000. The author also estimates that the losses for the actual and the calculated maximum tax rate are 21.5 percent and 57.8 percent of revenue (net of estimated higher government borrowing costs), respectively. In light of this evidence, he advocates against the use of this tax.

Kirilenko and Perry (2004) estimate the degree of disintermediation (a permanent erosion of the tax base) resulting from the introduction of a BTT. They construct monthly series for real BTT revenue (nominal revenue adjusted for inflation and changes in the tax rate) for six countries (Argentina, Brazil, Colombia, Ecuador, Peru and Venezuela) assuming that, during the first month after the introduction of the tax, there is no change in the behavior of providers and users of banking services. This assumption allows them to use the decline in revenue from its starting value (first month of the tax) as an estimate of financial disintermediation. The authors show that on average the introduction of a BTT results in disintermediation of between 4 and 44 cents for every dollar in revenue. According to their estimation, financial disintermediation has reached maximum values of 46 cents in Argentina, 58 cents in Brazil, 64 cents in Colombia, 48 cents in Ecuador, 66 cents in Peru, and 49 cents in Venezuela. These numbers are equivalent to a loss of over 0.5 percent of GDP to disintermediation. The authors also find that disintermediation effects tend to cumulate as the taxes remain in place. While Kirilenko and Perry (2004) base their conclusions on some empirical evidence, their country-by-country calculations lack the persuasiveness of a full-fledged panel study.

Bank Transaction Taxes: Meaning and Explanation

Bank Transaction Taxes (BTTs) refers to a tax that is charged on debit and credit entries of the books of accounts of a bank. As such, BTT is charged on all bank transactions regardless of whether they are debit or credit transactions. It can be regarded as a single tax system that can be used instead of the multiple taxes that exist in most jurisdictions. The introduction of a banking transaction tax leads to the transfer of the base to banking transactions. Economic entities are only taxed when they make transactions via banks. For example, the economic entity may be charged a 2% tax of the value of the transaction. Economic agents do not have to file tax returns since their tax details can be easily collected with every bank transaction.

A typical BTT works as follows. Suppose that the tax is levied at the rate of 2 percent and you write a cheque for ₹100 to pay for your groceries. When the grocer takes your cheque to a bank, the bank charges your account ₹100 and 2 percent: ₹100 goes to the grocer and 2 percent goes to the government. In this simple example, the bank is assumed simply to shift the entire tax burden to the account holder, while the government raises 2 percent for every ₹100 worth of taxable bank transactions. In practice, the amount of government revenue depends on the behavior of individuals and firms that use taxable banking services, as well as the behavior of financial intermediaries.

For BTT to be successful there must be two conditions. Firstly, the banking sector in the jurisdiction that intends to implement the taxation policy should be highly digitized. Secondly, the paper currency should also be replaced with digital currency. Some of the



digital currency includes electronic credit and debit cards, cheques, email and internet transactions and mobile money.

History of Bank Transaction Taxes

Historically, tax on banking transactions was implemented on an experimental basis. In 1898, the U.S. government introduced a two-cent tax on bank cheques to finance the Spanish-American war. It was a little known fact that a century later many Latin American countries would use similar taxes to fight their own fiscal battles. Since 1976, taxes on bank transactions have been introduced repeatedly in Argentina, Brazil, Colombia, Ecuador, Peru and Venezuela. In all cases, with the exception of Brazil, bank transaction tax was introduced at a time of, and in response to, general economic crisis, as an emergency means of raising government revenue. In each case the tax was introduced on a temporary basis, although in some cases it was subsequently extended. Tax rates have ranged between 0.2 and 2.0 percent, varying widely both across countries and over time. Moreover, BTTs have not been levied continuously in most countries. Although introduced as an additional source of the revenue, there is considerable variation across countries in the design of taxes on bank transactions.

As regards the base of the taxes, they are generally imposed upon debits to (withdrawal from) chequing, savings and term accounts in banks and other financial institutions, and loan withdrawal (e.g., this is the case in Brazil and Colombia in addition, the Colombian tax is imposed on credits of bank interest to accounts and on repos). In Ecuador, the base of the tax is somewhat different, with the tax being imposed not only on check cashing, but notably, also on financial institution credits to checking, savings, term, loan and other accounts, as well as on remittances abroad and on payments abroad by exports and imports. As a result in that case, both deposits to and withdrawals from the same accounts would be subject to the tax.

The taxes in Brazil and Colombia have produced revenues in the range of 0.6 to 1.33 percent of GDP for ad valorem tax rates in the range of 0.2 to 0.34 percent. This confirms that these taxes do serve, at least in the short term, their intended function. The performance of the tax in Ecuador in its first year was exceptionally strong. However, it must be noted that the tax had a broader base, applying to debits and credits, and that part of the gross revenues were creditable against other taxes. The taxes imposed in Argentina in 1988 and especially in Peru were significantly less productive as gauged by the ratio of revenues as a percent of GDP to the average statutory rate. There is also considerable diversity in what these taxes are called, including bank debit taxes, bank account debit taxes and financial transaction taxes. However use of the term bank transaction taxes (BTTs) reflects accurately the fact that in several countries both debit and credit operations are liable to taxation. The table 1.1 gives the experience of the different countries with the BTT.



Table 1.1: Tax Rate and Revenue (as % age of GDP) from BTT in Different Countries

Country and Year	Tax Rate	Gross Revenue/GDP	Revenue Productivity
Argentina			
1989	0.7	0.66	0.94
1990	0.3	0.3	1.00
1991	1.05	0.91	0.87
1992	0.6	0.29	0.48
2001	0.6	1.46	2.43
Brazil			
1994	0.25	0.06	0.24
1997	0.2	0.8	4.00
1998	0.2	0.9	4.50
1999	0.22	0.83	3.77
2000	0.34	1.33	3.91
2001	0.36	1.45	4.03
Colombia			
1999	0.2	0.73	3.65
2000	0.2	0.6	3.00
2001	0.3		
Ecuador			
1999	1	3.5	3.50
2000	0.8	2.33	2.91
Peru			
1990	1.41	0.59	0.42
1991	0.80	0.46	0.57
Venezuela			
1994	0.75	1.3	1.73
1999-2000	0.5	1.12	2.24

Source: Coelho, Ebril, and Summers (2001).

Note: Revenue productivity is defined as the revenue to GDP normalized to a tax rate of 1 percent. [Gross Revenue to GDP/Tax Rate ×1].

Bank Transaction Tax and India: As Assessment.

Background of BTT in India

In India Banking Cash Transaction Tax (BCTT) was introduced during 2005-2009. It levied 0.1 percent on cash withdrawals of more than ₹50,000 (individuals) and ₹ 1,00,000 for others in a single day from non-savings bank account maintained with any scheduled bank. However the proposal was controversial and faced much criticism. The then UPA-I government was forced to withdraw such tax with effect from 1 April 2009. The proposal of single tax again rebirth after several years and exaggerated when BJP’s PM Candidate Narendra Modi said, “The present taxation system is a burden on the common man. There is a need to introduce a new system.” Actually, he was



referring to single tax system which was proposed by a Pune-based think-tank called Arthakranti, nothing but the Bank Transaction Tax (BTT).

In the view of economist Yamaji Malkar imposition of Bank Transaction Tax (BTT) will be an effective way to generate more revenue for government. According to Malkar, real time gross settlement (RTGS) transaction in the country is estimated at ₹ 1.75 lakh crore per month and ₹2,000 lakh crore per annum. If a 2% BTT is levied on even half the annual figure, the government can easily generate ₹20 lakh crore as revenue annually, he said. This tax system will meet half the revenue requirements estimated to be around ₹40 lakh crore. In addition to this, the government can boost the revenue by not touching the current import and export taxes,

BTT Proposal in India

The main elements of the Arthakranti proposal are the following:

- Withdrawal of Existing Tax System Completely (except Customs/Import Duties - Customs duties perform an important role of ensuring a genuine level playing field in a globalized world).
- Every Transaction routed through a bank will attract a certain deduction in appropriate percentage as Bank Transaction Tax, i.e. single point tax deduction at source @2% from amount credited in the bank account every time in form of BTT. After that no need to pay Income Tax. This deducted amount will be credited to different Government Levels like Central, State and Local (as say 0.7%, 0.6 % and 0.35% respectively) and Bank will also have its share in this deducted amount (say 0.35%) as the Bank has a key role to perform.
- Withdrawal of High Denomination Currency, i.e. currency greater than ₹50. According to a survey 90% people in India spends on an average only ₹20/day. Therefore, if this statistics is to be true, then ₹50 as the highest currency is more than enough. This will ultimately erode black money as it will be difficult to carry amounts in huge amounts such as ₹1cr./2cr.
- Cash Transaction will not attract any tax. And he also proposed to place a limit on cash transactions, i.e. ₹2,000. If amount is greater than ₹2,000, then it should be compulsorily routed through bank. And also according to him cash transactions at high scale is not feasible because the highest denominations currency is ₹50.
- Government should make legal provisions to restrict cash withdrawal, i.e; maximum amount of withdrawal should be ₹2000/day. Indirectly he proposed to make India a cashless economy, i.e. making more use of plastic cards, cheques, Demand Drafts, etc.

The proposal can be summarized as that everyone has to use credit and debit cards for transactions of higher value and it would be taxed at 2%. The receiving party would be taxed and the revenue would be sent to the government with the banking intermediary keeping some proportion. To eliminate black money, high denomination notes would be eliminated.

Government initiatives towards introducing BTT

The BTT will be made to happen in country like India only through promoting digital economy and creating banking awareness among the people. However, with great sagacity, this government has been working towards it and there is a pattern to it. The



following are the some of the sequence of events which will facilitate the introduction of Bank Transaction Tax.

1. Opening of Jandhan accounts:

At present count, around 26 crore or 260 million accounts have been opened. To facilitate ease of operation, the government has allowed these accounts to be opened with zero balance and with no charges. Aadhar cards are being used for identification purposes.

2. Direct Benefit Transfer of subsidies:

Many subsidies are going directly to beneficiaries' accounts. This appears to be a sweetener to get everyone into the banking system.

3. Tax amnesty schemes with a fairly liberal deadline:

This was to make people get into the habit of paying taxes on income not declared in their returns or those who had not submitted their returns.

4. Demonetisation of high value rupee notes:

This is resulting in people paying their undeclared income into their bank accounts and being forced to draw their needs from their accounts. The collateral benefit is that people who had earned their money through illegal means would also be forced to declare their income and explain how it was obtained or would simply dispose of it by burning or shredding it.

5. Digitized Payment:

After demonetization, there has been a shortage of the new high denomination notes. The people have adapted to the change by using mobile-linked payment systems that allow them to pay each other even small amounts.

Critical Analysis of BTT

Issues of Bank Transaction Tax

Introduction of BTT will bring the structural change in the prevailing tax regime moving from the taxation of value added in the economy to a tax on transaction value. Clearly, transaction values would be considerably higher than value added corresponding to any transaction and this would allow for the levy of the tax at a lower rate as compared to a tax on value added. But, due to the cascading effect of taxes countries across the world choose to move from taxes on value of output to taxes on value added. Thus, it is argued that BTT would lead to distortions in economic decision making by for instance encouraging vertical integration which affect our global competitiveness. The proposed tax has so many issues. Some of them are discussed below.

1. Cascading Effect

According to NIPFP (National Institute of Public Finance and Policy),unlike the goods and services tax(GST),BTT is a cascading tax, where the tax rate can build from 2 percent to over 6 percent in some cases.

The NIPFP's evaluation reveals that a BTT of 2 percent would increase the effective tax liability considerably. It estimates that the effective tax rates will come to around 14.3 percent.



The study also finds that the cascading tax would come out to be 43 percent of the total tax incidence and 75 percent of the direct tax incidence. This means for every 1 percent tax on turnover, there will be an additional 0.75 percent tax through cascading.

2. Distortions in saving and investment decisions

Arthakranti's Banking Transaction Tax does not propose any exemptions from the tax. In other words, all transactions including inter-personal transfers for non-economic reasons too are to be subject to a tax. This means that all savings which are routed into any instrument whether it is a physical instrument or a financial instrument would be subject to tax. For example, an individual who saves ₹1000 and invests in a bond. At the time of investment, the value of the investment would be ₹980 because of the BTT. In subsequent years, the effective rate of return on the investment would be lower than the stated rate since there would be a tax on the interest income earned from the bond. In other words, the return to investment would be lower and to get the same amount of return, the asset would need to be held for a much longer period. On proposing the efficacy of the Banking Transaction Tax, Cintra (2009) discuss these difficulties and therefore suggest that investment should not be subject to tax. In countries like Brazil, ring-fenced accounts were created where movement from one asset to another did not attract a tax – the tax was only payable if it left the set of investment instruments

3. Emergence of Currency Alternatives

The proposed tax system emphasizes that all the financial transactions must route through the banking system, so that the parallel economy could be uprooted. Therefore, some attempts will be initiated to evade or avoid the tax. One such mechanism would be through the use of cash as a basis for transactions through financial disintermediation or through the evolution of new alternative payment methods that might not be covered by the definition of bank or banking transactions. Within the global financial system, there are a number of innovations in instruments to be used as alternative to money. There are around ten alternatives to currencies, like Bitcoins, Litecoins, Ithaca hours, Brixton Pounds, Berkshares, Equal Dollar, etc. which are operating out of the banking system. These alternative currencies present challenges for regulation and policy in the areas of consumer protection, financial crime and taxation and benefits. Once again unless transactions through these alternative currencies are designated as banking transactions, they too would slip out of the BTT network.

Challenges of Implementation of BTT

- Efforts on Financial Inclusion expansion of banking network should precede BTT. Under BTT, the states with massive amount of bank branches are about to gain, whereas, those backward states where banking is still at its nascent stage is bound to lose a major part of the revenue which they collected as taxes. For example, Chandigarh has a bank branch per 3000 adults, on the other hand, Manipur has a bank branch per 33,000 citizens. The latter is expected to lose revenue in unprecedented manner if the mainstream process of taxation is abolished.
- The proposed system requires motivating people to avoid paper currency and use more cheques, debit cards, net banking etc. which can restrict cash transactions to the large extent.

- When Government migrates to BTT as sole source of revenue, Cyer Security of banking system, as a whole becomes vital. This point must be considered by the Government in the light of switching to BTT as the only source of revenue.
- In the proposed regime, the role of Enforcement Directorate and Financial Intelligence Unit will become vital because any slippage of transactions will cause loss of revenue to Government.

Practical Implications of BTT

Impact of BTT on Business at Various Profit Level

The figure below shows the impact of bank transaction tax on business at various profit level. BTT is significantly different from Income Tax. BTT as proposed by the Arthakranti will be charged on the value of transactions. However, the introduction of BTT would have a negative impact on companies that have low profit margins. Admittedly, the profit margin varies from one industry to another. As per the Table-2, the firms that have less profit margin would be subjected to a higher tax rate than firm that have higher profit margin. For instance, An organisation earning ₹.500 at 5% profit margin has to pay ₹.200 in BTT at 40% effective rate of tax. On the otherhand, organisation earning ₹.7000 at 70% profit margin also contributes the same ₹.200 at 2.85% effective rate of tax.

Therefore, the introduction of BTT would have a negative impact on firms and products that have low profit margins. This may necessitate the firms to shift to other products that have higher profit margins which would affect the performance of the industry.

Table 2

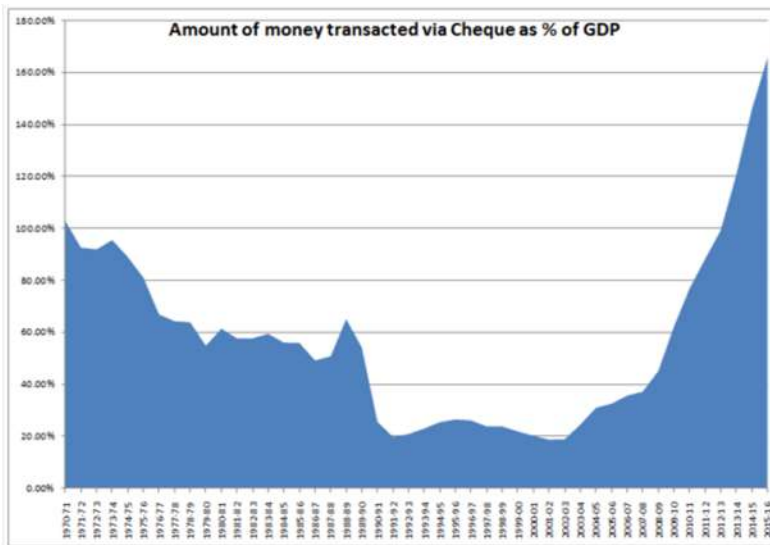
A	B	C	D	E	F	G	H	I	J
Per Unit Sales	Per Unit Cost	No. of Trans.	Total Revenue (A * C)	Total Cost (B * C)	Profit (D - E)	Profit % (F / D * 100)	BTT @ 2% (D * 0.02)	BTT to Profit % (Effective Rate of Tax = H / F * 100)	Profit of Net BTT (F - H) / D * 100
100	95	100	10,000	9500	500	5%	200	40%	3%
100	94	100	10000	9400	600	6%	200	33%	4%
100	93	100	10000	9300	700	7%	200	29%	5%
100	92	100	10000	9200	800	8%	200	25%	6%
100	91	100	10000	9100	900	9%	200	22%	7%
100	90	100	10000	9000	1000	10%	200	20%	8%
100	85	100	10000	8500	1500	15%	200	13%	13%
100	80	100	10000	8000	2000	20%	200	10%	18%
100	75	100	10000	7500	2500	25%	200	8%	23%
100	70	100	10000	7000	3000	30%	200	7%	28%
100	65	100	10000	6500	3500	35%	200	6%	33%
100	60	100	10000	6000	4000	40%	200	5%	38%
100	55	100	10000	5500	4500	45%	200	4.44%	43%
100	50	100	10000	5000	5000	50%	200	4%	48%
100	45	100	10000	4500	5500	55%	200	3.64%	53%
100	40	100	10000	4000	6000	60%	200	3.33%	58%
100	35	100	10000	3500	6500	65%	200	3.07	63%
100	30	100	10000	3000	7000	70%	200	2.85%	68%

(Source: Self Composed)

Impact of BTT on Banking Transactions and Credits

Before the 2014 elections, a tax research think tank suggested that taxing every transaction at 2% would yield anywhere between Rs 14,00,000 crore to Rs 40,00,000 crore which is way higher than Centre’s total tax revenue which was about Rs 10,38,037 crore in the year 20013 – 14. But this is nearly impossible because this will kill online or banking transactions.

Chart 1
Amount of transactions that are carried out by cheque alone (as% of GDP).



(Source:www.rbi.org.in)

RTGS, for instance, is much higher. Nearly 100 lakh crore rupees is transferred each month through RTGS (which is about 70% of GDP, each month). Taxing each such transaction at 2% will just kill the entire transaction process. One can’t transfer money to a mutual fund if you had to pay 2% tax to the government each time. Imagine a company that has to pay and receive money constantly and will “rotate” the working capital around a few times a month – they will simply have to shut shop.

Finally consider the impact on credit, especially short-term. You pay back a loan, and you will pay 2% more each time you return money. Overdrafts, where you take money and return it in very short periods, will have a 4% higher cost. With lower credit and investment, the economy gets hit hard.

Impact of Bank Transaction Tax on the performance Companies

What will be the impact of the bank transaction tax on our economy in general is a question most of us have on our minds. To start with I have tried calculating bank transaction tax on India’s leading companies. I have selected companies randomly; data used for the calculation is taken from MoneyControl.com.

Assumptions for calculation:

- BTT rate is assumed at 2%.
- All data is for Fiscal year ended 31st March 2018.Opening balance of Sundry Debtors is taken from 31st March 2017.

Table 3

A	B	C	D	E	F	G	H	I
Company Name	Total Income	Profit Before Tax	Sundry Debtors Closing Balance	Sundry Debtors Opening Balance	Gross Bank Receipt (B+E-D)	BTT @ 2% on Receipt (F*0.2)	Profit before Tax to Total Income (C/B*100)	Effective Rate of Tax on Profit (G/C*100)
Dr.Reddys Labs	8676.30	1753.20	2963.90	1943.50	7655.90	153.118	20%	8.73%
Cairn India	9200.98	6745.10	1169.54	0.47	8031.91	160.6382	73%	2.38%
Cipla	8722.30	2011.86	1645.22	1519.31	8596.39	171.9278	23%	8.55%
Oil India	11456.32	5255.86	902.67	1051.81	11605.46	232.1092	46%	4.42%
HCL Tech	12982.37	4544.74	2709.21	1992.42	12265.58	245.3116	35%	5.40%
PowerGrid Corp.	13328.74	5620.16	1434.09	1497.49	13392.14	267.8428	42%	4.77%
Jindal Steel	15262.18	2228.50	1426.13	905.06	14741.11	294.8222	15%	13.23%
Reliance Infra	15823.19	2143.23	3249.25	4565.59	17139.53	342.7906	14%	15.99%
Alok Industries	22023.32	1399.90	5025.96	2152.15	19149.51	282.9902	6%	27.36%
Hindalco	26905.07	2046.63	1515.04	1427.45	26817.48	536.3496	8%	26.21%
Petronet LNG	31649.15	1720.28	1689.80	1285.89	31245.24	624.9048	5%	36.33%
Wipro	34570.00	7205.10	8499.40	7967.00	34037.60	680.752	21%	9.45%
JSW Steel	35557.94	2504.12	1862.20	1362.06	35057.80	701.156	7%	28.00%
Infosys	39063.00	12357.00	6365.00	5404.00	38102.00	762.04	32%	6.17%
M & M	41168.26	4447.09	2208.35	1988.36	40948.27	818.9654	11%	18.42%
Maruti Suzuki	44376.90	2991.00	1423.70	937.60	43890.80	877.816	7%	29.35%

You may observe that organisation with lowest profit margin ends up paying more tax than organisation with highest profit. Let’s compare tax payable by Cipla and Hindalco. Hindalco made 34.77 crore more profit than Cipla, but under the BTT regime Hindalco has to pay 364.042 crores more tax than Cipla. The difference is due to profit before tax to total revenue ratio, Higher the profit margin a company manages lesser the tax it contributes. Impact of Bank transaction tax on whole supply chain cycle and organisation behaviour is matter of debate.



Findings of the Study

From the above study and analysis, it is found that the proposal of implementation of BTT in India given by Arthakranti is a brilliant idea of uprooting the blackmoney market and terrorists funding. But due the regressive nature of BTT it will badly affect the poor people putting additional tax burden on them. It is also evident that, in country like India implementation of single tax system is a nightmare. It's benefit will go to the common mass, provided we completely migrate to cashless transactions and making our banking system vibrant and reachable to every single citizen.

Conclusion and Scope for further Study

It is concluded that BTT violates the principles of 'Cannon of Equity'. "Every person should have to pay the taxes to the government proportional to his ability." The salaried employees, who cannot avoid bank credits will be hit by the BTT, others will have opportunities to evade. Even government welfare payments to poor, for example, old age pension, NREGA wages, etc., will be potentially taxed under the BTT as the proposal aims to tax all credits in a bank account.

Bank transaction tax is neither Income tax nor consumption tax. It assumes that person's banking transactions determines his ability to pay. This might be true but not always. A BTT tax also ignores indirect taxation on "demerit goods", such as, alcohol, tobacco, fuels, and other socially costly activities, such as pollution (ecological taxes) is considered extremely important to regulate these activities and/or consumption of these goods. A pure BTT regime does not envisage these taxes; and, if we do have specific taxes on these demerit goods, we begin to move away from a single BTT, and towards a multi-tax situation, similar to what we have now. So, if at all we have a BTT, it will have to be supplemented by excises on ATF, plus wealth tax at central level, plus property taxes, plus other regulatory taxes, and of course, customs duties.

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EVALUATION OF EMPLOYEE WELFARE MEASURES : AN EMPIRICAL RESEARCH IN ITC LTD., AGRI BUSINESS DIVISION-ILTD., CHIRALA

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ABSTRACT

Good health is good business. Improving the health and well-being of our employee's offers a Mutual benefit everywhere. Representatives profit by better help for their well being. Companies benefit from less absence and improved productivity. The thought of employee welfare is a broadest concept. The basic reason of employee welfare is to enrich the life of employees and to keep them cheerful and led. Welfare measures may be both Intra Mural and Extra Mural; laws require the employer to extend certain benefits to employees in addition to wages or salaries. This study aims to find out the employee satisfaction towards the welfare measures provided by the ITC- ABD ILTD CHIRALA and to develop a model for examine the levels of employee satisfaction towards the welfare measures as well as to analyse the affect of demographic variables on their opinion towards the welfare facilities. The study has used an exploratory research in order to frame its objectives. Further a cross sectional study of descriptive research is used for conducting an empirical study with a Populations of 384 are identified where the research is conducted on a sample of 183 employees identified through proportionate stratified random sampling technique. While meeting the first objective, one sample t-test is used. For meeting the second objective, discriminate analysis is used. In addition, to analyze the effects of demographic variables on their opinion towards the welfare facilities is tested using Correlation and Regression. The entire analysis is accomplished using MS Excel 2007 and SPSS 22 version. Overall analysis of the study states that 81.4% employees are satisfied by the amenities provided by the organisation. The most interesting findings are, Age and Experience are the most significant contributors towards the satisfaction levels of an employee. Surprisingly Monthly salary is a poor predictor of employee satisfaction. The research suggested that management should provide housing facilities to all the levels of an employee which shows them equality as well as the organisation need to enhance the working conditions like drinking water, canteen facility and transport facility and so on which helps in improving the productivity.

Keywords: Welfare Measures, Employee Satisfaction, Employee Efficiency etc.,

1. INTRODUCTION

Employee welfare is the "providing facilities and amenities to employee of an organization so that they can lead a better standard of living".

Labour welfare has vital significance for any nation both from national and global perspective; the flourishing of the country relies upon the correct arrangements of industry work. If a country takes at least cooperation of labor for production purpose it may lead to distortion. It is important to make sure about the collaboration of representative power so as to increase the production and to acquire higher profits. The



cooperation of employee force is conceivable just when they are completely happy with their manager and the working conditions at work.

These schemes can be classified into two categories viz., Intra Mural and Extra Mural. The Intra Mural plans are those plans that are necessary to give by an association as consistence to the laws administering representative wellbeing and security, these include: container offices, drinking water, appropriate and adequate lighting , offices for sitting , changing rooms , medical aid apparatuses, restrooms and urinals , washing places, spittoons, rest rooms. Extra Mural plans may include: individual human services, flexi-time, worker help programs, provocation arrangement, representative referral conspire, medi-guarantee protection plot, harassment policy. The Extra Mural plans contrast from association to association and from industry to industry. Wellbeing, security and welfare measures are the proportions of advancing the effectiveness of representative. The different welfare amenities gave by the business will have prompt effect on the wellbeing, physical and mental proficiency readiness, confidence and generally effectiveness of the laborer and in this way adding to the higher efficiency. By these inputs the current work attempts to study the satisfaction level of employees towards welfare facilities in ITC-ABD ILTD CHIRALA.

2. NEED OF THE STUDY

Welfare in the broader sense means well-being of the employee. Welfare measures are the steps taken by the administration to create a healthy environment in which the workers feel satisfied both physically and mentally and at last produce best outcomes by investing their most extreme amounts of energy.

To know at what extent the welfare measures provided by CHIRALA ITC ABD ILTD towards its employees.

- To know the degree of familiarity with employees about the various welfare measures provided to them.
- To study how the welfare facilities provided helps in increasing the productivity and job satisfaction.
- To know about how welfare aspects will motivate the employee's towards work.
- To discover how welfare assistance services provided to employees help organization to build a stable work force by reducing absenteeism and labor turnover.
- To recognize the importance of welfare measures for unit employees to achieve the organizational goals.

3. REVIEW OF LITERATURE

Review of literature is relating to welfare amenities provided by the organisation to their employees and its impact on the performance of an employee, while reviewing literatures several research studies were identified across the country. These researches includes

1. (Sabarirajan, 2010) This study reveals the results that 27% of the employees are highly satisfied with their welfare measures. 39 % of the employees are average with their welfare measures. 16% of them are in highly dissatisfied level. It suggest



to focus more on Welfare measures which helps in improving the motivation levels of an employees as well as improve the productivity of the organization.

2. (P.Swapna, 2011). The study found that employees are satisfied with welfare measures such as recreational, medical, educational, housing, transportation, sanitation, safety. The employees are also satisfied towards statutory welfare measures such as Workmen Compensation, ESI, Sickness, P.F and Maternity benefits. These measures have an impact on the quality of work life and also on the smooth relationship between employer and employee which leads towards the attainment of organization goals.
3. (Gupta, 2012) The study reveals that interaction plays a crucial role in increasing employee satisfaction. It is reported that satisfied employees are have high morale. And also stated that Welfare measures and work experience are not necessarily relates to satisfaction. Therefore it is suggested that company should provide for sufficient welfare measures but not be charged by increasing part of the cost in greediness to gain the competitive edge and declare itself as most desired company. Other factors such as communication, motivation, empowerment etc should be taken into consideration for raising the level of employee satisfaction.
4. (K.T, 2013) It is found that most of the respondents are aware about the legislative and non - legislative employee welfare facilities provided at the Company, welfare facilities like medical, canteen, working environment, safety measures etc., are provided by the company. And most of the employees are satisfied with the welfare facilities adopted by the company towards the employee's welfare.
5. (Agarwal, 2014) The employers were having the opinion of providing only the wages and salary to the workers as per the agreement of service. But with the passage of time workers started looking for something in addition to salary and the employers also felt the need of providing the additional benefits in the form of 'employee welfare facilities.
6. (Almeida, 2015) To improve the level of the job satisfaction of employees more than the current position, researcher suggests some recommendations. Management should make awareness programmes for all existing welfare schemes, from the study on labour welfare measures certain points have been identified that some employees are satisfied and some are not satisfied with the present welfare measures. Therefore the management can discuss with employees to improve the welfare schemes, urgent provisions should be made regarding the rewards for results, safety and canteen facilities as general wellbeing of the workers important, welfare refers to the physical, mental, moral, and emotional wellbeing of an individual.
7. (Madusanka, 2016) The finding of the study revealed that there is a significant positive relationship between the employee welfare facilities and the job satisfaction. The result of the Pearson correlation between the two variables of non-executive was 0.593 which was positive. Also, all the hypotheses were determined on the analysis data. It is concluded that the welfare facilities are positively correlated with high level of job satisfaction of team leader employees in Off Road Tyre Manufacturing Industry. Further this study supported the view that the welfare facilities help to increase the standard of living of team leader employees.



8. (Madusanka, 2016)The employees are satisfied with the health and safety facilities provided by BHEL as it is agreed by 84% of the employees.80% of employees are satisfied by quarters provided by company. Below are the suggestions for effectiveness of the employee welfare measures. Company should be more committed in promoting welfare facilities as it creates more productivity which in turns benefits to the company. Health checkup, employee counseling, various health camps, hospitalization facilities should be better improved by conducting the health camps at least once in a month. The number of medical practitioners or physicians should be increased. Better and good working environment should be provided. The welfare measures are significant characteristics in each association which performs a very imperative role.
9. (D.S.B.Bharathi, 2018)The research reveals the following * LIC is providing medical leaves, interest subsidy schemes to every one of its employees and all the respondents were fully satisfied with the provision. 86% of respondents were satisfied with the motivational facilities provided by LIC and the rest of the respondents were dissatisfied with the recreation facilities. Existing Employee welfare measures in LIC are effective. Job satisfaction leads to employee engagement which is the prime objective of the study stands and significantly substantiated by the results of this study.
10. (T.S., 2019) In this study five welfare drives were considered: Medical facilities, Transport facilities, First aid facilities, Canteen facilities and Recreational facilities. After analyzing the data, it identifies the significant relationships between employees' job satisfaction and the five drives of welfare measures. Employee job satisfaction was significantly associated with all five welfare drives. This study recommended that organizations need to understand the factors affecting job satisfaction in order to increase their employees' job satisfaction and to oversee turnover, intention to quit and absenteeism as the correlates to dissatisfaction.

4. OBJECTIVES OF THE STUDY

1. To examine the employee satisfaction towards the welfare measures provided by the ITC- ABD CHIRALA.
2. To develop a model for examine the satisfaction levels of the employees towards the welfare facilities.
3. To analyze the effects of demographic variables on their opinion towards the welfare facilities.

5. HYPOTHESIS OF THE STUDY

OBJECTIVE-1

To examine the satisfaction level of Employees towards the amenities provided by the organization for them.

Null hypothesis:

Employees are not satisfied by the amenities provided by the organization (NH: $\mu \leq 54$)



Alternative Hypothesis:

Employees are satisfied by the amenities provided by the organization (AH:Mu>54)

OBJECTIVE-3

To analyze the effect of demographic variables on their opinion towards the welfare facilities.

CORRELATION

H₀₁(Null): There is no significant relationship between the Age and satisfaction levels of the employees.

H_{a1}(Alternative) : There is a significant relationship between the Age and satisfaction levels of the employees.

H₀₂(Null): There is no significant relationship between the Experience and satisfaction levels of the employees.

H_{a2}(Alternative): There is a significant relationship between the Experience and satisfaction levels of the employees.

H₀₃(Null): There is no significant relationship between the Msalary and satisfaction levels of the employees.

H_{a3}(Alternative): There is a significant relationship between the Msalary and satisfaction levels of the employees.

REGRESSION

H₀₁(Null): There is no significant impact of Age of an employee on their satisfaction level.

H_{a1}(Alternative): There is a significant impact of Age of an employee on their satisfaction level.

H₀₂(Null): There is no significant impact of Experience of an employee on their satisfaction level.

H_{a2}(Alternative): There is a significant impact of Experience of an employee on their satisfaction level.

H₀₃(Null): There is no significant impact of Msalary of an employee on their satisfaction level.

H_{a3}(Alternative): There is a significant impact of Msalary of an employee on their satisfaction level.

MULTIPLE REGRESSIONS

Null hypothesis: There is no statistically significant effect of Age, Experience and Msalary of an employee on their satisfaction level.

Alternative Hypothesis: There is a statistically significant effect of Age, Experience

and Msalary of an employee on their satisfaction level.

6. RESEARCH METHODOLOGY

Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically.

Research Design: Exploratory Cum Descriptive Research designs are adopted.

Sampling Design: A Populations of 384 are identified where the research is conducted on a sample of 183 employees identified through proportionate stratified random sampling technique.

Data Collection: Adequate and relevant data is essential for any meaningful research .It forms the basis of the study by supporting the analysis.

The data was collected from the employees working in ITC ABD, ILTD CHIRALA through questionnaire. The identified 183 employees are surveyed by a schedule designed with 8 demographic variables under Part A and with 18 questions under Part B, including a 5-point Likert Scale, a psychometric scale for measuring the respondent’s interest in identifying the employee satisfaction towards the welfare measures provided by the ITC-ABD CHIRALA.

Data Analysis: Initially, the normality of scale data is tested using Shapiro-Wilks test and Homogeneity of data is tested using levene’s test for the application of parametric tests on the collected data. In order to meet the first objective, one sample t-test is used. For meeting the second objective, discriminate analysis is used. In addition, to analyze the effects of demographic variables on their opinion towards the welfare facilities is tested using Correlation and Regression.The entire analysis is accomplished using MS Excel 2007 and SPSS 22 version.

7. RESULTS AND DISCUSSION

OBJECTIVE 1

In order to meet the first objective the study has used One Sample T-test wherein a population mean of 54 is taken.

T-Test

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Sat_Level	183	70.52	6.768	.500

One-Sample Test

Test Value = 54						
	T	Df	Sig.(2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Sat_Level	33.031	182	.000	16.525	15.54	17.51

INTERPRETATION

The results state that sample mean is 70.52 which is much larger than the value of

population mean i.e., 54. From the above tables, as the sample mean of Sat_Level is 70.52, indicates that it's almost closer to the direct agreement of Employees towards the amenities received by them from the organization. The sig.value i.e. p-value is $0.001 < 0.05$, indicates that the study fails to accept NH. By this, it can be stated that the Employees are happy with the amenities provided by the organization to them. From the above, it is clear that the Employees are more satisfied with these amenities namely canteen facilities, medical facilities, physical facilities, quality training, healthy relations with peers, incentives & bonus, higher studies, safety measures and providing sufficient leaves. There are few areas to concentrate such as healthy work environment, medical facilities for entire family, healthy relations with peers, providing accommodation, motivation and insurance facilities.

OBJECTIVE 2

Being a model, it won't move with any kind of Hypothesis.

DISCRIMINATE ANALYSIS

A total of 183 cases response is taken for the present model designing. From the data, it is observed that only 43 members stated that they are more satisfied than the rest 140 respondents towards the services offered by ITC.

Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Age	.609	116.173	1	181	.000
Experience	.560	142.383	1	181	.000
MSalary	.658	93.890	1	181	.000

From the above table, it is clear that the p-value of the three Independent variables is significant as all the values are <0.05 that are 0.001. This expresses that the three Independent variables are important contributors towards the discriminant function.

Box's Test of Equality of Covariance Matrices Log Determinants

The ranks and natural logarithms of determinants printed are those of the group covariance matrices.

Sat_Status	Rank	Log Determinant
Yes	3	12.770
No	3	9.185
Pooled within-groups	3	10.612

Test Results

Box's M	107.633
F	17.441
Approx	
.	
df1	6
df2	36641.414
Sig.	.000

The significant value of Box's M statistic is $0.001 < 0.05$ which shows that there is no equality in population covariance matrices, which is expected to happen. Even though, it violates this assumption, due to the robust nature of Discriminant Analysis, it can be ignored. Even it is said by the statisticians that the maximum size of a sample may affect the significance of Box's M value, which may come out as significant, as above.

Review of Canonical Discriminate Functions Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.820 ^a	100.0	100.0	.671

Review of Canonical Discriminate Functions Eigenvalues

a. First 1 canonical discriminant functions were used in the analysis.

The value of canonical correlation is 0.671 indicates that there is a moderate correlation between the dependent variable and the discriminate function.

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	Df	Sig.
1	.550	107.451	3	.000

The significant value of wilks' lambda is $0.001 < 0.005$ it specify that the discriminant function is significant. This means the discriminate function is valid enough for separating groups in a dependent valuable.

Standardized Canonical Discriminant Function Coefficients

The above values can also be considered as \hat{a} values such as $\hat{a}_1, \hat{a}_2, \hat{a}_3$ of multiple regressions.

	F
	1
Age	.
Exnerien	3
	3
MSalar	4

As such $\hat{\alpha}_0$ is missing in the function it is used by few statisticians only. Instead, Canonical discriminate function coefficients are used for better understanding the model.

Structure Matrix

	Function
	1
Experience	.980
Age	.885
MSalary	.796

The structured matrix indicates that the three independent variables are having high correlation with the discriminant function as their values are greater than 0.7 (Thumb rule).

Canonical Discriminant Function Coefficients

	Function
	1
Age	.048
Experience	.145
MSalary	-.004
(Constant)	-3.266

From the above table, the discriminant function is written as follows:

$$D = \hat{\alpha}_0 + \hat{\alpha}_1(\text{Age}) + \hat{\alpha}_2(\text{Exp}) + \hat{\alpha}_3(\text{MSalary})$$

After including the $\hat{\alpha}$ values in the discriminant function, it becomes as follows:

$$D = -3.266 + 0.048(\text{Age}) + 0.145(\text{Exp}) + (-0.004)\text{MSalary} \quad \square$$

Discriminate function at group centroid

	Function
Sat_Status	1
Yes	1.625
No	-.499

Unstandardized canonical discriminant functions evaluated at group means

The above values help in developing a satisfaction level measurement scale. The scale goes like this,

----- -----			
	-0.499	0.563	1.625
	(No)	(Average)	(Yes)

For Example:

Case 1: Age=62; Exp=24years ; MSalary=42000/- - Employee X

$D = -3.266 + 0.048(\text{Age}) + 0.145(\text{Exp}) - 0.004(\text{MSalary})$ $D = -$
 $3.266 + 0.048(62) + 0.145(24) - 0.004(42,000)$
 $= 3.022 > 0.563$ indicates that the Employee X is having high satisfaction

level. Classification Results ^a					
		Sat_Status	Predicted Group Membership		Total
			Yes	No	
Original	Count	Yes	35	8	43
		No	13	127	140
	%	Yes	81.4	18.6	100.0
		No	9.3	90.7	100.0

a. 88.5% of original grouped cases correctly classified.

Finally, the model could consider 88.5% of cases in classifying the groups correctly Wherein

90.75 of cases better explain the dissatisfaction of employees and 81.4% of cases



explain the satisfaction level of employees in the present analysis.

INTERPRETATION

The above model helps the organization in evaluating the satisfaction level of an employee with the help of three predictors namely Age, Experience, and Msalary. From the cases, it is observed that as the Age of the employee increases along with a moderate increase in experience, there observed a rise in the satisfaction level of an employee.

OBJECTIVE -3

To analyze the effect of demographic variables on their opinion towards the welfare facilities. In order to meet the above objective Correlation and Regression tools are applied as follows.

In the present study, there are three demographic variables namely Age, Experience & Monthly salary. These variables are studied in relation with the satisfaction level of employees with the help of correlation and followed by regression to better understand the impact of these demographic variables on the satisfaction level of employees in the organization.

Initially, the correlation between the metric demographic variables and satisfaction level is computed the results are as follows

The obtained p-value is $0.001 < 0.05$ it defines that there is a significant relationship between the Age and Msalary. The correlation value $r=0.846$ indicates a strong correlation between Age & Msalary and vice-versa

Correlation of Age vs. sat level=0.924

Experience vs. sat level=0.861 Salary vs. sat level=0.833

All the three values are greater than 0.7(Rule of thumb) it shows the strong correlation between the individual demographic variables and satisfaction level of employee. There arises a need to examine the impact of one variable on the other here the effect of Age, Experience & Msalary of an employee on their satisfaction level is analyzed by using simple linear regression and multiple linear regression analysis.

The above also analysis indicates that the Employees with more salary are more satisfied than those with less salary.

Till now, the effect of Individual variables is verified on the Sat_Level of an Employee. It is observed that the Employee with more age, experience and salary are highly satisfied. Now, let us understand the combined effect of them on the Satisfaction level of an Employee to see which Independent variable affects more by applying Multiple Regression Analysis as follows;

After running these Independent and Dependent variables in SPSS under Multiple Regression Analysis, the following results are obtained.

REGRESSION

The Regression model has applied Enter Method means that all the 3 IVs are Entered into the analysis at a time.

The obtained $r=0.934$, a multiple correlation value states that there is a strong correlation between the Independent and the Dependent variable in the Model. Further, the Coefficient of Determination (R^2 is 0.872 /Adjusted R^2 i.e., 0.870 indicates that around 87.2%)

of variation in Sat_level is explained by the Model. Thereby even from the Sig.value of ANOVA is Significant as the p-value <0.05 i.e., 0.001 , indicates that the obtained regression model is significant.

The below table acting an important role in forming the Multiple Regression Equation, as shown below. It further states that there is multicollinearity in the model that can be ignorable as all the values of variance Inflation Factor (VIF) are less than 10(Rule of Thumb).

Coefficients^a

Model	Unstandardized		Standardized	T	Sig.	Collinearity	
	Coefficients		Coefficients			Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	46.935	1.227		38.257	.000		
Age	.516	.044	.681	11.686	.000	.210	4.764
Experience	.181	.059	.188	3.061	.003	.189	5.280
MSalary	.035	.021	.096	1.675	.096	.218	4.578

a. Dependent Variable: Sat_Level

The multiple regression Equation is as follows;

$$\text{Sat_Level} = 46.935 + 0.516 (\text{Age}) + 0.181 (\text{Exp}) + 0.035 (\text{MSalary}) \text{-----(A)}$$

From the above table, it can also be observed that Age and Experience are significantly contributing for the model than MSalary (as p-value is $0.096 > 0.05$, means not significant) when all these variables are analyzed together. The model becomes as follows;

$$\text{Sat_Level} = 46.935 + 0.516 (\text{Age}) + 0.181 (\text{Exp}) \text{.....(B)}$$

The above equation indicates that one unit rise in Age (i.e., 1 year) and Experience (i.e.,



1 year) leads to 0.516 and 0.181 units in the outcome i.e., Sat_Level of an Employee.

INTERPRETATION

From the above results, it is observed that as the age of an employee Increases, his Satisfaction level in the organization also increases. If the experience also raises the satisfaction level further increases. Hereby, showing that the aged employees are more satisfied than young employees in the organization and their experience adds value to their satisfaction level.

8. FINDINGS OF THE STUDY

- Employees are satisfied by the amenities provided by the organization.
- 81.4% of cases could explain the satisfaction level of an Employee.
- Developed a Model to discover the satisfaction level of an Employee in the organization.
- Among Age, Experience and Monthly Salary predictors, Age and Experience are the most significant contributors towards the satisfaction of an Employee.
- Age factor is highly impacting on the satisfaction level of an Employee.
- Experience is also affecting on the satisfaction levels of an Employee.
- Surprisingly, Monthly salary is a poor predictor of Employee's satisfaction level.
- Majority of the employees are happy with some of the factors namely medical facilities, physical facilities, healthy relations with peers, quality training, incentives & bonus, higher studies, safety measures and providing sufficient leaves.

9. SUGGESTIONS

- Make use of the Discriminate Model for testing the satisfaction level of an Employee, whether it may be to raise or retain his satisfaction level.
- Try to find out the other contributors than Monthly salary, which may effect on the overall satisfaction level of an Employee.
- Management should provide housing facilities to all the levels of employees which satisfy them and shows them equality.
- It is suggested that the management would enhance the working conditions like good drinking water, canteen facility and transport facility and so on... is required for employee work productivity.

10. FUTURE SCOPE OF RESEARCH

The study considered only the permanent employees in ITC., Chirala not for seasonal employees since stable employees can get various welfare facilities provided by the organisation as compared to temporary, contract based and labour employees as well as this research is limited to ITC., Chirala only. Further research be extended to other public sectors in finding the other factors which influence on the employee performance towards the organisation goals.

CONCLUSION

Overall employees are fully satisfied with the amenities provided by the organization. The study has come up with a model to know whether the employee is satisfied or not by availing the amenities provided by the organization. Among the three predictors namely Age, Experience, and Monthly Salary, Age and Experience are the major contributors towards the satisfaction level of an Employee. This suggests that the more



the period an employee could sustain in the organization will reap more benefits in comparison with those works for fewer periods. Even, the study suggests to move ahead with a similar kind of survey to find out other significant predictors such as Relation of peers, Superiors, Promotions, Allowances and so many other relevant factors and their contribution towards the satisfaction level of an Employee.

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AGRICULTURE AND YOUTH FOR 'RURALITY': AN UNDERSTANDING

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Abstract

Essence of being rural areas is rurality, which distinguish it from other area like town, urban, cities. There are many features which sustain the rurality among which agricultural activities is major one. Farming as an age old livelihood since the civilization took place. In the process of development, farming becomes a neglected sector and start losing its base in terms of population practicing farming. Hence, question emerged how rural is define without agricultural activities base? Will it be ok to decline agricultural activities in context of rurality? In this perspective, youth, who are the backbone of any society for its functionality, are not seen in picture who can put their shoulder to continue agricultural activities to sustain rurality. This study is exploratory in nature with qualitative inputs. Altogether, it is understood that socio-cultural and economic base of rural area must be derive from agricultural activities to sustain rurality.

Key words: Youth, Agriculture, Farming, Rurality

Introduction

The *grama* (village) has always been the backbone of Indian rural economy and the term itself is as old Vedic times. In general, it comprised a cluster of houses together with cultivated, fallow and pasture lands (Kher, 1973). Even there is plenty of historical proof that civilization in general and the economic and social life in particular of the then India was based on the village. Rural culture established in relative isolation of the community which looked inward of most of its needs (Rousseau, 1995).

Rural, where people settles together in places having facilities for living, for security and cooperation for existence and preservation of the community. With growth of population in course of time, rural communities have grown in number and various aspects of organization, administration and socio-economic relations have become stratified and rigid, customs and tradition have developed and the life and work of people in the communities have run in grooves regulated by these customs and traditions. Similar functions have developed in all village communities all over the world because the functions were necessary for human existence and development. The natural process has also lead to the division of labour between different sections of the



population, production and exchange of commodities and evolution of mediums of exchange and rates of exchange.

Instead of many radical changes, it may be through war since ancient era and passing through different revolution the basic features of the village community system has not broken. People in general have lived in the village communities under the traditional and customary rules making small adjustment according to changed regimes and continued in their own socio-economic system. It may be because of strong characteristics of rural which are define by Bealer, Willits and Kuvlesky (1965) that ecological, occupational and cultural, respectively equivalent to population density, agriculture and values and norms. These culture, agriculture, values and norms made rural base stronger. Villages used to manage their local affairs and the ancient Indian economy perhaps hardly knew anything of *laissez faire*.

The traditional village society, till the end of British administration in the forties of 20th century existed without radical change. In same decades, there was communist revolution in China, which transformed the village life with the change in property rights, organization of production and socio-economic relations. Till independence, as such, features of Indian villages were not changed but with after the independence some changes start felt, forces are being introduce in the rural economic and social systems which are gradually changing the village societies. The roles and modes of working of the functionaries and the structure of social organization are fundamentally changing.

The most important factors which are inducing changes in village life are the activities and intervention of the government. In the past, the imperial or local governments did not intervene in the socio-economic structure of the village communities or interfere in the day to day life of the people. Governmental organization was a superstructure over customary autonomous structure of the village communities. But at present govt. intervention is wide and deep and it has affected all aspects of village life. The land tenure system and credit structure have been transformed and village economy dependency trapped by market economy. The govt. is fixing the prices of many commodities produced and consumed by the villagers and the government is appointing the dealers in scarce essential commodities and regulating the supply of the commodities and functioning of the dealers. Uncountable govt. agencies are operating in the villages for various services and purposes and dependence of the general people on the govt. is unlimited which was not a thing in the past. Thus socio-economic frame of the village is different now than earlier.

Not only has the social and economic organization of the village changed, but the meaning that the village had for its residents has also undergone a complete change. Choosing to live in the village did not imply any kind of commitment to or identification with the village and its ethos. The social order of caste hierarchy is a thing of past and the collective identity of village is nearly completely fragmented as pointed out by Jodhka (2012).

Given that rural populations are ageing, it is imperative that governments consider how best they can support farmers throughout the different stages of their lives to protect and promote their livelihoods. Supportive government policies will also be important in terms of maintaining or increasing national agricultural production levels. Social policies (including adequate social protection systems) should also address the needs of



vulnerable older people in rural areas, given that traditional family support systems that have typically provided livelihood support have been considerably weakened by rural-urban migration and other factors. Supporting farmers in later life in this new demographic reality could bring wide ranging benefits. Helping them to adapt to changing climatic conditions, raising their crop yields and income, will make an important contribution to demonstrating the potential of smallholder farming as a profitable business. This may in turn create incentives for younger people to re-engage in agriculture (Ottosen, 2014).

In other side, global population is projected to reach 9 billion by 2050. The number of young people (aged 15-24) is also expected to increase to 1.3 billion by 2050, accounting for almost 14 percent of the projected global population. Most will be born in developing countries in Africa and Asia, where more than half of the population still live in rural areas. Rural youth continue to face challenges related to unemployment, underemployment and poverty. Despite the agricultural sector's ample potential to provide income-generating opportunities for rural youth challenges related specifically to youth participation in this sector (FAO, 2014).

From above, it is understood that agriculture is base for rural and its rurality, but the way agricultural activities is declining essence of rural is lingering. In other hand, youths of rural region is searching for better opportunity outside the farm sector, but which is also in saturation phase. So, now youth has their hereditary option i.e agricultural activities from which existing farmers steadily separating.

Objective

The main purpose of this study is to explore the importance of agriculture and youth to sustain rurality.

Methods

This study is more of exploratory study began with the review of literature and books regarding the connection between agricultural activities and village or rural region. The main focal point of this study is to understand the essence of rurality which is maintained by agricultural activities in rural areas. As it assumes that agricultural activities performed in rural areas with the help of sharing labour system and this generates tranquility and cooperation among members of villagers. But slowly, agricultural activities or farming is becoming secondary sources for rural livelihood. And side by side essence of rural is also lingering. Hence, in connection to youth who are in vulnerable situation in terms of employment, but not perceived agricultural activities as a livelihood option. Henceforth, this study tries to connect youth with agricultural activities and assume that if farming continue with the help of youth by following earlier system of farming then essence of rural or rurality also may sustain. This study is fully qualitative in nature.



Rural and Rurality

There are approaches which used to define the rural, in which two main conventional method of defining the rural are descriptive and socio-cultural terms as Halfacree (1993) argued. Descriptive approaches define by understanding the socio-spatial characteristics which include land-use, livelihood pattern of inhabitant and population. Another socio-cultural perception, focused on the assumption of varying socio-cultural features in relation to types of environment people lives in (Halfacree; 1993, McDonagh;1998). In defining the rural and urban people, it used different sophisticated criteria like population size, environment, agricultural activities, remoteness and most importantly recreational 'feel' of a settlement. Agriculture is an important features for perseverance of rurality (Rousseau, 1995). Even one of the subjects of rural sociology has been agriculture (Friedland, 2002).

The concepts of rural and rurality have no universally acceptable definitions. No single definition can serve all researchers, disciplines, countries or policies. Chigbu (2013) recognized these concepts as elastic, flexible and usable in multiple ways. He claimed about rurality by understanding its notion from different scholar as, 'places of tradition rather than modernity, of agriculture rather than industry, of nature rather than culture, and of changelessness rather than dynamism'. Even he asserted that it is not entirely true. All rural areas do undergo some kind of changes, whether spatial, in land use, demographic, economic or social. It is probably more accurate to say that they undergo a slower pace of change, especially when compared with urban areas.

As Rousseau (1995) suggested that rural areas as seen as an idyll, the antithesis of the ills of urban life. Robinson (1990) characterized rurality as a close human relationships based on kinship, locality and sociability, mutuality, a sharing of responsibilities and furthering of mutual good through familiarity and understanding. This feature is contrast to urban areas to some extent, as Dennis and Clout (1980) argue that individuals develop a 'shared behaviour' with the people living in the same area determined by spatial factors where one lives, because people appear to have different in different areas.

Significance of Rurality in Contemporary India

For attaining smooth development of an economy, it is imperative to develop all the regions of the country simultaneously. The overall progress of the entire economy depends on the balanced development of all the regions. Naturally the development of the country depends on the development of villages. All the necessary goods and services for the village should be (or try to) grow within the village. In a word, every village should be a self-contained republic.

Maintained rurality leads to more agriculture and allied activities which is more often labour intensive sector, and consequently adjust large number of labour force, used it as productive work force which will reduce unemployment problem of an economy especially for youths. As such, no other sector has potential to adjust large number of labour force lying unproductive in market, and hence only the agriculture is opportunity because demand of agriculture product or food never end until and unless human exist.



Machinery, being capital intensive, displace labour and naturally augment employment and under-employment. It creates a Pareto optimum situation in the sense that it improves the economic conditions of a few at the cost of many unfortunate rural people leaving them unemployed and exploited. Therefore it is a situation of two-person zero sum game. But what disappointing is that, it reduces welfare of large section of rural population (Gandhian philosophy). Mechanization in agriculture has increased productivity and ease the nature of work but at the same time it reduced employment opportunity too. The declining significance of the village has manifested not only in growing agrarian distress and farmer's suicides but also in large scale rural urban migration (Gupta and Thakur, 2017).

Economic development of a nation depends on the proper utilization of resources, it may be human and non-human. Youth is a major bunch of human resource on earth, especially in developing nation. According to Gandhi, the growth of an economy is solely depend on the development of the totality of human personality or skills. After independence from British Raj, there was hard core debate for the process of economic development and its planning. On this approach, planning was consider to avoid the unnecessary rigorous industrial transition, as it affect the people living in rural areas. So that socialist framework adopted to reflect the rural masses centered on the economic policy. This practice, seems the glimpse of understanding from Gandhi's idea which propagate the need of self-sufficient village communities to better balance between man and nature for sustainable economic development. But steadily approach become redundant by market economy forces and resulted to thrashes of agricultural ethics and rural essence.

'Dispiritization' of Rural and Farming

In contemporary era, rural and farming is considered as synonymous to poverty, rigid life, lack of facilities, outdated and farming as poor man business or work for uneducated and many such. Chigbu (2013), argued that majority of writer on rurality have emphasized poverty, livelihoods, local government administration and policy issues in rural areas. These above are important aspects of rural realities, instead there are other things also include in rural, which include the state, quality of being rural. Instead they mere represent the problematic aspects of rural areas. In most cases, these authors inaccurately equate rurality to poverty. This could make rural communities uncomfortable with associating themselves with rurality, which dilutes their original identity. This situation arises because rurality is viewed more as a challenge than as a positive condition or choice in the developmental process and its notion feeds into the existing urban bias.

The new trends of rural development discourse attempted to reinterpret the very concepts of community, rurality and development. Consequently it decline overall importance of agriculture in rural areas, where agriculture still played a dominant role, its recognition more as business rather than a "way of life" (McDonagh;1998)..

Even the then prime minister of India, Nehru proclaimed in the speech of 15 August, 1955 from Red Fort, 'it is very humiliating for any country to import food. So everything else can wait but not agriculture'. It was a frustration of Nehru, because



since independence India was feeding its citizen by importing foods. For to substantiate food production, govt. initiated Green Revolution, mainly by promoting high yielding varieties of seeds (HYVs) and chemical inputs. For a decade or so, it increases the yield and even achieved to become self-sufficient in terms quantity of food production irrespective of quality (nutrition contained).

But steadily soil fertility decline, reduction of groundwater level, illness increases among farmers due to intensive use of chemical inputs. This policy led to short term gain but long term deterioration of natural resources, decline of social capital (due to more market oriented), health disease increase and failed to encourage sustainable farming practices and unremunerated prices for agriculture produce, accumulatively turned into losing proposition. New crisis emerged like farmers committing suicides due to debt burden, farmers leaving farming as a livelihood, new generation not shown interest to continue it etc.

The main causes behind the agrarian crisis was neglecting attitude towards agriculture sector by policy makers and even major role played by agricultural scientist and economist because they cannot simply absolve themselves from the terrible agrarian crisis that have prevailed and in addition to this after economic reform corporate lobby played major role in demoralizing the agriculture.

After two decades of green revolution in early 1990s, the global economic thinking shifted to shrinking agriculture and boosting industry. International financial institution like World Bank, IMF began to propose the growth of an economy can only take place when fewer people left in agriculture. Similarly, in 1995 World Trade Organization emerge and shifted focus on trade which led to affect the economic thinking and shifted to reducing support for agriculture and importing highly subsidized cheaper food from the developed countries. Subsequently, the World Bank and Multinational Corporations have been pushing for land acquisitions, contract farming, and creation of super markets or in other words paving the way for corporate agriculture. In other words, the neglect of small scale agriculture is part of design. It is part of a pre-planned economic strategy that is being imposed.

In a country where, more than 52 percent of the 1.2 billion people are directly or indirectly engaged in agriculture, the thrust of the economic growth paradigm is to push farmers out of agriculture. Since the younger lot among farmer's don't know anything except farming, the World Bank had suggested a network of industrial training schools/institutions across the country to train them to become industrial workers. That is being done. In other words, farmers have now become a burden on the country. The common thinking is the sooner the country is able to offload farmers, the better it will be.

As a process of changing the status of 'agri-culture' as 'agri-business'. It is rightly pointed out by Friedland (2002) that there are conceptual problem of agriculture, in this contemporary era 'agriculture has become mostly sets of industrial process physically located in the open air than under a roof; that is, they constitute "agribusiness". We continue to use agriculture as an overall term that disguises most of its industrial character. Even though agribusiness and agriculture are both concerned with the production of food and fiber, the social relationships in the two entities differ qualitatively and quantitatively.



Everybody wants their children to become a doctor, engineer, civil servants, and scientist, but nobody wants to bring their children as a farmer. If asked 'whether you eat for to live or live for to eat' at one point of time we may not have answer for it. But questions crops up that whether we will get food to eat in future or not, as declining interest of the youth population in agriculture. Though it is one of the important sources of employment, however changing interest of youth population is a serious concern at present. Hence, the balance between the retiring population (old famers) and the youth (willing to take agriculture as livelihood) must be maintained (Ghimiray & Chettri, 2015).

But everyone forget the importance of farmers for human life. As, believed by Lal Bahadur Shastri while publicizing the slogan "Jai Jawan, Jai Kisan", he said that soldiers and farmers play a vital role in maintaining national security by preserving national sovereignty, one is by physical security and another by biological security.

Instead, farmers take the responsibilities to feed every stomach, from policy makers to scientist, administrator, business man and all, but nobody thinks for their well-being. And our economist who really busy with analytical research, how agriculture production is declining and is market scenario, impact of brokers in agriculture product, but where is the positive effect to farmers. Similarly, scientist who have done many research and patents and even vocal to say 'lab to land' policy, instead bottom line farmers doesn't experience any improvement.

All these compel farmers to think for alternative livelihood and youths haven't observe any prospect in this sector. Altogether, it is hampering the essence of rural because agriculture is a base which maintained the rurality till date due to its socio-cultural and features of sharing the resources among the villagers. Now, agriculture itself in vulnerable situation then how rurality sustain. Hence, to sustain rurality, agricultural practices must be continue and to sustain agricultural practices youth has to put their shoulder.

Conclusion

Altogether, it is understood that socio-cultural and economic base of rural area must be derive from agricultural activities to sustain rurality. However, it is universal tendency of rural areas where dependency on agriculture is declining. It may be because of many factors, major one is government initiative or schemes. Government execute the schemes and policy by considering the some positive features of development but in long term it steadily affects its socio-cultural and economic harmony of its existence. All these directly hamper the farming system, which is literally base for rurality. Hence, policy need to develop from bottom level not in top down approach. And to sustain rurality, youth need to take responsibilities to prosper agriculture without obstructing its natural principles.



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॥ श्रीगुरुभ्यो नमः ॥

महाभारते मोक्षधर्मपर्वणि वेदान्तविचारः

(मोक्षधर्मसाधनानि)

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उपक्रमः –

नारायणं नमस्कृत्य नरञ्चैव नरोत्तमम् ।

देवीसरस्वती चैव ततो जयमुदीरयेत् ॥

भारतदेशस्य संस्कृतेः सभ्यतायाश्च यथायथत्वपरिमाणावगमाय इतिहासपुराणानां महत्त्वं नितरामस्ति । इतिहासपुराणानि विहाय प्राचीनसंस्कृतेः सविस्तरं वर्णनं क्वचिदन्यत्र उपलभ्यते वा इति अन्वीक्षणं क्लिष्टकरमेव । वेदानाम् उद्देशः धर्मबोधेन जरामरणसुखदुःखेन ह्लावितसंसारसागरात् धर्माचरणद्वारा मुक्तित्वमेव । इतिहासद्वये महाभारतस्य वैशिष्ट्यं किमितिचेत् वेदार्थस्य विशदीकरणं महत्वरूपेण आख्यानरूपेण च वेदार्थावगमे साहाय्यम् आचरन्तीति ।

पत्रोद्देशः –

व्यासप्रणीते श्रीमन्महाभारते पुरुषार्थसम्बद्धाः सर्वे विषया अत्र प्रोक्ताः । अत एवोच्यते – “धर्मो चार्थं च कामे च मोक्षो च भरतर्षभ” इति तत्र नवपर्वणि धर्मरहस्यम् उद्घाटयितुं धर्मस्वरूपं निष्कर्षयितुं च अनेककथारूपेण प्रस्तौति भगवान् व्यासः । तस्मिन् प्रसङ्गे मोक्षधर्मपर्वणि १९२ अध्यायेषु सुखदुःखागमहेतवः, स्वधर्माचरणस्वर्गफलावाप्तिः, नूतानूतस्वरूपं, धर्मसंरक्षणार्थम् आश्रमचत्वारिभिर्निर्देशः, श्रेयस्करतमसुखं कथम् अध्यात्मज्ञानद्वारैव संप्राप्तुमर्हति,

कलिबरदन् कृष्णमूर्ति

मोक्षधर्मसाधनानि

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Dt: 26-Feb-20



आत्मनस्वरूपं, प्रवृत्तिनिवृत्तिलक्षणानि, क्षेत्रज्ञस्य स्वलक्षणं, नित्यानित्यवस्तुविवेचनं, आत्मविद्या, इत्यादयः अद्वैतवेदान्तसारभूतविज्ञानप्रदर्शनाः । ततः “मोक्षधर्मसाधनानि” इति लघ्वंसमेकम् विशदिकृत्य नारदव्यासमहर्षिभिः पूर्वोक्तमोक्षसाधनानि कथम् अद्यतन-असंस्कृत-भौतिक-दशाया- निराकुल-मानवसमूहस्य निर्ऋतिः अधुनाऽपि धीरेणावष्टम्भं कर्तुं शक्यते इति प्रस्थातुमिदं पत्रं प्रयतते ।

मोक्षधर्मप्रसङ्गः -

अष्टादशदिनाम्प्रवृत्तमहाभरतयुद्धे सर्वत्र सर्वनाशं अवलोक्य दुःखाभिसन्तप्तं विषण्णमनसं राजानं युधिष्ठिरं प्रति पितामहः भीष्मः नानाविधान् दूरनुष्ठेयान् क्षुद्रफलान् राजधर्मान् आपद्धर्माश्च उपदिष्टवान् । तां श्रुत्वा अत्यन्तमुद्विग्नः धर्मजिज्ञासा राजा युधिष्ठिरः सर्वापन्नवारणम् आत्यन्तिकश्रेयोहेतुं श्रोतुं वक्ति : “पितामहेन राजधर्माङ्गत्वेन उपस्थिता आपद्धर्माः प्रोक्ताः । प्रशस्यतमो मोक्षधर्मः गृहस्थादीनां सर्वेषामपि अत्र अधिकारो दर्शितः । तान् भवन्तः कृपया वक्तुमर्हसि” इति ।

मोक्षधर्माः आत्ममोक्षनिमित्तं -

लोके दृश्यमानानां सुखदुःखानां अत्यन्तहेतुः अतीर्णसंसारबन्धनात् प्राप्तजननमरणादिशरीरसंबन्धः एव । अतः युधिष्ठिरं प्रति पितामहः भीष्मः तस्य शोखक्षयार्थम् आत्ममोक्षनिमित्तं वदति :

यथा यथा च पर्येतिलोकतन्त्रमसारवत् ।

तथा तथा विरागोऽत्र जायते नात्र संशयः ॥ (१७४.४)



एवं व्यवसिते लोके बहुदोषो युधिष्ठिरः ।

आत्ममोक्षनिमित्तं वै यतेत मतिमान् नरः ॥ (१७४.५)

‘लोके स्थावरादि सत्यलोकपर्यन्ते दोषदर्शननिश्चयेन विविधरूपेणावस्थिते सति आत्मनोऽन्यत्सर्वं दुःखस्वरूपमिति श्रुत्यनुमानात् आत्ममोक्षनिमित्तं प्रयत्नम् कुरुष्व’ इति । तस्य वचनं श्रुत्वा पप्रच्छति युधिष्ठिरः कथं बुद्ध्या शोकं तरेतुं शक्यते? तन्मे ब्रूहि इति :

नष्टे धने वा दारे वा पुत्रे पितरि वा मृते ।

यया बुद्ध्या नुदेच्छोकं तन्मे ब्रूहि पितामह ॥ (१७४.६)

अत्र “ब्रह्मवित् ब्रह्मैव भवति” (मु. उ. ३.२.९) इति श्रुतिवाक्येन ब्रह्मज्ञानेन ब्रह्मभावो भवति इति अनुस्मरन् अपरा श्रुतिवाक्यं ‘तरति शोकम् आत्मवित्’ (छा.उ. ७.१.३) आलोचयन् आत्मज्ञानार्थं शोकप्रतीकारकहेतुं समादिकम् अनुतिष्ठेत् इत्यर्थे भीष्मः वदति –

नष्टे धने वा दारे वा पुत्रे पितरि वा मृते ।

अहो दुःखमिति ध्यायञ्शोकस्यापचितिम् तरेत् ॥ (१७४.७)

एवमुक्त्वा भीष्मः तस्य कस्यचित् विप्रमित्रं, राजा सेनजित् मद्ये प्रवृत्त संवादम् अनुस्मरणं वदति :

ये च बुद्धिमुखं प्राप्ता द्वन्द्वातीता विमत्पराः ।

तान् नैवार्था न चानर्था व्यथयन्ति कदाचन ॥ (१७४.३५)



बुद्धिमन्तं कृतप्रज्ञं शुश्रूषुमनसूयकम् ।

दान्तं जितेन्द्रियं चापि शोको न स्पृशते नरम् ॥ (१७४.४१)

विवेकिनस्तु अन्तरस्थाऽपि क्लेशं न अनुभवन्ति यतः सुखदुःखाद्यतीताः ते परोत्कर्षं वा अपचितिः वा तेषां अशहिष्णुत्वं वर्जिताः । अपि च शास्त्रीयाभ्यासात्परं बुद्धिर्गतसामर्थ्यधारणात् दोषदृष्टिरस्यारहितं जितचित्तं प्राप्तवन्तः । अस्मिन् संदर्भे विप्रेण राजानं प्रत्योक्तं पिङ्गलोपाख्यानकथनं ज्ञापयित्वा कथं पिङ्गला इत्येवं वेश्याः जितेन्द्रिया सुखं प्राप्तवति इति भीष्मेन कथितः । एतत्पुस्तान्तं श्रुत्वा युधिष्ठिरः तं पृच्छति :

अतिक्रामति कालेऽस्मिन् सर्वभूतक्षयावहे ।

किं श्रेयः प्रतिपद्येत तन्मे ब्रूहि पितामह ॥ (१७५.१)

कालविलम्बो न कर्तव्यः यथा कालः जरारोगादिभिः नृणां पराभवं कुर्वति अतः प्रशस्यतमं मोक्षधर्मं कथं प्राप्तुमर्हतीति उपदिश्यतां इति । अत्रारभ्यते भीष्मस्य मोक्षधर्मविवरणानि साधनानि उपायानि च ।

मोक्षस्य विवरणम्;

पप्रथमं 'मोक्षम्' इति पदस्य कोऽर्थः इति द्रष्टव्यम् । व्युत्पत्त्या 'मोहं क्षयति इति मोक्षम्' इति केचन वदन्ति । 'मुञ्च' इति धातोः धातुरूपमये 'मुञ्चति' 'मुञ्चते' इति प्रयोगद्वयमपि दृश्यते 'मोक्षम्' 'मुक्ति' इत्यर्थे । वेदे अपि 'मोक्षं', 'मुक्तिः' इति पदद्वयमपि समानार्थं प्रयुक्ताः । संसारबन्धनात् मुक्तिः इत्यर्थे मोक्षपदस्य अर्थावगमः सर्वासु उपनिषत्सु ब्रह्मसूत्रेषु च प्रयुक्तम् ।



बृहदारण्यकोपनिषदि -

“याज्ञवल्क्येति होवाच यदिदं सर्वं मृत्युनासँ सर्वं मृत्युनाभिपन्नं केन यजमानो मृत्योरासिमतिमुच्यत इति होत्रर्त्विजाग्निना वाचा वाच्यै यज्ञस्य होता तद्येयं वाक्सोऽयमग्निः स होता स मुक्तिः सातिमुक्तिः ” ॥ ३.१.३ ॥

छान्दोग्योपनिषदि -

“.....स्मृतिः स्मृतिलम्भे सर्वग्रन्थीनां विप्रमोक्षस्तस्मै मृदितकषायाय तमसस्पां दर्शयति....” ॥ ७.२६.२ ॥

श्वेताश्वतरउपनिषदि -

स विश्वकृद् विश्वविदात्मयोनिर्ज्ञः कालकालो गुनी सर्वविद्यः ।
प्रधान क्षेत्रज्ञपतिर्गुणेशःसंसारमोक्षस्थिति बन्धहेतुः ॥ ६.१६ ॥

भगवद्गीतायामपि भगवान् श्रिकृष्णः वदति :

जरामरणमोक्षाय मामाश्रित्य यतन्ति ये ।
ते ब्रह्म तद्विदुः कृत्स्नमध्यात्मं कर्म चाकिलम् ॥ ७.२९ ॥



आत्मस्वरूपकथनम् :

युधिष्ठिरः भीष्मं पप्रच्छ, आत्मा तर्हि कः ? भीष्मपितामहः आत्मनः स्वरूपं एवं विस्तरति :

पूर्वं नित्यं सर्वगतं मनोहेतुमलक्षणम् ।

अज्ञानकर्म निर्दिष्टमेतत् कारणलक्षणम् ॥ (२११.६)

एष आत्मा अनादि, सर्वव्यापि, मनः कारणत्वं, विना लक्षणं अव्यतिरिक्तसन्नयमस्मच्छरीरात्
अस्माकम् अज्ञानकर्मवशात् प्रतिष्ठितो इदं प्रपञ्चस्य कारणम् । अस्मिन्विषये अधुना भीष्मेन
युधिष्ठिरं प्रति व्यासव्याख्येन एवमुच्यते :

शरीराद् विप्रयुक्तं हि सूक्ष्मभूत शरीरिणम् ।

कर्मभिः परिपश्यन्ति शास्त्रोक्तैः शास्त्रवेदिनः ॥ (२५३.१)

ये शास्त्रोक्तप्रकारैः कर्मकार्यं कुर्वन्ति ते निपुणाः शरीराद् विप्रयुक्त तथापि सूक्ष्मतया शरीरे
प्रविष्ट ब्रह्मन् परिपश्यन्ति । एतदेव सर्वासु उपनिषत्सु प्रमाणरूपेनोक्तम् -

श्वेतास्वतरोपनिषद् प्रमाणं कुरुते -

“एको देवः सर्वभूतेषु गूढः सर्वस्यापि सर्वभूतान्तरात्मा ।

तमात्मस्थं चेऽनुपश्यन्ति धीरास्तेषां सुखं शाश्वतं नेतरेषाम् ॥ (६.११)

शरीरं स्थूलमयं प्रत्यक्षस्वरूपम् । परन्तु एकैकस्य शरीरे मानवः जन्तवः च सर्वभूतेषु
सूक्ष्मतया विद्यमान प्राणहेतुः सः गूढस्थः एको देवः सर्वव्याप्यन्तरात्मा । आत्मस्थं तं ये विवेकिनः
तेषां योगबलेन द्रष्टुम् शक्नुवन्ति ते शाश्वतसुखं प्राप्नुवन्ति, न तु इतरेषाम् ।



बृहदारण्यकोपनिषदि -

“यत् साक्षादपरोक्षात् ब्रह्म य आत्मा सर्वान्तरः” (३.४.१) इति.
भगवान् शंकरभगवत्पादः तस्य भाष्ये “यद् ब्रह्मसाक्षात् अव्यवहितं केनचिद् द्रष्टुमपरोक्षाद् अगौणम्
न श्रोत्र ब्रह्मादिवत्, किम् तत्? य आत्मा आत्मशब्देन प्रत्यगात्मोच्यते, तत्र आत्मशब्दस्य
प्रसिद्धत्वात्, सर्वस्याभ्यन्तरः, शब्दाभ्यां प्रसिद्ध आत्मा ब्रह्मेति, तमात्मानं, मह्यं विस्पष्टं श्रुज्जे गृहीत्वा
यथा गां दर्शयति, तथा सोऽयमित्येवं कथयस्वेत्यर्थः” । साक्षात् ब्रह्मैव एकैकस्य अभ्यन्तरः
अन्तरात्मा स एव अस्माकं कार्यकरणसद्भातः सच्चिदानन्दस्वरूपः इति प्रकटयति ।

मोक्षसाधनानि – पप्रथम साधनम् >> आत्मज्ञानादेव कैवल्यम्

“ज्ञानादेव तु कैवल्यम्”, “तमेवं विदित्वातिमृत्युमेति नान्यः पन्था विद्यतेयनाय”,
“ब्रह्मविदाप्नोति परम्” इत्यादि श्रुतिवाक्येन ज्ञानमेव मोक्षसाधनमिति प्रकटयन्ति
भगवान्शङ्कराचार्यरप्रभृतयः वेदान्तिनः । भीष्मः इदानीं कश्चन ब्राह्मणपुत्रयोर्मध्ये विकसितसंवादं
अनुस्मरति । मेधावी नाम मोक्षधर्मार्थं कुशलः लोकयतार्थं विचक्षणः स्वाध्यायनिरतः स्वस्य पुत्रस्य
जरामरणादिभिः पीडितजीवितस्य उद्धर्तुकामाश्रय धर्मान् फलसंबन्धमनतिक्रम्य उपदिश्येदिति
प्रश्नोत्तररूपताप्रवृत्तसंवादान्ते मेधावी पुत्रः एवं प्रतिपादयति :

नास्ति विद्यासमं चक्षुर्नास्ति सत्यसमं तपः ।

नास्ति रागसमं दुःखं नास्ति त्यागसमं सुखम् ॥ (१७५.३५)

आत्मन्येवात्मनाजात अत्मनिष्ठोऽप्रजोऽपि व

आत्मन्येव भविश्यामि न माम् तारयति प्रजा ॥ (१७५.३६)



अयमात्मा ब्रह्म इति कारणात् ब्रह्मरूपोजातः न पित्रा मात्रा । अतः ब्रह्मभूतैव भविष्यामि
ब्रह्मण्येव मम प्रतिनिवृत्तिः इति ।

मोक्षधर्मसाधनान् राजानं व्याहृत्य भीष्मः व्याससुरवमुनिवरव्याख्यानं अनुवादरूपेण
आत्मज्ञानादेव कैवल्यं प्राप्तुमर्हतीति ब्रवीति :

अथ ज्ञानद्वयं धीरो गृहीत्वा शान्तिमात्मनः ।

उन्मज्जंश्च निमज्जंश्च ज्ञानमेवाभिसंश्रयेत् ॥ २३७.१ ॥

“आत्मा वा अरे द्रष्टव्यः श्रोतव्यो मन्तव्यो निदिध्यासितव्यः” (बृ.उप २.४.५) इति
मैत्रेयिंप्रति आत्मविषये याज्ञवल्क्यः यथा उपदिशति, तथा व्यासोऽपि अत्र आत्मज्ञानस्यावश्यकता
अवलम्ब्य आत्मसाक्षात्कारसाधनं ज्ञानमेव इति सनिश्चयं वदति ।

कथम् आत्मज्ञानं प्राप्तुमर्हति इति प्रश्नमपेक्ष्या सूक्ष्मविषयान् उपायनगोचरान् च अनुवर्तते
भीष्मः ।

चित्तशुद्धिः -

सुप्रसन्नचित्ते एव आत्मा भासते यथा निर्मलसलीले एव पूर्णचन्द्रस्य कान्तिस्वरूपं प्रकाशते ।
चित्तदोषं विश्वयंकृत्वा एव चित्तसमादानवान् आत्मानं पश्यन्नर्हति । चित्तदोषारोपणं कथं
संपीडयति? भीष्मः क्रमेण तेषां प्रसारणसामर्थ्यं प्रतिपादयति -



तस्य मायापिनद्धाङ्गा नष्टज्ञाना विचेतसः ।
मानवा ज्ञानसम्मोहात् ततः क्रोधं प्रयान्ति वै ॥ (२१३.३)
क्रोधात् काममवाप्याथ लोभमोहो च मानवाः ।
मानदर्पावहङ्कारमहङ्कारात् ततः क्रियाः ॥ (२१३.४)
क्रियाभिः स्नेहसम्बन्धात्स्नेहाच्छोकमनन्तरम् ।
सुखदुःखक्रियारम्भाजन्माजन्मकृतक्षणाः ॥ (२१३.५)

मायापिहिताः नराः विचेतसः भवन् अज्ञानसम्मोहात् क्रोधवशं प्रयान्ति । ततः कामं, लोभं, मोहञ्च प्राप्य मानदर्पावहङ्कारात् विविधपापक्रियायां अनुपतन्ति । क्रियाभिः उद्धृत्तस्नेहः तस्य प्रतिक्रियायां उत्पन्नसुखदुःखादयः तदनन्तरं पुनरारभते जननमरणसंस्कारप्रतिबन्धनम् । एतेषां मूलकारणम् अज्ञानमेव । अज्ञानात् 'पुनरपि जननं पुनरपि मरणम्' इत्येतस्यां पर्यावस्थायां प्रविष्टस्य मानवस्य उद्धरणं कथम् भवेत्?

व्यासमहर्षिः सुखमुनिसंवादाव्याख्यां आश्रित्य रागयुक्ताचेतसः अभिघाताय वदति भीष्मः
'इन्द्रियनिग्रहणं कुर्यात्' इति ।

इन्द्रियनिग्रहणम्

मनोबुद्ध्यहंकाराश्च, एते त्रयो स्वयोनिजाः। इदं जगत् बुद्धिमात्रकल्पितम् इति यो जानाति स न मुह्यति । यथा विषयाणां सत्त्वाभावेऽपि रज्जुरगवदविद्यया प्रकाश उपपद्यते इति सर्वमवदातम् । एवञ्च आत्मानम् इन्द्रियैः द्रष्टुं न शक्यते यथा हि काम्यमानविषयगोचरैः दोषयुक्तैः आत्मानं



स्वरूपेण द्रष्टुमशक्यः । कामक्रोधमत्सरादिभिर्विनिर्मुक्तचेतसा इन्द्रियनिग्रहेण अज्ञानमपगममात्रैव
आत्मसाक्षात्कारं प्राप्नोति ।

चित्तप्रसादेन यतिर्जहातीह शुभाशुभम् ।
प्रसन्नमाऽऽत्मनि स्थित्वा सुखमत्यन्तमश्नुते ॥ (२४६.१०)
बुद्धिरात्मा मनुष्यस्य बुद्धिरेवात्मनाऽऽत्मनि ।
यदा विकुरुते भावं तदा भवति सा मनः ॥ (२४८.३)
अनादिनिधनो ह्यात्मा तं बुद्ध्या विचरेन्नरः ।
अन्नरध्यन्नप्रहृष्यश्च नित्यं विगतमत्सरः ॥ (२४९.५)
इन्द्रियाणि प्रमाथीनि बुद्ध्या संयम्य यत्नतः ।
सर्वतो निष्प्रतिष्णूनि पिता बालानिवात्मजान् ॥ (२५०.३)

कामक्रोधादीनां स्वरूपं निर्वर्तनं च –

हृदि कामद्रुमश्चित्रो मोहसंचयसम्भवः ।
क्रोधमानमहास्कन्धो विधित्सापरिषेचनः ॥ (२५४.१)
तस्य चाज्ञानमाधारः प्रमादः परिषेचनम् ।
सोऽभ्यसूयापलाशो हि पुरा दुष्कृतसारवान् ॥ (२५४.२)
सम्मोहचिन्ताविटपः शोकशाखो भयाङ्कुर ।
मोहनीभिः पिपासाभिर्लताभिरनुवेष्टितः ॥ (२५४.३)

व्यासः विवृणोति एवम् – एकैकस्य हृदये आशा इति वृक्षः अस्ति । तस्य बीजं मोहः ।
तस्य स्कन्धो क्रोधः मानम् च । तस्य आधारम् अज्ञानं प्रमादः सलिलम् । असूया पलाशः ।



संमोहः चिन्ता च तस्य विटपः । शोको तस्य शाखा । भयं अङ्कुरः । पिपासा लता । महर्षिव्यासः
वदति 'आयसैः संयुताः सुलुब्धाः तस्यफलमीप्सिताः तं वृक्षं परिवेष्ट्य उपासते' इति ।
कामक्रोधवृक्षस्य स्वरूपं तं अर्तत्राणाय संरोह्य कृतप्रज्ञः तान् सर्वान् उक्त्वा व्यासमहर्षिः तस्मात्
कथं निवर्तनं भवति इत्यपि विशदयति एवम् :

तस्यानुगतमूलस्य मूलमुद्रियते बलात् ।

योगप्रसादात् कृतिना सांयेन परमासिना ॥ (२५४.७)

एवं यो वेद कामस्य केवलस्य विवर्तनम् ।

बन्धं वै कामशास्त्रस्य स दुःखान्यतिवर्तते ॥ (२५४.८)

ये मानवाः कामस्य दुःखभूतातिकठोरविपाकदारुणं जानाति ते योगप्रसादात् समाहृतचित्त्या
धर्मज्ञानेन च तं वृक्षमूलम् छित्वा दुःखस्य निवर्तनम् आप्नुवन्ति ।

धर्मम् अहिंसा सत्यञ्च

युधिष्ठिरः यदा भीष्मं प्रति धर्मप्रामाण्याक्षेपान् पृच्छति तदा भीष्मः तुलाधारेण जाजलये
प्रदत्तधर्मरहस्योपदेशान् अनुस्मृत्य प्रतिवदति :

वेदाहं जाजले धर्मं सरहस्यं सनातनम् ।

सर्वभूतहितं मैत्रं पुराणं यं जनाविदुः ॥ (२६२.५)

अद्रोहेणैव भूतानामल्पद्रोहेण वा पुनः ।

या वृत्तिः स परो धर्मस्तेन जीवामि जाजले ॥ (२६२.६)

तपोभिर्यज्ञदानैश्च वाक्यैः प्रज्ञाश्रितैस्तथा ।



प्राप्यभयदानस्य यद् यत् फलमिहाश्रुते ॥ (२६२.२८)

मैत्रभावादभिव्यक्तसर्वभूतहितं यं धर्म जनैः पुराणमिति ज्ञातं तदनादि शास्वतञ्च । इदं अस्य धर्मस्याधारं अद्रोहः अथवा अल्पद्रोहः । मम जीवनं तावद्धर्मवृत्तिरूपेणैव । यत् फलं मानवः इहजन्मनि तपोभिः यज्ञदानैः वाक्यैः च प्राप्नोति तान् सर्वान् अभयदानात् प्रज्ञाश्रितैः प्राप्तुम् शक्यते ।

मोक्षोपायः – क्षमा, कामक्रोधादीनां विवर्जनं, सत्वससंसेवनम्

यदा युधिष्ठिरः सूक्ष्मतरमोक्षोपायान् पृच्छति तदा भीष्मेन एवं प्रतिपादितम् :-

क्षमया क्रोधमुच्छिन्द्यात् कामं संकल्पवर्जनात् ।

सत्वससंसेवनात् धीरो निद्रां च च्छेत्तुमर्हति ॥ (२७४.५)

भयं श्वाशं च रक्षेत, इच्छा, द्वेषं, भ्रमं च विनिवर्तयेत्

अप्रमादात् भयं रक्षेत स्वासं क्षेत्रज्ञशीलनात् ।

इच्छां द्वेषं च कामं च धैर्येण विनिवर्तयेत् ॥ (२७४.६)

भ्रमं सम्मोहमावर्तमभ्यासाद् विनिवर्तये ।

निद्रां च प्रतिभां चैव ज्ञानाभ्यासेन तत्ववित् ॥ (२७४.७)

विवेकिनः स्वसंकल्पात् क्षमया कामक्रोधादीनां उच्छित्तिं प्राप्य सत्वससंसेवनात् निद्रामपि छेत्तुम् शक्तः । जागरूकता भयं, क्षेत्रज्ञाध्यानेन स्वासं च रक्षणं, कामेच्छाद्वेषं च धैर्येण विनिवर्तनं, भ्रमं मोहमावर्तविनिवर्तनं शास्त्राभ्यासात्, ज्ञानाभ्यासेन प्रतिभाविनिवृत्तिम् च प्राप्तुमर्हति ।

स्नेहं, क्षुधा, मानं, तृष्णा च विनिवर्तयेत्



अनित्यत्वेन च स्नेहं क्षुधां योगेन पण्डितः ।

कारुण्येनात्मनो मानं तृष्णां च परितोषतः ॥ (२७४.१०)

स्नेहं अनित्यमिति विचिन्त्य त्यजेत्, क्षुधां योगेन जयेत्, कारुण्येन आत्मनो मानं, परितोषतः
तृष्णां च पण्डितः विनिवर्तयेत् ।

वाक्, मनः, आत्मानं च यच्छेत्

यच्छेत् माङ्गलसी बुद्ध्या तां यच्छेज्ज्ञानचक्षुषा ।

ज्ञानमात्मावबोधेन यच्छेदात्मानमात्मना ॥ (२७४.१२)

आत्मा ब्रह्मेति अवबोधेन इन्द्रियाणि मनसि, मनो बुद्धौ, बुद्धिं त्वंपदार्थं, तं ब्रह्माकरवृत्तौ, तां
शुद्धात्मनि च, इति क्रमेण प्रविलाप्य, स्वरूपात्मनाऽवतिष्ठेत् । एवं वेदान्तश्रवणाद्यभ्यासात्
वैराग्याच्च, कामक्रोधविवर्जनम्, दर्पाहंकारराहित्यम्, अनिकेतत्वम् च कामवैपरीत्येन निष्कामः
कर्तव्यमिति भीष्मः युधिष्ठिरं प्रति मोक्षोपायान् प्रतिपादयति ।

सत्यं वद, तपस् कुर्यात् :-

“सत्यमेव जयते नानृतम्” (मुनु.उप. ३.१.६) इति श्रुत्योपदिष्टवत्

सत्यं ब्रह्म तपः सत्यं विसृजते प्रजाः ।

सत्येन धर्यते लोकः स्वर्गं सत्येन यच्छति ॥ (१९०.१)

इति बृगुऋषिवाक्यमाश्रित्य सत्यमेव परिपालयतामिति भीष्मः युधिष्ठिरम् उपदिशति । भ्रष्टैश्वर्येन
वृत्रेण कथं शोखं हृष्यं च तं न बाधते इति यदुपदिष्टं तदु स्मारयति भीष्मः :



सत्येन तपसा चैव विदित्वासंशयं ह्यहम् ।

न शोचामि न हृष्यामि भूतानामागतिं गतिम् ॥ (२७९.१६)

“तपसा कल्मषं हन्ति विद्ययाऽमृतमश्नुते” (मनु. १२.१०४), “तपसा ब्रह्म विजिज्ञासस्व” (तै.उप. ३.२.५), “सत्येन लभ्यस्तपसा ह्येष आत्मा सम्यग्ज्ञानेन ब्रह्मचर्येण नित्यम् । (मुनु.उप. ३.१.५)” इति आत्मज्ञानार्थं श्रुतिवाक्यं विमृश्य तपस कुर्यात् इति उपदिशति ।

उपसंहारः –

भारतीयसंस्कृतेः सनातनधर्मस्य च प्राणभूतानि श्रुतितुल्यप्रमाणाणि च सद्ब्रह्मीतुं मोक्षधर्मपर्वण्योक्तजीवब्रह्मैक्यभावनिदर्शनाः अद्वैतवेदान्तसारप्रबोधकाः कथम् अतुलं महत्वं आवहन्तीति अवर्णनीयम् । विविधधर्मशास्त्रीयज्ञानप्रदीपत्वात्, समन्वितत्वात्, ऐतिह्यविदग्धत्वात्, राजनीतिशास्त्रनिष्णातत्वात् च ऐतिहासमिदं महाभारतम् अल्पधियामपि मनांसि सङ्गीतात्मकतया रञ्जयति इत्यस्मिन् विषये कौऽऽक्षेपः । इति शम् ।

कलिवरदः - चेन्नै

सहायकग्रन्थसूचि :

१. महाभारत आङ्ग्लानुवादः – एम्.एन्.दत्

२. भावदीपः – नीलकण्ठः