

Peer reviewed Journal

Impact Factor:7.265

ISSN-2230-9578

Journal of Research and Development

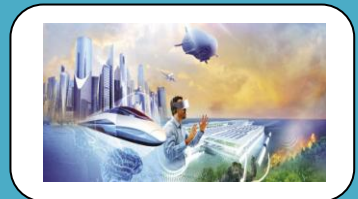
Multidisciplinary International Level Referred Journal

February-2022 Volume-13 Issue-8

Chief Editor

Dr. R. V. Bhole

'Ravichandram' Survey No-101/1, Plot
No-23, Mundada Nagar, Jalgaon (M.S.) 425102



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Rainwater Harvesting and Its methods

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Introduction: -

Rainwater harvesting is a technology used for collection and storing rainwater from rooftops, the land surface or rock catchments using simple techniques such as jars and pots as well as more complex techniques such as underground check dams. The techniques usually found in Asia and Africa arise from practices employed by ancient civilization within these regions and still serve as a major source of drinking water supply in rural areas.

Objective :-

1. To define rain water harvesting.
2. To study methods and techniques in rainwater harvesting.

What is Rainwater Harvesting :-

Rainwater harvesting is the process of collection of rainwater from surface on which rain falls, filtering it and storing it for multiple uses. Rainwater harvesting the supply of and storage of water from surfaces that rain has fallen upon, in a normal scenario the rain water is collected from roof building and then stored inside of a special tank, rain water harvesting systems are designed after assessing site conditions that include rainfall pattern, incident rainfall, subsurface strata and their storage characteristics. Rain water harvesting is popular all across the world. Although in countries that are very dry, such as Africa, Australia, some part of India etc.

Methods and Techniques:-

The methods of ground water recharge mainly are:

A) Urban Areas:

Roof top rain water/storm runoff harvesting

B) Rural Areas:

Rain water harvesting through gully plug, recharge shaft, dug well recharge, dams, etc.

A) Urban Areas:-

In urban areas rain water available from roof tops of buildings, paved and unpaved areas goes waste. This water can be recharged to aquifer and can be utilized gainfully at the time of need. The rain water harvesting system needs to be designed in a way that it does not occupy large space for collection and recharge system. Roof top rain water harvesting can be a very effective tool to fight the problem of water shortage particularly in urban areas. Roof top rain water harvesting depends upon the amount of rainfall and the roof top area. More the amount of rainfall more is the harvested water from roof top. Similarly, larger amount of roof top rain water is harvested from roofs with large area. Table 16.7 gives the amount of harvested water from roof top in cubic meters in relation to the amount of rainfall in millimeters and the roof top area in square meters.

A few techniques of roof top rain water harvesting in urban areas are described as under:

Roof Top Rainwater Harvesting through Recharge Pit:

- 1) In alluvial areas where permeable rocks are exposed on the land surface or at very shallow depth, roof top rain water harvesting can be done through recharge pits.
- 2) The technique is suitable for buildings having a roof area of 100 sq m and is constructed for recharging the shallow aquifers.
- 3) Recharge Pits may be of any shape and size and are generally constructed 1 to 2 m wide and 2 to 3 m deep which are back filled with boulders (5-20 cm), gravels (5-10 mm) and Coarse sand (1.5-2 mm) in graded form. Boulders at the bottom, gravels in between the coarse sand at the top so that the silt content that will come with runoff will be deposited on top of the coarse sand layer and can easily be removed. For smaller roof area, pit may be filled with broken bricks/cobbles.
- 4) A mesh should be provided at the roof so that leaves or any other solid waste/debris is prevented from entering the pit and a desalting/collection chamber may also be provided at the ground to arrest the flow of finer particles to the recharge pit.
- 5) The top layer of sand should be cleaned periodically to maintain the recharge rate.

- 6) By-pass arrangement is provided before the collection chamber to reject the first showers.

Roof Top Rain Water Harvesting through Recharge Trench:-

1. Recharge trenches are suitable for buildings having roof area of 200-300 sq m and where permeable strata are available at shallow depths.
2. Trench may be 0.5 to 1 m wide, 1 to 1.5 m deep and 10 to 20 m long depending upon availability of water to be recharged.
3. These are back filled with boulders (5-20 cm), gravels (5-10 mm) and coarse sand (1.5-2 mm) in graded form-boulders at the bottom, gravel in between and coarse sand at the top so that the silt content that will come with runoff will be deposited on the top of the sand layer and can easily be removed.
4. A mesh should be provided at the roof so that leaves or any other solid waste/debris is prevented from entering the trench and a desilting/collection chamber may also be provided on ground to arrest the flow of finer particles to the trench.
5. By-pass arrangement is provided before the collection chamber to reject the first showers.
6. The top layer of sand should be cleaned periodically to maintain the recharge rate.

Roof Top Rain Water Harvesting through Existing tube wells:-

- 1) In areas where the shallow aquifers have dried up and existing tube wells are tapping deeper aquifer, roof top rain water harvesting through existing tube well can be adopted to recharge the deeper aquifers.
- 2) PVC pipes of 10 cm diameter are connected to roof drains to collect rain water. The first roof run off is let off through the bottom of drain pipe. After closing the bottom pipe, the rain water of subsequent rain showers is taken through a T to an online PVC filter. The filter may be provided before water enters the tube-well. The filter is 1-1.2 m in length and is made up of PVC pipe. Its diameter should vary depending on the area of roof, 15cm if roof area is less than 150 sq m and 20 cm if the roof area is more.
- 3) The filter is provided with a reducer of 6.25 cm on both the sides. Filter is divided into three chambers by PVC screens so that filter material is not mixed up. The first chamber is filled up with gravel (6-10 mm), middle chamber with pebbles (12-20 mm) and last chamber with bigger pebbles (20-40 mm).
- 4) If the roof area is more, a filter pit may be provided. Rain water from roofs is taken to collection/desilting chambers located on ground. These collection chambers are interconnected as well as connected to the filter pit through pipes having a slope of 1: 15. The filter pit may vary in shape and size depending upon available runoff and are back-filled with graded material bolder at the bottom gravel in the middle and sand at the top with varying thickness (0.30-0.50m) and may be separated by screen. The pit is divided into two chambers, filter material is one chamber and other chamber is kept empty to accommodate excess filtered water and to monitor the quality of filtered water. A connecting pipe with recharge well is provided at the bottom of the pit for recharging of filtered water through well.

Roof Top Rain Water Harvesting through Trench with Recharge Well:-

1. In areas where the surface soil is impervious and large quantities of roof water or surface runoff is available within a very short period of heavy rainfall. The use of trench/pits is made to store the water in a filter media and subsequently recharge to ground water through specially constructed recharge wells.
2. This technique is ideally suited for area where permeable horizon is within 3 m below ground level.
3. Recharge well of 100-300 mm diameter is constructed to a depth of at least 3 to 5 m below the water level. Based on the lithology of the area well assembly is designed with slotted pipe against the shallow and deeper aquifer.
- 4) A later trench of 1.5 to 3 m width and 10 to 30 m length, depending upon the availability of water is constructed with the recharge well in the centre.
- 5) The number of recharge wells in the trench can be decided on the basis of water availability and local vertical permeability of the rocks.
- 6) The trench is backfilled with boulders, gravels and coarse sand to act as a filter media for the recharge wells.
- 7) If the aquifer is available at greater depth say more than 20 m, a shallow shaft of 2 to 5 m diameter and 3-5 meters deep may be constructed depending upon availability of runoff. Inside the shaft a recharge well of 100-300 mm diameter is constructed for recharging the available water to the deeper aquifers. At the bottom of the shaft a filter media is provided to avoid choking of recharge well.

Rural Areas :-

In rural areas, rain water harvesting is taken up considering watershed as a unit. Surface spreading techniques are common since space for such systems is available in plenty and quantity of recharged water is also large. Following techniques may be adopted to save water going waste through slopes, rivers, rivulets and nala

Rain Water Harvesting through Gully Plug:-

1. Gully plugs are built using local stones, clay and bushes across small gullies and stream running down the hill slopes carrying drainage to any catchments during rainy season.
2. Gully plugs help in conservation of soil and moisture
3. The sites for gully plugs may be chosen whenever there is a local break in slope to permit accumulation of adequate water behind the bunds.

Rain Water harvesting through Contour Bund:-

- 1) Contour bunds are effective method to conserve soil moisture in watershed for long duration.
- 2) These are suitable in low rain fall areas where monsoon run off can be impounded by constructing bunds on the sloping ground all along the contour of equal elevation
- 3) Flowing water is intercepted before it attains the erosive velocity by keeping suitable spacing between bunds.
- 4) Spacing between two contour bunds depends on the slope of the area and the permeability of soil, lesser the permeability of soil, the closer should be spacing of bund. Contour bunding is suitable on lands with moderate slopes without involving terracing.

Rain Water Harvesting through Gabion Structure:-

1. This is a kind of check dam commonly constructed across small streams to conserve stream flows with practically no submergence beyond stream course.
2. A small bund across the stream is made by putting locally available boulders in a mesh of steel wires and anchored to the stream banks.
3. The height of such structures is around 0.5 m and is normally used in the streams with width of less than 10 m.
4. The excess water over flows this structure storing some water to serve as source of recharge. The silt content of stream water in due course is deposited in the interstices of the boulders in due course and with growth of vegetation, the bund becomes quite impermeable and helps in retaining surface water runoff for sufficient time after rains to recharge the ground water body.

Rain Water Harvesting through Percolation Tank:-

1. Percolation tank is an artificially created surface water body, submerging in its reservoir a highly permeable land so that surface runoff is made to percolate and recharge the ground water storage.
2. Percolation tank should be constructed preferably on second to third order streams, located on highly fractured and weathered rocks which have lateral continuity downstream.
3. The recharged area downstream should have sufficient number of wells and cultivable land to benefit from the augmented ground water.
4. The percolation tanks are mostly earthen dams with masonry structure only for spillway. The purpose of the percolation tanks is to recharge the ground water storage and hence seepage below the seat of the dam is permissible for dam's up to 4.5 m height cut off trenches are not necessary and keying and benching between the dam seat and the natural ground is sufficient.

Rain water harvesting through Check Dams/Cement Plugs/Nala Bunds :-

1. Check dams are constructed across small streams having gentle slope. The site selected should have sufficient thickness of permeable bed or weathered formation to facilitate recharge of stored water within short span of time
2. The water stored in these structures is mostly confined to stream course and the height is normally less than 2 m and excess water is allowed to flow over the wall. In order to avoid souring from excess runoff water cushions are provided at downstream side.
3. To harness the maximum runoff in the stream, series of such check dams can be constructed to have recharge on regional scale
4. Clay filled cement bags arranged as a wall is also being successfully used as a barrier across small nalas at places. Shallow trench is excavated across the nala and asbestos sheets are put on two sides. The space between the rows of asbestos sheets across the nala is backfilled with clay. Thus a low cost check dam is created. On the upstream side clay filled cement bags can be stacked in a slope to provide stability to the structure.

Rain Water Harvesting through Recharge Shaft:-

- 1) This is the most efficient and cost effective technique to recharge unconfined aquifer overlain by poorly permeable strata
- 2) Recharge shaft may be dug manually if the strata are of non-caving nature. The diameter of shaft is normally more than 2 m.
- 3) The shaft should end in more permeable strata below the top impermeable strata. It may not touch water table.
- 4) The unlined shaft should be backfilled. initially with boulders/cobbles followed by gravel and coarse sand.
- 5) In case of lined shaft the recharge water may be fed through a smaller conductor pipe reaching up to the filter pack.
- 6) These recharge structures are very useful for village ponds where shallow clay layer impedes the infiltration of water to the aquifer.
- 7) It is seen that in rainy season village tanks are fully filled up but water from these tanks does not percolate down due to siltation and tube wells and dug wells located nearby remain dried up. The water from village tanks get evaporated and is not available for the beneficial use.
- 8) By constructing recharge shaft in tanks, surplus water can be recharged to ground water Recharge shafts of 0.5 to 3 m diameter and 10 to 15 m deep are constructed depending upon availability of quantum of water. The top of shaft is kept above the tank bed level preferably at half of full supply level. These are back filled with boulders, gravels and coarse sand.
- 9) In upper portion off or 2 m depth, the brick masonry work is carried out for the stability of the structure.
- 10) Through this technique all the accumulated water in village tank above 50% full supply level would be recharged to ground water. Sufficient water will continue to remain in tank for domestic use after recharge

Rain Water harvesting through Dug well Recharge:-

1. Existing and abandoned dug wells may be utilized as recharge structure after cleaning and desalting the same.
2. The recharge water is guided through a pipe from desalting chamber to the bottom of well or below the water level to avoid scouring of bottom and entrapment of air bubbles in the aquifer.
3. Recharge water should be silt free and for removing the silt contents, the runoff water should pass either through a desalting chamber or filter chamber.
4. Periodic chlorination should be done for controlling the bacteriological contaminations.

Ground Water Dams or Sub-surface Dykes:-

1. Sub surface dyke or under-ground dam is a subsurface barrier across stream which retards the base flow and stores water upstream below ground surface. By doing so, the water level in upstream part of ground water dam rises saturating other wise dry part of aquifer the site where sub-surface dyke is proposed should have shallow impervious layer with Wide valley and narrow outlet.
2. After selection of suitable site a trench of 1-2 m wide is dug across the breadth of stream down to impermeable bed. The trench may be filled with clay or brick / concrete wall up to 0.5 m below the ground level.
3. For ensuring total imperviousness PVC sheets of 3,000 PSI tearing strength at 400 to 600 gauge or low density polythene film of 200 gauge can also be used to cover the cutout dyke faces.
4. Since the water is stored within the aquifer submergence of land can be avoided and land above the reservoir can be utilized even after the construction of the dam. No evaporation loss from the reservoir and no siltation in the reservoir take place. The potential disaster like collapse of the dams can also be avoided.

Conclusion :-

Rainwater harvesting is one of the most effective methods of water management and water conservation, it is a very useful process during rainy season and during the scarcity of water, by doing this process we can save water for domestic purpose drinking purpose and for future needs. The method of ground water recharge mainly are urban and rural area through rooftop rain water and storm water harvesting in to the recharge pits, trench, tube well and recharge the wells especially in rural area rain water harvesting through gully plug, cubature band, percolation tank, structure, check dams/nala band and dug well recharge and ground water dams. Rain water harvesting is the process of collection of rainwater from surface on which rain falls, filtering it and storing it for multiple use. It is very simple and affordable process. with the decreasing availability of water. Rain water harvesting is the best option.

References :-

1. Center for science and environment making water everybody's business, New Delhi. 2001.
2. National drinking water mission, water harvesting system reference
3. manual.
4. P. m. Natarajan & s. kallolika- rain water harvesting new approaches for sustainable water resources development, sarma sanatorium press, 2004.
5. R. N. Athanale- water harvesting and sustainable supply in India, center for environment education and rawat publication-2003.
6. Rainwater harvesting -a publication of national institute of hydrology,
7. roorkee.
8. Rajiv Gandhi national drinking water missions handbook on rain water
9. harvesting, Gov. of India, New Delhi, 1998.
10. <http://www.rainwaterharvesting.org/howtoharvest>.
11. <http://www.gdrc.org/rainwaler/water>
12. <http://www.rainwaterwekepcdiya>.

Cyber Attack, Security and Cyber Hygiene

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Abstract

Cyber security is the application of technologies, processes and controls to protect systems, networks, programs, devices and data from cyber attacks. It aims to reduce the risk of cyber attacks and protect against the unauthorized exploitation of systems, networks and technologies. Cyber security measures are designed to combat threats against networked systems and applications, whether those threats originate from inside or outside of an organization. *Cyber hygiene* refers to the steps that users of computers and other devices can take to improve their online security and maintain system health.

Introduction

Since the [Internet's](#) arrival and with the digital transformation initiated in recent years, the notion of cyber security has become a familiar subject both in our professional and personal lives. Cyber security and cyber threats have been constant for the last 50 years of technological change. In the 1970s and 1980s, computer security was mainly limited to academia until the conception of the Internet, where, with increased connectivity, computer viruses and network intrusions began to take off. After the spread of viruses in the 1990s, the 2000s marked the institutionalization of cyber threats and cyber security. Finally, from the 2010s, large-scale attacks and government regulations started emerging. However, the 1970s and 1980s didn't have any grave computer threats because computers and the internet were still developing, and security threats were easily identifiable. Most often, threats came from malicious insiders who gained unauthorized access to sensitive documents and files. Although malware and network breaches existed during the early years, they did not use them for financial gain. However, by the second half of the 1970s, established computer firms like IBM started offering commercial access control systems and computer security software products. A strong cyber security strategy has layers of protection to defend against cyber crime, including cyber attacks that attempt to access, change, or destroy data; extort money from users or the organization; or aim to disrupt normal business operations.

Elements of Cyber Security



Critical infrastructure security - Practices for protecting the computer systems, networks, and other assets that society relies upon for national security, economic health, and/or public safety.

Network security - Security measures for protecting a computer network from intruders, including both wired and wireless (Wi-Fi) connections.

Application and Information security - Processes that help protect applications operating on-premises and in the cloud. Data protection measures, such as the General Data Protection Regulation (GDPR) that secure your most sensitive data from unauthorized access, exposure, or theft.

Cloud security - Specifically, true confidential computing that encrypts cloud data at rest (in storage), in motion (as it travels to, from and within the cloud) and in use (during processing) to support customer privacy, business requirements and regulatory compliance standards.

End-user education - Building security awareness across the organization to strengthen endpoint security.

Disaster recovery - Tools and procedures for responding to unplanned events, such as natural disasters, power outages etc.

Common cyber threats

The latest cyber security threats are putting a new spin on “known” threats, taking advantage of work-from-home environments, remote access tools, and new cloud services. These evolving threats include:

Malware: The term “malware” refers to malicious software variants such as worms, viruses, Trojans, and spyware that provide unauthorized access or cause damage to a computer. Malware attacks are increasingly “fileless” and designed to get around familiar detection methods, such as antivirus tools, that scan for malicious file attachments.

Ransom ware: Ransom ware is a type of malware that locks down files, data or systems, and threatens to erase or destroy the data or make private or sensitive data to the public unless a ransom is paid to the cyber criminals who launched the attack.

Phishing / social engineering: Phishing is a form of social engineering that tricks users into providing their own personally identifiable information or sensitive information. In phishing scams, emails or text messages appear to be from a legitimate company asking for sensitive information, such as credit card data or login information.

Insider threats: Insider threats can be invisible to traditional security solutions like firewalls and intrusion detection systems, which focus on external threats.

Distributed denial-of-service attacks: A DDoS attack attempts to crash a server, website or network by overloading it with traffic, usually from multiple coordinated systems. DDoS attacks overwhelm enterprise networks via the simple network management protocol, used for modems, printers, switches, routers, and servers.

Advanced persistent threats: In an APT, an intruder or group of intruders infiltrate a system and remain undetected for an extended period. The intruder leaves networks and systems intact so that the intruder can spy on business activity and steal sensitive data while avoiding the activation of defensive counter measures.

Man-in-the-middle attacks: Man-in-the-middle is an eavesdropping attack, where a cyber criminal intercepts and relays messages between two parties in order to steal data.

Privilege escalation: Privilege escalation describes a situation where an attacker with some level of restricted access is able to, without authorization, elevate their privileges or access level.

Reverse engineering: Reverse engineering is the process by which man-made object is deconstructed to reveal its designs, code, architecture, or to extract knowledge from the object.

Spoofing: Spoofing is an act of masquerading as a valid entity through falsification of data (such as an IP address or username), in order to gain access to information or resources that one is otherwise unauthorized to obtain.

Tampering: Tampering describes a malicious modification or alteration of data.

Security measures

A state of computer "security" is the conceptual ideal, attained by the use of the three processes: threat prevention, detection, and response. These processes are based on various policies and system components, which include the following:

User account access controls and cryptography can protect systems files and data.

Firewalls are the most common prevention systems from a network security perspective as they can shield access to internal network services, and block certain kinds of attacks through packet filtering. Firewalls can be both hardware- or software-based.

Intrusion Detection System products are designed to detect network attacks in progress and assist in post attack forensics, while audit trails and logs serve a similar function for individual systems.

Response is defined by the assessed security requirements of an individual system and may cover the range from simple upgrade of protections to notification of legal authorities and counter-attacks.

Cyber hygiene

Cyber hygiene, or cyber security hygiene, is a set of practices organizations and individuals perform regularly to maintain the health and security of users, devices, networks and data. The goal of cyber hygiene is to keep sensitive data secure and protect it from theft or attacks.

Common cyber hygiene problems

Some of the problems which cyber hygiene is designed to address include:

1. **Security breaches** – including threats from hackers, phishing, malware, and viruses.
2. **Data loss** – hard drives and online cloud storage which are not backed up can be vulnerable to hacking, corruption, or other issues which could result in losing data.

3. **Out of date software** – which can leave your device more vulnerable to online attacks.
4. **Older antivirus** – security software that isn't kept up to date will be less effective at protecting you against the latest cyber threats.

How to ensure cyber hygiene?

There are two critical aspects for cyber hygiene for individuals -developing regular routines or habits and using the right tools. Regular routines or habits: Cyber hygiene isn't a one-off event it's something that has to be practiced regularly. One can create habits by setting automated reminders or adding dates to the calendars for different tasks. These might include scanning for viruses using antivirus software, changing your passwords, keeping apps, software, and operating systems up to date, and wiping hard drive.

Use of right tools:

A network firewall –Prevents unauthorized users from accessing websites, mail servers, and other sources of information that can be accessed from the internet.

Data wiping software – Whenever introduce new software, add on hardware, or modify system files, there is a risk of losing personal data. Using data-wiping software enables to clear out data that don't need and wipe it clean from the hard drive.

A password manager – Using strong, complex passwords which you change regularly is an important aspect of internet hygiene. Using a password manager can help you to keep track of multiple passwords.

High quality antivirus software –Performs automatic device scans, detects and removes malicious software, and protects from a range of online threats and security breaches.

Conclusion

Cyber security is one of the most important aspects of the fast-paced growing digital world. The threats of it are hard to deny, so it is crucial to learn how to defend from them and teach others how to do it too. This paper explores the various cyber threats and how to maintain proper cyber-hygiene so keep individuals as well as a group of organizations safe from different cyber attackers, cyber threats and cyber-risks. From our study we find that Cyber Hygiene will provide a better protection, better security and also in monitoring and maintenance of the networks.

References:

1. https://en.wikipedia.org/wiki/computer_security
2. https://www.google.com/search?q=cyber+security&ei=70r6yaexgdsw4-ep_5cruas&ved=0ahukewjn5k7p1ud1ahvuyzgghx_icrcq4dudca4&uact=5&oq=cyber+security&gs_lcp=cgdnd3mtd2l6eankbahbgabkbahggabqafgayaboahaaeacaaqciaqcsaqcyaya&sclient=gws-wiz
3. <https://www.kaspersky.com/resource-center/preemptive-safety/cyber-hygiene-habits>

Mercury Chloride induced anatomical malformation in the developmental biology of avian Model: *Gallus gallus*

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Abstract

Heavy metals such as lead, cadmium and mercury are found widely spread in the environment by different industrial and agricultural processes. The present study enlightens on the effect of mercury chloride against development of chick embryo. Miscible Mercury chloride was dissolved in distilled water and injected (0.1 ml/egg) into the air sac on day 1st day of incubation. Respective doses were again inoculated on 5th and 10th day respectively. After 15th day of incubation, live embryos were removed from the eggs and examined for overall developmental malformations. In all groups, the morphological defects observed were developmental of abnormal short beak, reduced body weight, omphalocele, anophthalmia, acrania anencephaly, twisted leg etc. All the deformities showed time dependent teratogenic effects in all the experimental developing embryos, which showed toxicity of HgCl₂.

Key words- Mercury chloride, omphalocele, anophthalmia, acrania, anencephaly

Introduction

Emission of heavy metals in the environment take place from mining and industrial wastes, fertilizers, paints, treated woods, vehicle emissions, lead-acid batteries etc. In the urban area motor vehicle emission found major source of airborne contaminants including As, Cd, Co, Ni, Zn, Pb, etc. (Dewan, 2008). Heavy metals such as lead, cadmium and mercury are widely distributed in the environment as the result of different industrial and agricultural processes (Chittoor, 2015). Once contaminated with metals, soil can become a potential source of toxicants for plants and animals throughout the life span (Sridhara et al., 2008). According to EPA (Environmental Protection Agency, 2010) As, Cd, Pb and Hg were reported more toxic metals to the environment against animals including human. Number of embryological malformations were found due to absorption of Hg in fetal and postnatal period (Pandey and Madhuri, 2014). Heavy metals can disturb body's metabolic functions through various ways. Heavy metals are natural elements of the geosphere but, excessive use and due to anthropogenic activities, metallic contents have interfered most of the biogeochemical cycles (Alloway, 2004). Moreover, metals have bioaccumulation capacity in vital body organs such as liver, heart, kidney and brain leading to anatomical and functional deformities. Once heavy metals entered within the biological systems, they can cause histological, biochemical and functional changes at the cell level. For example, Mercury has number of teratogenic effects where fate and action of mercury is depends on its chemical form. Heavy exposure to inorganic mercury may result in damage to the gastrointestinal tract, the nervous system, and the kidneys (EPA, 2010). Inorganic mercury compounds enter water bodies by different ways and accelerate a process of methylation (Gilmore and Henry, 1991). Inorganic mercury is most readily converted to methylmercury under anaerobic conditions in marine or freshwater systems such as wetlands, lakes and reservoirs. Although recent evidence suggests that the significant methylation may also occur in terrestrial systems (Rimmer et al. 2005 and Driscoll et al. 2007). Mercury (II) or mercuric salts are much more common in the environment than mercury (I). These salts, if mixed in water, can cause number of lethal effects on flora and faunal diversity within, so considered as the toxic metals. (Aliakbar et al., 2010). Mercury reported as powerful neurotoxin that poses significant health risk to vertebrates and Invertebrates (D'Itri and D'Itri, 1978 and Wolfe et al. 1998) Intoxication of mercury may be by inhalation, ingestion or absorption through the skin and may be highly toxic and corrosive once absorbed into blood stream. Mercury combines with proteins in the plasma or enters the red blood cells (Alanna, 2013). Liver proved to be site of accumulation, leading to deterioration of hepatic cells and irregularities in metabolized pathways (Wadaan, 2009). It has also been observed that, mercury intensifies the lipid peroxidation (Mahboob et al., (2001).

Avian chick embryo is best model for the study of developmental stages in both birds and in mammals, for observing varied harmful effects of developing embryo (Yamamoto, 2012). Several metals enter in the body of birds via food, drinking and by mechanism of geophagy. The rate of heavy metal absorption varies and depending on species physiology, metal properties and bio-availability in the environment (Nighat et al., 2013). Considering the toxic impact of some metals including HgCl₂ against vertebrate and invertebrate animals the above problem was selected to observe effect of Mercury chloride against avian vertebrate model *Gallus gallus*. The observations were documented and interpreted with overall features of developmental biology of experimental model used in the present investigation.

Materials and Methods

Materials - Fertilized eggs of *Gallus gallus* were obtained from a Central Hatchery, Kolhapur. Same sized eggs were collected from hatchery. Considering the shape, size and weight eggs were selected for experiment. All the experimental Eggs were incubated in an artificial egg hatcher incubator (MSW-233) maintaining at 37.5°C in 65-75% relative humidity. The sterile and aseptic conditions were maintained throughout the experimental duration.

Selection of Intoxicant - For the present investigation heavy metal in the form of inorganic Mercury Chloride (HgCl₂) was used to induce toxicity. Working solution was prepared by complete dissolution of Mercury into distilled water. Working solution was used in the present investigation, against egg development as 0.5 ppm, 1.0 ppm, 1.5 ppm, 2.0 ppm, and 2.5 ppm respectively. Prepared doses of 0.1 ml working solution were intoxicated by applying standard intoxication protocol.

Inoculation of dose and experimental design - Selected experimental eggs were divided into six groups including control. Each group consist of 10 eggs. Before inoculation of dose eggs were wiped with 70% ethanol. Micro hole was made with the help of sterilized needle, (31-G) Needle was used for safely and correct intoxication. Needle was inserted into hole taking precaution to induce dose into air sac. After inoculation all the experimental eggs were kept into maintained incubator for the duration of 15 days. Up to 15 days, respective doses were inoculated three times i.e., prior to the 1st day, 5th and on 10th day respectively by applying all precaution and standard protocol for inoculation. After completion of total experimental exposure duration all eggs were dissected without disturbing the normal development of embryo. After complete and successful removal of developing embryo from every egg, embryos were subjected for record of weight, size, shape and assessment of external morphological features. Visual anatomical features were observed and reported. All observation were compared with control and interpreted for developed interpreted for formed anomalies due to exposure dependent induction of mercury chloride. Statical analysis of data was made depending upon morphological feature for all the experimental embryos and were compared with control embryos. The procedure was followed thrice for to observe better and conform results in the present investigation.

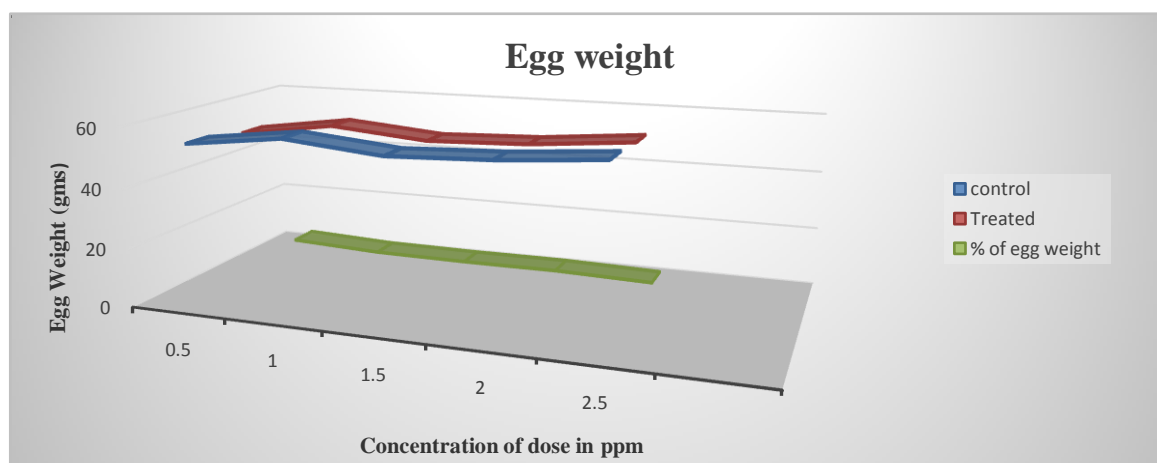
Results

Weight of Eggs - For the above experiment intoxication of mercury chloride for the different period of exposure up to 15 days. It has been observed that, dose dependent egg weight loss was found with respective mercury chloride induction. About in 2.33% eggs weight loss were observed against 0.5 % ppm induced embryo. Compare to this significant decreasing the egg weight was observed in the developing embryos upto 2.5 ppm of induced dose. In the above experiment remarkable weight loss was found at the high dose of mercury chloride 2.5 ppm upto 15 days of exposure. Above result indicated that mercury chloride depending upon its concentration and bioaccumulation capacity played role in the restriction of growth and development.

Table No. 1: Weight of control and treated egg,

Sr. No.	Dose (ppm)	Treated Egg Weight (gms)		Percent Reduction in egg weight
		Egg weight before incubation (gms)	Egg weight after incubation (gms)	
1.	0.5	53.93± 1.6	52.67± 1.2	2.33
2.	1.0	54.55± 0.6	53.25± 1.3	2.38
3.	1.5	55.71± 2.4	54.32± 0.7	2.49
4.	2.0	57.75± 1.2	56.20± 1.4	2.68
5	2.5	58.11± 0.9	56.13± 2.9	3.40

Graph No. 1: Graphical representation of Egg weight.



Weight of Embryo

In the present investigation eggs were put for control and treated groups. For the control group 5 eggs was used, the weight of eggs and weight of embryo taken before incubation and after 15 days of incubation (Table No. 3). There was a minuet depletion in the weight of egg after 15 days. In 15 days, incubated eggs contain embryo, and remaining nutrient material, the weight of separate embryo was 35.23 gm, 32.78 gm, 31.43 gm, 30.74 gm and 29.43 gm respectively, remaining weight was nutrient material.

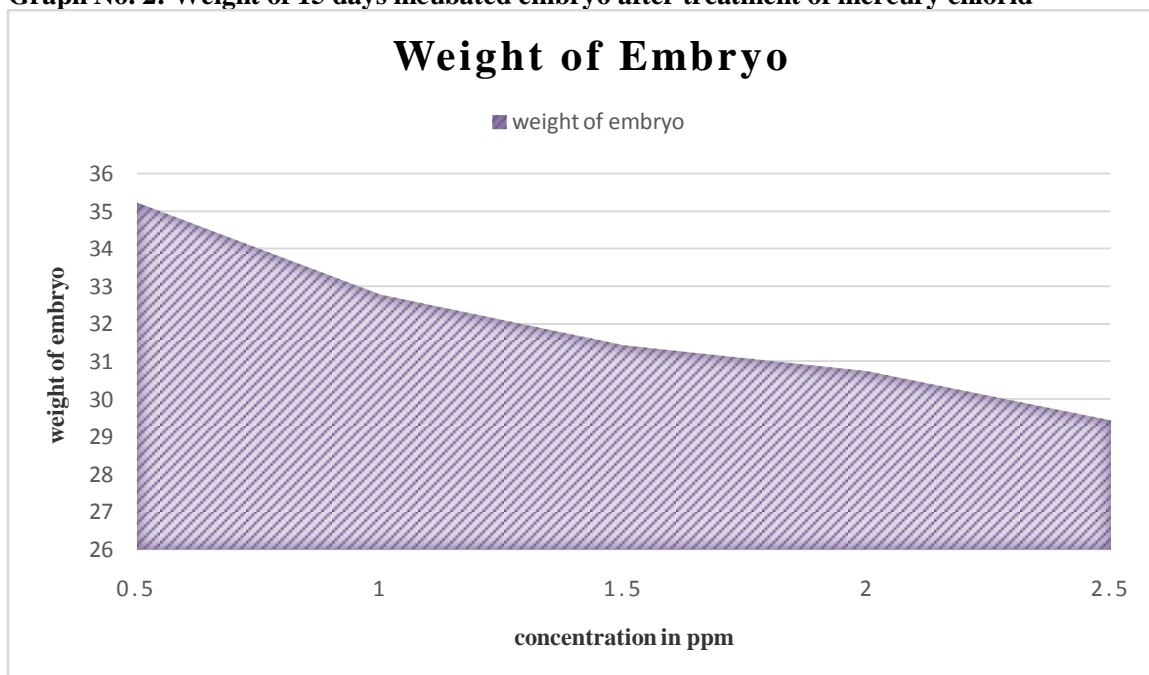
In the treated group, 6 eggs where experimental eggs were treated against concentration, 0.1ml from 0.5 ppm concentration their weight was about 53.93 ± 1.6 gm before incubation, after 15 days incubation egg weight was about 52.67 ± 1.2 gm and the weight of embryo was 35.23 ± 3.2 gm. As compare to control group, the weight of embryo was decreased in the treated group, because of Mercury Chloride. In 1ppm concentration the egg weight before incubation was 54.55 ± 1.3 gm and after incubation it was 53.25 ± 1.3 gm and embryo weight were 32.78 ± 4.6 gm. simultaneously, 1.5 ppm, 2 ppm and 1.5 ppm concentration egg weight before incubation was 55.55 ± 0.6 gm, 55.71 ± 2.4 gm and 58.11 ± 0.9 gm after 15 days incubation there was changes in egg weight 54.32 ± 0.7 gm, 56.20 ± 1.4 and 57.13 ± 0.9 gm. The weight of embryo decreases as concentration of ppm increases. After 15 days embryo weight was 31.43 ± 7.6 gm, 30.74 ± 2.5 gm and 29.43 ± 4.1 gm respectively.

In Treated group, the difference between the total egg weight and embryo weight is reduced than that of the control group. Graphical representation shows, concentration of Mercury chloride increases weight of embryo decreases. Mercury chloride alters the weight of embryo and also barrier in development of embryo and growth of embryo.

Table No. 2: Weight of 15 days incubated embryo after treatment of mercury chloride.

Sr. No.	Concentration in ppm	Treated Eggs weight (gms)		Weight of embryo (gms)
		Egg weight before Incubation (gms)	Egg weight after 15 days of Incubation (gms)	
1.	0.5	53.93 ± 1.6	52.67 ± 1.2	35.23 ± 3.2
2.	1.0	54.55 ± 0.6	53.25 ± 1.3	32.78 ± 4.6
3.	1.5	55.71 ± 2.4	54.32 ± 0.7	31.43 ± 7.6
4.	2.0	57.75 ± 1.2	56.20 ± 1.4	30.74 ± 2.5
5.	2.5	58.11 ± 0.9	57.13 ± 0.9	29.43 ± 4.1

Graph No. 2: Weight of 15 days incubated embryo after treatment of mercury chlorid



Embryological anomalies

The chick embryo was examined for developmental abnormalities. The normal chick embryo (Fig.1) has showed normal development of body. Up to 15-day experimental embryos showed after inoculation of Mercury chloride (Fig. 2 to 8). Embryonic deformities were recorded against mercury chloride where, after 15 days of chick embryo showed number of developmental anomalies (plate no.1). The brain defect in chick embryo there was retardation of formation of cranium on the brain that's a) Acrania, due to the mercury chloride, defect in formation of eyes i.e b) Anophthalmia and also embryo shows the abdominal wall defect or the no formation of abdominal wall i.e c) Omphalocele. Fig. 3 The deformities in eye formation, one side was well formed and to the other side of eye it was completely undeveloped, this was a defect of eye i.e Anophthalmia. Fig. 4 shows Omphalocele i.e deformities regarding the formation of abdominal wall. Fig. 5 shows the short beak formation due to the mercury chloride induction in egg. Fig. 6 shows Anencephaly i.e large part of brain absent, and also shows the twisted leg. Fig. 7 shows that Acrania, anophthalmia, Omphalocele, Anencephaly and also twisted leg. Acrania, abnormal short beak, twisted legs, short fore limb and also bulginess on dorsal side showed by fig. 8.

In the experimental embryos as per observation most of the external developmental body parts were found under developed. Some embryos were lost the parts due to intoxication of HgCl₂.

Discussion

Animal studies are important because, in some instances, they are good resources for providing information about mechanism of teratogenicity. Toxic agent can cause similar patterns of abnormalities in several species, depending upon toxicity. As per literature available greater the dose of methylmercury exposed to embryo, it develops number of deformities. (Heinz et al., 2011). Similarly, Hoffman and Moore, (1979) applied methylmercury chloride to the shell of mallard eggs and observed the deformities like exencephaly, hydrocephaly, missing or small eyes, gastroschisis, bill defects, stunning and scoliosis. Birge and Roberts (1976) injected methyl mercury into the yolk of chicken egg, they noted observed and developmental deformities of the brain, eyes and beak in the experimental chick embryo.

Consistent abnormalities were seen in survived embryos treated with mercury chloride including eye defects as anophthalmia, Omphalocele, Acrania, and Anophthalmia. (Plate 1). As an effect of toxicants weight loss of egg and weight of embryo as compare to normal egg and embryos. Gilani and Alibhai, (2009) reported biochemical alterations in nucleic acid and protein synthesis mechanism resulting to reduced body size and retardation of growth. Ridgway and Karnofsky, (1952) studied intoxication effect in heavy metals Lead and Cobalt causing remarkable effect on the central nervous system and abnormal brain hemorrhage of chick embryo. Additionally, embryos treat with metals showed associated neck, eyes and limb developmental defect, hemorrhage and growth retardation with reduced overall body weight (Gilani and Alibhai, 1990).

Similarly in our experiment injection of Cadmium Sulphate has decreased the body weight of chick embryo as compare to the control group. Weight of control group was 22.61 gm after inoculation of cadmium sulphate, body weight decreased up to 21.14 gm (Rita Szabo et al., 2017). 0.1 ml of mercury chloride from 0.5 ppm concentration was treat to eggs their weight was about 53.93± 1.6 gm before incubation, after 15 days incubation egg weight was about 51.67± 1.2 gm and the weight of embryo was 30.74± 2.5 gm. similarly, when concentration was increases, egg weight and embryo weight was decreases.

Heinz et. al., (2011) observed that 0.4 µg/gm Methylmercury against chick embryo as per exposure period showed number of deformities like crossed bill, gastroschisis, exencephaly, microphthalmia, curled toes. There are number of references available, where pesticides insecticide and chemical compounds can also responsible for causing deformities in developing chick embryo. Endosulfan as an organochlorine pesticide which causes high percentage of limb deformities, microphthalmia, microtia and omphalocele. Number of chemicals responsible for causing mild or severe musculoskeletal deformities including incomplete chondrification and ossification of skull, limbs and other body parts. (Mobarak and Al-Asmari, 2011). Qudsi and Jahdali, (2012) Monosodium glutamate is a natural neurotransmitter amino acid and flavoring agent when MSG injected to chick embryo showed congenital malformations such as growth retardation, subcutaneous bleeding, abdominal hernia, brain deformities, bill malformation and monophthalmia.

Conclusion

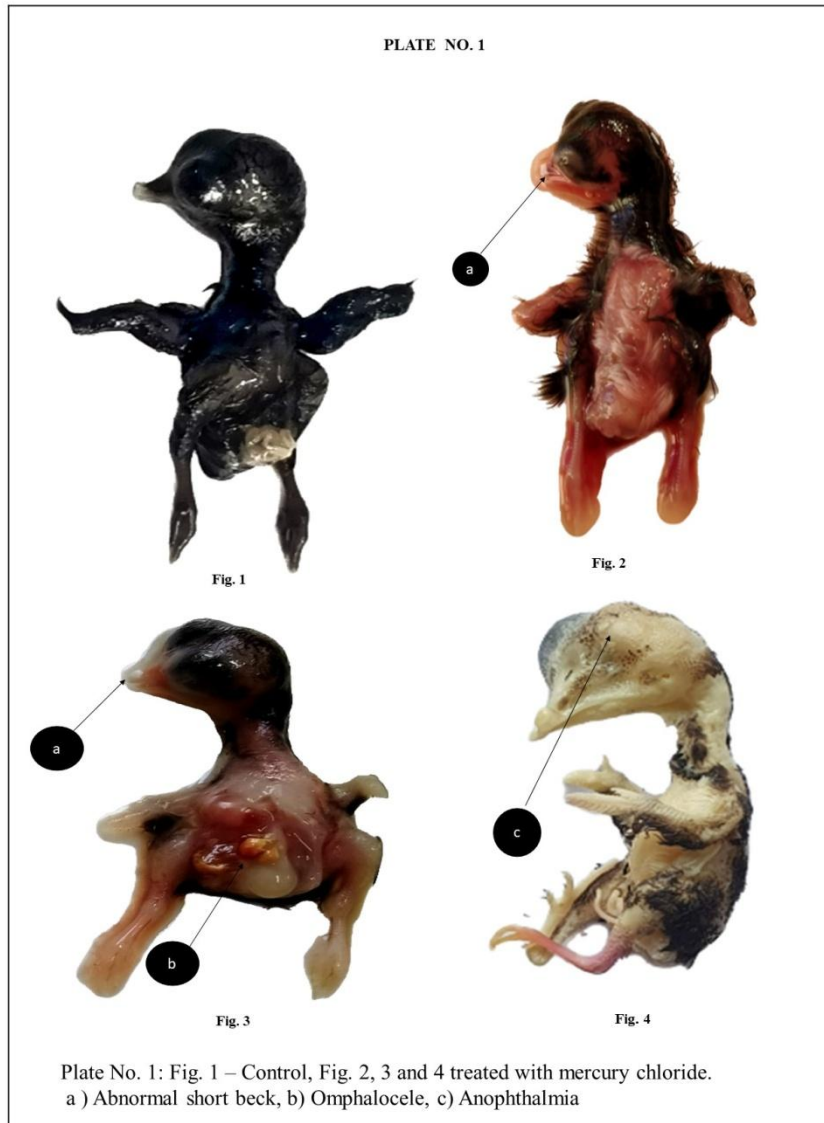
In the field of toxicology, the present investigation conclude that excess consumption or induction of metallic substances can causes pathatic conditions in the development of an organism. Mercury chloride ad a metallic substance depending upon inductive dose and exposure period altered the anatomical, physiological and developmental phases of experimental animal *Gallus gallus*. Dose and exposure dependant teratogenic major defects include Abnormally short beak, Omphalocele, Anophthalmia,

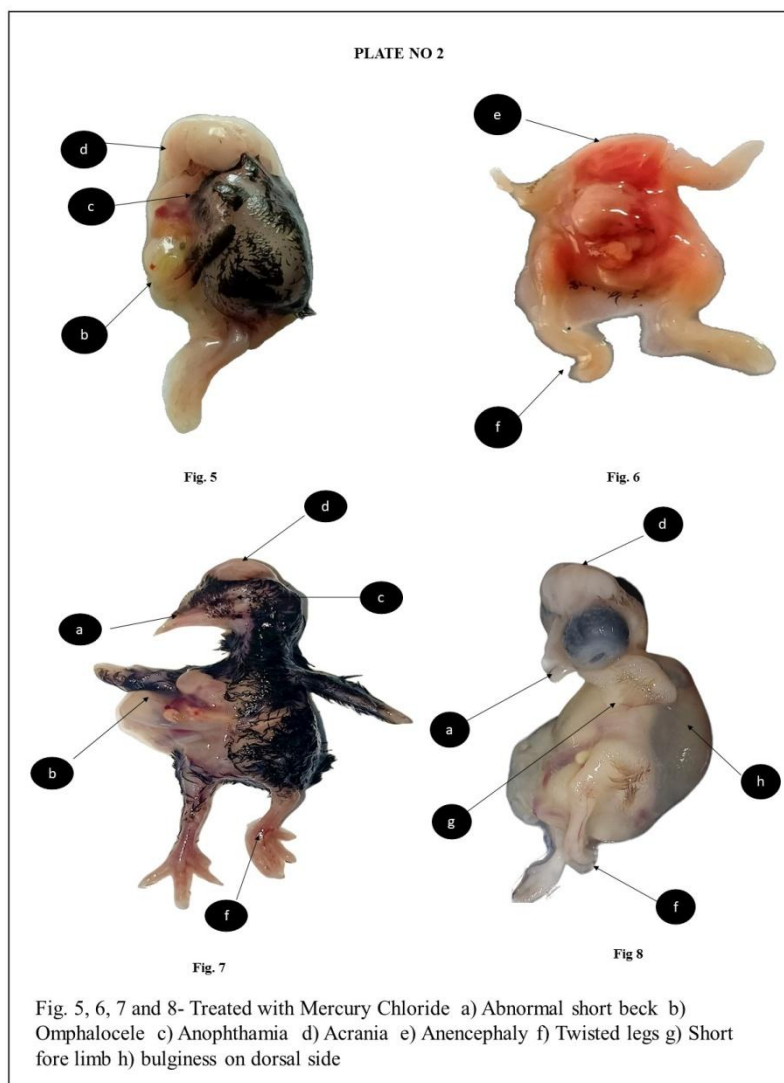
Acrania, Anencephaly and twisted legs. The cytometric and morphometric formed and observed pathological conditions indicate toxicity impact of mercury chloride in the developmental biology of animals. So, excessive utilization or abuse of metallic substances and its derivatives must be restricted.

Further work pertaining to the toxicological effects and developmental biology is in progress in the laboratory.

Acknowledgment

The authors are thankful to Shivaji University, Department of Zoology for providing facilities to carry out present work and also grateful to Dr. Babasaheb Ambedkar Research and Training Institute (BARTI) for providing financial assistant.





References

1. A.J Alloway, (2004) Contamination of soils in domestic gardens and allotments: A brief Overview, *Land Contam. And Reclam*, 12(3), 179-188.
2. Alanna Monhan, (2013) Effect of mercuric chloride on mitochondrial velocity in neurons and glial cells of chick dorsal root ganglia *Bio324 / Neurobiology*.
3. Aliakbar Hedayati, Alireza Safahieh, Ahmad Savari and Jasem Ghofle Marammazi (2010) Detection of Range Finding Test of Mercury Chloride in Yellowfin Sea Bream (*Acanthopagrus latus*) *Iranica Journal of Energy & Environment* 1 (3): 228-233
4. Birge WJ, Roberts OW. (1976) Toxicity of metals of chick embryos. *Bull Environ contam toxicol* 16:319-324.
5. Chittoor Pallavi and prof. K. Thyaga Raju (2015), Effect of lead acetate on chick embryo liver glutathione-s-transferases
6. D'Itri, P. A. and D'Itri, F. M. (1978) Mercury contamination: a human tragedy. *Environ. Manage.* 2: 3-16.
7. Driscoll, C. T., Han, Y., Chen, C. Y., Evers, D. C., Fallon Lambert, K., Holsen, T. M., Kamman, N. C. and Munson, R. K. (2007) Mercury contamination in forest and freshwater ecosystems in the Northeastern United States. *Bio Science* 57: 17-28
8. *Environmental toxicology and Chemistry*, Vol. 30, No.7, pp. 1593-1598.
9. F.Y. Yamamoto, F. FilipakNeto, P.F. Freitas, C.A. Oliveira Ribeiro, C.F. Ortolani-Machado, (2012) Cadmium effects on early development of chick embryos *environmental toxicology and pharmacology* 34, 548-555.
10. Fatma Al-Qudsi and Anan Al-Jahdali (2012) Effect of Monosodium glutamate on chick embryo development. *Journal of American Science* 2012;8 (10).

11. Gary H Heinz 1, David J Hoffman, Jon D Klimstra, Katherine R Stebbins, Shannon L Kondrad, Carol A Erwin (2011). Teratogenic effects of injected methylmercury on avian embryos. *Environmental toxicology and chemistry*, Vol. 30, No. 7, pp. 1593-1598, 2011.
12. Gilmour CC and Henry EA. (1991) Mercury methylation in aquatic systems affected by acid deposition. *Environ. Pollut.*, 71(2–4):131–169.
13. Hoffman DJ, Moore JM. (1979) Teratogenic effects of external egg applications of methylmercury in the mallard, *Anas Platyrhynchos*. *Teratology*, 20:453-461.
14. Kanwal Rehman, Fiza Fatima, Iqra Waheed Muhammad Sajid Hamid Akash (2017) Prevalence of exposure of heavy metals and their impact on health consequences *J Cell Biochem*. 2018; 119:157–184.
15. Mahboob, M., Shireen, K. F., Atkinson, A., et al. (2001) Lipid different organs of mice exposed to low level of mercury. *J. Environ. Sci. Health*, part B36, 687-697.
16. Pandey Govind and Madhuri S. 2014. Heavy Metals Causing Toxicity in Animals and Fishes. *Research Journal of Animal, Veterinary and Fishery Sciences* Vol. 2(2): 17-23.
17. Ridgway, L. P., & Karnofsky, D. A. (1952). The effects of metals on the chick embryo: toxicity and production of abnormalities in development. *Annals of the New York Academy of Sciences*, 55(2), 203–215.
18. Rimmer, C. C., McFarland, K. P., Evers, D. C., Miller, E. K., Aubry, Y., Busby, D. and Taylor, R. J. (2005) Mercury levels in Bicknell's thrush and other insectivorous passerine birds in montane forests of the northeastern United States and Canada. *Ecotoxicology* 14: 223–240
19. Rita Szabo, Geza Szemeredy, Eva Kormos, Jozsef Lehel, Peter Budai (2017). Studies on joint toxic effects of a glyphosphate herbicide (Fozat 480) and a heavy metal (Cadmium) on chick embryos. *AGROFOR International Journal*, vol. 2 Issue No. 3, 2017.
20. Shagufta Nighat, Shahid Iqbal, Muhammad Sajid Nadeem, Tariq Mahmood, Syed Israr Shah (2013) *Turkish journal of zoology* 37:488-500.
21. Shamshad H. Gilani, Yasmin Alibhai, Teratogenicity of metals to chick embryos. *Journal of Toxicology and Environmental Health*, 30:23-31, 1990.
22. Sridhara chary n., kamala c. T., samuel suman raj d. (2008) Assessing risk of heavy metals from consuming food grown on sewage irrigated soils and food chain transfer. *Ecotox. Environ. Safe.* 69, 513.
23. US Environmental protection agency, (2010) <http://www.epa.gov/hg/effects.htm> (accessed on 10th Jan 2011).
24. Wadaan Mam, (2009) Effect of mercury exposure on blood chemistry and liver histopathology of male rats. *Journal Pharmacology and Toxicology.*, 4: 126-131.
25. Wolfe, M. F., Schwarzbach, S. S. and Sulaiman, R. A. (1998) Effects of mercury on wildlife: a comprehensive review. *Environ. Toxicol. Chem.* 17: 146–160.
26. Y. M. Mobarak and M. A. Al-Asmari (2011) Endosulfan impacts on the developing chick embryos: Morphological, Morphometric and skeletal changes. *International journal of zoological research* 7(2): 107-127.

Role of Corporate Sector in Sustainable Development through CSR-With Special Reference To SAIL(Steel Authority of India

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Abstract

Growth of consumerism, industrialization and urbanization have led to over- exhaustion of natural resources and several environmental problems such as Global Warming, Ozone Depletion, Deforestation, Pollution, Land Degradation and Danger to Biological Diversity etc. Economic and environmental performance must go hand in hand. Sustainable development and corporate social responsibility are closely related business concepts that have greatly affected corporate governance in the early 21st century. Sustainable development involves the use of environmentally responsible and efficient operational practices. CSR is mainly focused on three keys pillars of sustainability, namely economy (profit), social (people) and environment (planet), which are known as the 'Triple Bottom Line'. In this paper, an attempt is made to explore environmentally sustainable business practices adopted under CSR through secondary data. The Maharatna Company SAIL is doing significant work in environmental sustainability. The limitation of present study is that out of ten Maharatna companies only one company is taken.

Keywords: Sustainable development, Corporate Social Responsibility, Environment

Introduction:

Industry plays a vital role in the growth and development of a country like India. Growth of consumerism, industrialization and urbanization have led to over- exhaustion of natural resources and several environmental problems such as Global Warming, Ozone Depletion, Deforestation, Pollution, Land Degradation and Danger to Biological Diversity etc. Economic and environmental performance must go hand in hand. Environmental assets contribute to managing risks to economic and social activity, helping to regulate flood risks, regulating the local climate (both air quality and temperature), and maintaining the supply of clean water and other resources¹.

Environmental sustainability is the responsibility to conserve natural resources and protect global ecosystem. Corporate Environmental Responsibility (CER), also known as "Green CSR" has been a global trend for some time. The term derives from Corporate Social Responsibility or CSR, and it refers to the duty of reducing or eliminating the negative impact that companies have on the environment².

The goal of CSR is to voluntarily incorporate economic, social and environmental responsibilities into business operations to build sustainable growth of business and show positive impact to the environment, employees, consumers, shareholders and communities. In short, development is sustainable when current and future generation's needs are fulfilled with the available resources. CSR is mainly focused on three keys pillars of sustainability, namely economy (profit), social (people) and environment (planet), which are known as the 'Triple Bottom Line'. Sustainability involves satisfying customers' needs and achieving organisational goals without compromising CSR responsibilities³.

Sustainable development and corporate social responsibility are closely related business concepts that have greatly affected corporate governance in the early 21st century. Sustainable development involves the use of environmentally responsible and efficient operational practices. Corporate social responsibility, or CSR, involves balancing corporate citizenship and environmental responsibility to give back to the communities in which they operate, which also supports long-term business success. Socially responsible companies preserve environmental resources crucial to future generation⁴.

Review of Literature:

Dr Reena Shyam (2016)⁵, The study has focused on to develop the understanding level of CSR and has also analysed the recent developments of CSR in India. The researcher has tried to view the various policies which govern CSR in India and also discussed some of the cases of different Indian firms and SMEs in CSR. The researcher has listed some of the suggestions to face and speed up the various CSR initiatives in India.

Vijay Vishwakarma (2019)⁶, The research aim to understand the importance of CSR for the economic development of the society. It was concluded that the CSR activity must be based on the size and working style of the organisation. Greater the size of the company, higher will be its CSR program and vice-versa. There is a need to create knowledge amongst all the stakeholders and win the confidence of localities' to develop a conducive environment in the society. CSR cannot be successful unless it is ethical, social, and moral towards social and economic development and thereby make a stronger society.

Antonio Costa; Alessandra Tafuro & others (2021)⁷, To study the integration of corporate social responsibility (CSR) in the strategic planning of universities and on the use of monitoring the results of the strategy of the indicators relating to the pursuit of sustainable development goals (SDGs), there is a lack of studies demonstrating the effective degree of institutionalization of CSR in universities. An analysis was done to constitute a pilot study relating to the Italian university context. The study was carried out through an analysis on the contents of the three-year strategic performance plans consequently, using a Likert scale, the different degrees of institutionalization of CSR in the strategic plan of the universities were coded. There is a low degree of institutionalization of CSR in the Italian university system, even though the literature shows a high cultural and scientific commitment to establish university and post-graduate study courses with corporate social responsibility and sustainable development content and an increasing trend in the use of the accountability tools such as the social report or the sustainability report.

Objective Of The Study:-

- To find the brief view about Indian Law regarding CSR in context of Environmental Sustainability.
- To explore the CSR practices undertaken by one of THE MAHARATNAS Steel Authority of India Limited (SAIL) in relation for maintaining environment sustainability.

Research Methodology:-

This research paper is based on the secondary data sourced from journals, magazines, articles and published reports of corporate sector. Different aspects of environment sustainability are studied in the light of CSR practices by companies.

Findings Of The Study:

Ministry of Corporate Affairs has notified Section 135 and Schedule VII of the Companies Act as well as the provisions of the Companies (Corporate Social Responsibility Policy) Rules, 2014 (CRS Rules) which has come into effect from 1 April 2014 and certain amendment in May 2016. India is the first country in the world to make corporate social responsibility (CSR) mandatory. Businesses can invest their profits in areas such as education, poverty, gender equality, and hunger as part of any CSR compliance. CSR amendments under the Companies (Amendment) Act, 2019. The CSR amendments introduced under the Act now require companies to deposit the unspent CSR funds into a fund prescribed under Schedule VII of the Act within the end of the fiscal year. This amount must be utilized within three years from the date of transfer, failing which the fund must be deposited in to one of the specified funds. CSR is the procedure for assessing an organization's impact on society and evaluating their responsibilities. It begins with an assessment of the Customers; Suppliers; Environment; Communities; and, Employees⁸.

Applicability⁸:

Section 135 of the Companies Act 2013 provides the threshold limit for applicability of the CSR to a Company:

- (a) net worth of the company to be Rs 500 crore or more; or
- (b) turnover of the company to be Rs 1000 crore or more; or
- (c) net profit of the company to be Rs 5 crore or more.

Further as per the CSR Rules, the provisions of CSR are not only applicable to Indian companies, but also applicable to branch and project offices of a foreign company in India. Expenditure on CSR does not form part of business expenditure.

SAIL (Steel Authority of India Limited)⁹ - one of the leading steel producers of India, in its endeavour to strengthen environment management and maintain clean and sustainable environment in and around its plants, mines & other units is committed to:

1. Protect the environment by integrating sound environmental practices for control and prevention of pollution from all its activities.
2. Comply with legal and other requirements pertaining to the environment, forests and wildlife and to go beyond.
3. Systematic approach of environment management by accreditation with Environment Management System.
4. Contribute towards mitigation of climate change through adoption of measures to reduce emission of greenhouse gases, enhancing green coverage, adopting energy efficient technologies, enhancing use of green energy.
5. Promoting innovative environment-friendly processes and products.
6. Ecological restoration of degraded mined out landscapes.
7. Integrate principle of "reduce, recover, recycle and reuse" in its operations for conservation of natural resources, including water, to ensure sustainable future etc.

Some of the following important activities under taken for environment sustainability are:

Environment Management–

1. Six monthly EC compliance report is submitted to the Ministry of Environment, Forest and Climate Change (MoEF&CC) and also uploaded on the company's web portal on regular basis. Real time monitoring of environmental parameters has been done through online monitoring systems and same is linked up with the servers catering to the State Pollution Control Boards as well as the Central Pollution Control Board.
2. SAIL has also been progressively introducing various management practices like ISO 9001, ISO 14001, OHSAS 18001 and SA 8000, at most of its steel plants, mines and units.
3. The commitment of SAIL towards sustainable development is evident from its Sustainable Development (SD) Policy confirming to the Sustainable Development Guidelines issued by Department of Enterprises (DPE) under the Modernisation and Expansion Programme (MEP) implemented across all the plants and units. Some of such technologies are Coke-Dry Quenching (CDQ) in coke oven batteries, Top Gas Pressure Recovery Turbine (TRT), Cast House Slag Granulation Plants and Cast House De-fuming System at blast furnaces, waste-heat recovery from blast furnace stoves and sinter machines, Secondary Emission Control System in steel melting shops, Walking Beam Reheating Furnace with rolling mills etc.
4. SAIL has established a dedicated organization, namely, Environment Management Division (EMD) catering to the diverse environmental implications arising from its multifarious operations ranging from mineral extraction to rolling out finished steel. The EMD, a corporate unit of SAIL, has been bestowed with responsibility to monitor and facilitate the environment management and pollution control activities in SAIL plants, mines and units.
5. All the plants and units put its sincere efforts towards regular maintenance and consistent operation of pollution control equipment/ facilities to provide a clean and green environment. As a result, particulate matter emission was limited to 0.63 kg/tcs in the year 2020-21. Emission of SO₂ is curbed through use of low sulphur coal and desulphurized coke oven gas. For controlling NO₂ emission, specially designed burners are installed along with implementation of some process related changes.

Reduction Of Carbon Footprint

In consonance with this, the Ministry of Steel has already submitted the Intended Nationally Determined Contributions (INDC) for reducing GHG emission in Iron & Steel sector which inter alia projects CO₂ emission of 2.2-2.4 T/tcs in BF-BOF route and 2.6- 2.7 T/tcs in DRI- EAF route by the terminal year 2030, from 3.1 T/tcs during 2005. SAIL has achieved around 18% CO₂ emission reduction during 2020-21 from 2005 level by adopting an array of clean technologies over the years. The specific CO₂ emission during 2020-21 was 2.55 T/tcs.

Water Conservation Measures

1. The Company's environmental policy emphasises to integrate principle of "reduce, recover, recycle and reuse" in its operations for conservation of natural resources, including water, to ensure sustainable future.
2. Under water conservation initiatives it identifies sources of leakage and plugging of them, setting up of Effluent Treatment Plants (ETPs), assessment & analysis of discharged water from various units to identify areas, where fresh make-up water demand can be reduced.
3. SAIL plants and units observe "Water Conservation Month" during a particular month of a year when various events and seminars are organised to build awareness about water conservation and formulate action plans for water conservation. Annual recharge potential of 291 million litres has been created through rain water harvesting systems installed in plants, mines and townships. SAIL has achieved more than 10% reduction in Sp. Water Consumption in last five years.

Waste Water Management

1. SAIL always shows its commitment to strictly monitor the effluent discharged from its operations and treat the water properly. Online effluent quality monitoring systems have been installed at the plants and these systems are uplinked with the servers at the State Pollution Control Boards and Central Pollution Control Board. Environment Impact Assessment (EIA) studies have been carried out for our production facilities to identify its impact on the environment and society. No adverse impact was observed on the water sources or the nearby water bodies because of our operations.
2. All across SAIL plants, actions are taken to achieve the longterm goal of "Zero Liquid Discharge" through adequate treatment and recycling of effluent being discharged through the outfalls at the plant boundary.

Waste Management - A Tool For Circular Economy

1. Management of solid wastes in our company is aimed to extract maximum practical benefits from waste products and to generate minimum amount of waste to comply with the environmental legislation & regulations and economics of disposal in the present scenario.
2. In SAIL, the solid wastes like mill scale, BF flue dust, BF slag and waste refractory bricks are utilised fully. The BF slag gets granulated through cast house slag granulation plants for further use in cement industries as a substitute of clinker. SAIL has achieved a very high BF slag recycling rate of 99% during 2020-21. BOF slag is recycled back in the process through the sinter plant, BF, SMS and used as aggregates in the construction of road and as Railway ballast within the company. Around 62% of BOF slag was utilised during 2020-21.
3. R&D based initiatives are being adopted either through inhouse research wing or in association with other research centres or academies of national repute to improve upon the BOF slag utilization. Some notable amongst the R&D initiatives are given below:
 - $\frac{3}{4}$ Utilisation of Steel Slag in construction of rural roads under the Pradhan Mantri Gram Sadak Yojna (PMGSY)
 - $\frac{3}{4}$ Development of steelslag based cost effective eco-friendly fertilizers for sustainable agriculture and inclusive growth in association ICAR-Indian Agricultural Research Institute (IARI)
 - $\frac{3}{4}$ Study on use of composite slag (mix of BF slag and BOF slag) for making of Portland Slag Cement (PSC) As a result of these concerted efforts, SAIL has achieved 90% utilisation of total solid wastes generated during the year 2020-21.

Greenery Development:

1. CREATION OF CARBON SINK SAIL realizes the role of plantation in overall environment management. Several species of flora and fauna are also preserved in zoological and botanical parks maintained in its townships.
2. In SAIL, more than 35% of land area is under green cover. Structured plantation programmes are being carried out every year in all the plants and mines.
3. During 2020-21, more than 1.72 lakh saplings were planted. An aggregate of 212.14 lakh trees have been planted since inception.
4. Durgapur Steel Plant of SAIL under its Corporate Social Responsibility (CSR) had launched a mission of developing 'Bio Diversity Park-Vasundhara' spreading over a landscape of 409 acres.
5. A project on carbon sequestration through afforestation has been implemented at the site of Rourkela Steel Plant. M/s Tropical Forest Research Institute, Jabalpur, was engaged as the sequestration partner to carry out the project.
6. Over the years, About 250 acres of old barren overburden dumps and water voids in 200 acres of limestone mined out area in Purnapani have been successfully restored to fully functional ecosystem that generates ecosystem services & goods and sequesters CO₂. The restored ecosystem provides many livelihood options for local people at Purnapani.
7. After successful implementation of eco-restoration of Purnapani Limestone & Dolomite Quarry, SAIL has engaged "Institute of Forest Productivity, Ranchi" for eco-restoration of mined out area and waste dumps separately for Kiriburu Iron Ore Mines and Meghahatuburu Iron Ore Mines for the period of four years and five years respectively.

Environmental Management System (Ems) Implementation Environmental Management System (EMS) linked with ISO:14001 is a systematic framework to manage the immediate and long term environmental impacts of an organisation's products, services and processes. SAIL has been a fore bearer in the establishment of the EMS in the steel industry in the Country. In mid 90's, SAIL started implementation of EMS-ISO 14001 in its Salem Steel Plant. Now, all the integrated steel plants, major units and warehouses of SAIL are compliant with EMS ISO: 14001 Standard. Implementation of EMS has helped SAIL plants and units to ensure their performance being always within the applicable regulatory requirements.

References :

1. Tim Everett, Mallika Ishwaran, Gian Paolo Ansaloni and Alex Rubin (2010)
2. Growth and the Environment <https://www.stillmantranslations.com/corporate-responsibility-environment/>
3. <https://news.curtin.edu.my/insight/2020-2/how-corporate-social-responsibility-contributes-to-sustainable-development/>
4. ByChron Contributor, Updated September 10, 2020 <https://work.chron.com/sustainable-development-corporate-social-responsibility-5749.html>

5. Shyam, D.R.(2016) “An Analysis of Corporate Social Responsibility in India.” International Journal of Research – Granthaalayah, vol. 4, no. 5, 2016, pp. 56-64.
6. Vishwakarma, Vijay(2019)“Corporate Social Responsibility (A Literature Review).” Shanlax International Journal of Management, vol. 7, no. 1, 2019, pp. 36–42.
7. Antonio Costa , Alessandra Tafuro ; Marco Benvenuto * and Carmine Viola (2021)Corporate Social Responsibility through SDGs: Preliminary Results from a Pilot Study in Italian Universities;October 2021Administrative Sciences 11(4):117
8. DOI:10.3390/admsci11040117
9. <https://www.india-briefing.com/news/corporate-social-responsibility-india-5511.html/>
10. https://www.sail.co.in/sites/default/files/2021-10/Sustainability-Report%202020_2021.pdf

Stress Management for Women

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Introduction

The role of women in India has changed from being traditional homemaker to an active participant in the nation building. India ranks the second lowest in the group of 20 economies (G20) when it comes to women's participation in the workforce. According to a World Economic Forum (WEF) report from the year, 2014, regarding women's economic participation, India's position seems fixed almost at the bottom even when we compare it to then tire world and not just the 20 major economies. It ranks 124 out of 136 nations. All the BRICS nations rank much higher than India. According to UN Gender Statistics of 2014, India is one of the few countries where the rate of participation of women in the workforce has declined in the last decade from 33.7% in 1991 to 27% in 2012. Although the role of women from reproduction to all household chores and outside is significant, unique and burdensome, they are discriminated and exploited all over. However, the scenario is changing now and the female workers carry not only the load of domestic work but also participate significantly in the economic activities too. In fact, their contribution to the economic activity. *IRACST – International Journal of Commerce, Business and Management (IJCBM)*, ISSN: 2319–2828 Vol. 4, No.3, June 2015 1174 is on the higher side than what is revealed by the different Indian Censuses. In the present age, women are in process of transformation, and they are trying to bring balance between their family life and the professional obligations, which we call as work- life balance. At the time of making balance, some unfavorable situation might generate harmful hormones, which may affect her health. These unacceptable conditions are the source of stress. To successfully manage a stress situation, we must first define what we mean by “stress” and identify what causes it in order to recognize the effects of exposure to stress. Recent dictionary definitions associate the word “stress” with disease. The *Shorter Oxford Dictionary (2007)* describes stress as, “a condition or adverse circumstance that disturbs, or is likely to disturb, the normal physiological or psychological functioning of an individual”. Most recently, work stress has been operationally defined by the *U.K. Health and Safety Executive* as, “The adverse reaction people have to excessive pressures or other types of demand placed upon them”.

Nature of stress:

Although change is a constant process of human life, it becomes the main cause of stress among the work force, because it necessitates adaptation, whether it is perceived as a negative or positive experience. The wide varieties of workplace conditions are associated with the pressure, physical and mental-illness. Thus, change becomes a powerful stress agent; if the stress is managed in a positive manner, it may become healthy and productive. In view of this, it is pertinent to identify and measure the main sources of stress at workplace. Some of them are identified here:

1. **Job related stress:** It includes workload, organizational and physical work environment, long working hours, culture and politics of the organization, the restrictions imposed on behaviour, etc.
2. **Relationship related stress:** It extends within and outside the organization. Changing family status/equations also plays important role in creating stress. Moving out from the organization, city or from family creates anxiety.

Stress associated with the home and work interface: It includes conflicts of loyalty, life events and life crisis and spill over of the demands from one environment to another.

Stress at work can be a real problem to the organization as well as for its workers. Good management and good work organization are the best forms of stress prevention. If employees are already stressed, their managers should be aware of it and know to help. Work related stress is the response people may have when present with work demands and pressures that are not matched to their knowledge and abilities and which challenge their ability to cope. Stress occurs in a wide range of work circumstances but is often made worse when employees feel they have little support from supervisors and colleagues and where they can cope with its demands and pressures. There is often confusion between pressure or challenge and stress and sometimes it is used to excuse bad management practice. In the workplace and at home, stress and other difficult situation are at an all- time high. Factors such as job insecurity, long hours, continuous change and unrealistic deadlines can cause serious problem for workers. According to the [American Academy of Family Physicians \(AAFP\)](#), stress is an expression of the body's natural instinct to protect itself. While the stress response may warn us of immediate danger, like a fast-approaching

car, [prolonged stress](#) can negatively affect your physical and emotional health. “Our stress response was exquisitely honed over millions of years as a protective mechanism,” says [Paul J. Rosch, MD](#), chairman of the American Institute of Stress (AIS) and a clinical professor of medicine at New York Medical College in Valhalla. “That was okay for our ancestors who ran into saber-toothed tigers. The tragedy is that today, it’s not that, but hundreds of things, like getting stuck in traffic jams. And our bodies respond in the same unfortunate fashion, with hypertension, strokes, and ulcers.” According to the [National Women’s Health Information Center](#), the effects of stress on women’s physical and emotional health can range from headaches to stomach trouble to back pain. Specific stress effects include: Stress is your body’s response to certain situations. It is a subjective condition. Something that may be stressful for one person speaking in public, for instance may not be stressful for someone else. Not all stresses are “bad.” For example, graduating from college may be considered a “good” form of stress. Stress can affect your physical health, your mental health, and your behavior. In response to stressful stimuli, your body turns on its biological response. Chemicals and hormones are released that are meant to help your body rise to the challenge. Your heart rate increases, your brain works faster, you have more focus, and you experience a sudden burst of energy. This response is natural and basic; it’s what kept our ancestors from falling victim to hungry predators. Stress overload, however, can have harmful effects. According to the American Psychological Association (APA), more than half of Americans report suffering the health effects of too much stress, and 22 percent say they are under “extreme” stress. We cannot eliminate stress from our lives, but we can learn to avoid and manage it.

Is All Stress Bad?

No, not all stress is bad. In fact, it can be healthy because it helps us avoid accidents, power through unexpected deadlines, or stay clear-minded in chaotic situations. But stress is meant to be temporary. Once we’ve passed the “fight or flight” moment, our bodies should return to a natural state heart rate slows, muscles release, breathing returns to normal. But the circumstances of chronic stress so many of us face as a result of the pressures and demands of our modern lives mean our bodies may frequently be in a heightened state with our heart pumping hard and our blood vessels constricted. Over time, these physiologic demands begin to take a toll on the body. This is the unhealthy side of stress.

Types of Stress

Acute Stress

Acute stress is your body’s immediate reaction to a new challenge, event, or demand the fight or flight response. You may experience a biological response to cope with the pressures of a near-miss automobile accident, an argument with a family member, or a costly mistake at work. Acute stress isn’t always caused by negative stress; it’s also the experience you have when riding a roller coaster or having a person jump out at you in a haunted house. Isolated episodes of acute stress should not have any lingering health effects. In fact, they might actually be healthy for you. Stressful situations give your body and brain practice in developing the best response to future stressful situations. Severe acute stress such as stress suffered as the victim of a crime or life-threatening situation can lead to mental health problems, such as post-traumatic stress disorder or acute stress disorder.

Chronic Stress

If acute stress isn’t resolved and begins to increase or lasts for long periods of time, it becomes chronic stress. Chronic stress can be detrimental to your health. It can contribute to several serious diseases or health risks, such as heart disease, cancer, lung disease, accidents, cirrhosis of the liver, and suicide.

How Should Stress Be Managed?

The goal of stress management isn’t to get rid of it completely. That would be entirely impossible. In fact, stress can be healthy in some situations.

Instead, the goal is to identify a person’s stressors—what it is that causes him or her the most problems, or demands the most energy—and find ways to overcome the negative stress those things normally induce. By managing chronic stress and episodes of acute stress, when possible, you can reduce your risks of stress-related illnesses and disease. You will also feel better, think more clearly, and relate with others better without the distraction of stress.

Stomach Ailments Stress can make you reach for junk or comfort foods, or upset your stomach to the point that you feel like you can’t eat. Common stress-related stomach troubles include cramps, bloating, heartburn, and according to a [study published in November 2017 in the journal *Frontiers in System Neuroscience*](#) even irritable bowel syndrome (IBS), which affects more women than men. Depending on how you respond, these can lead to weight loss or weight gain.

Everyone responds to stress a little differently. Your symptoms may be different from someone else’s. Here are some of the signs to look for:

1. Not eating or eating too much
2. Feeling like you have no control
3. Needing to have too much control
4. Forgetfulness
5. Headaches
6. Lack of energy
7. Lack of focus
8. Trouble getting things done
9. Poor self-esteem
10. Short temper
11. Trouble sleeping
12. Upset stomach
13. Back pain
14. General aches and pains

These symptoms may also be signs of depression or anxiety, which can be caused by long-term stress.

The body responds to stress by releasing stress hormones. These hormones make blood pressure, heart rate, and blood sugar levels go up. Long-term stress can help cause a variety of health problems, including:

Irregular Periods-Acute and chronic stress can fundamentally alter the body's hormone balance, which can lead to missed, late or irregular periods. Researchers have also found that women in stressful jobs are at a 50 percent higher risk for short cycle length (less than 24 days) than women who do not work in high-stress positions.

Acne Breakouts-Raised levels of cortisol in the body can cause excess oil production that contributes to the development of acne breakouts. A 2003 study observed that female college students experienced more breakouts during exam periods due to increased stress.

Hair Loss-Significant emotional or psychological stress can cause a physiological imbalance which contributes to hair loss. Stress can disrupt the life cycle of the hair, causing it to go into its falling-out stage. While you may not notice hair loss during or immediately following a period of stress, the changes can occur three to six months later.

Poor Digestion-Prolonged stress can greatly impact the digestive system by increasing stomach acid, causing indigestion and discomfort, and in some cases contributing to the development of IBS and ulcers. Reducing stress is key to maintaining a healthy digestive system, according to womenshealth.gov.

Depression-Women are twice as likely to experience depression as men, and recent research has looked to differing stress responses and stress reactivity between the sexes to explain this discrepancy. Elevated levels of cortisol resulting from the chronic stress of a long-term, low grade job stress or the acute stress of a difficult life event like death or divorce can act as a trigger for depression.

Insomnia-Most of us know the feeling of tossing and turning at night, thinking over the events of the day or problems at work. Unsurprisingly, stress is a common cause of insomnia, which can in turn lead to difficulty concentrating, irritability and a lack of motivation.

Weight Gain-Research has linked higher levels of cortisol to a lower waist-to-hip ratio in women (i.e. more weight around the belly area), as well as a decreased metabolism. High stress levels are also correlated with increased appetite and sugar cravings, which can lead to weight gain.

Decreased Fertility-While further research is needed to better clarify the link between stress and fertility, recent studies have found that women with high levels of alpha-amylase, an enzyme linked to stress, had a more difficult time getting pregnant. Women with the highest concentration of the enzyme during their menstrual cycle were 12 percent less likely to conceive than women with the lowest concentration of alpha-amylase.

Increased Risk of Heart Disease and Stroke-According to a 2012 study of over 22,000 women, women under high amounts of stress at work were 40 percent more likely to experience a cardiovascular event (a heart attack or stroke) than women who reported low levels of job-related stress. Strokes are also more common among individuals with stressful lives and tightly-wound personalities.

How Can Women Lower Stress Levels?

In a survey of 3,000 people, Robert Epstein, PhD, a senior research psychologist at the American Institute for Behavioral Research and Technology in Vista, California, found that 25 percent of happiness hinges on how well you handle stress. And what was the most important stress management strategy he noticed? Planning — or anticipating what's going to stress you out — and having the tools in place to tamp down the tension. Here are some more tips for managing stress:

Improve your diet. By eating well-balanced meals and skipping junk food, you can improve your physical well-being and, in turn, your emotional health.

Make time for exercise. “We do know that exercise is a phenomenal way of dealing with stress and depression,” says Dr. Heim. Research shows that getting active can lift your spirits by increasing hormones and neurochemicals that can improve your mood.

Find fun ways to relax. Connect with family and friends and people you enjoy being around. Rediscover favorite hobbies — research published in 2013 in the journal has linked pursuits that require focus, like crafting, drawing, or even home repairs, with stress-reducing effects. Other popular stress-busters include yoga, meditation. Finally, if you feel overwhelmed by stress and its effects, talk to your doctor about ways to deal with it. You may learn new techniques for managing stress on your own, or you may find that therapy with a mental health professional will better help you to get it all under control.

Stress Management Strategies

Avoid unnecessary stress

Not all stress can be avoided, and it’s not healthy to avoid a situation that needs to be addressed. You may be surprised, however, by the number of stressors in your life that you can eliminate.

1. **Learn how to say “no”** – Know your limits and stick to them. Whether in your personal or professional life, refuse to accept added responsibilities when you’re close to reaching them. Taking on more than you can handle is a surefire recipe for stress.
2. **Avoid people who stress you out** – If someone consistently causes stress in your life and you can’t turn the relationship around, limit the amount of time you spend with that person or end the relationship entirely.
3. **Take control of your environment** – If the evening news makes you anxious, turn the TV off. If traffic’s got you tense, take a longer but less-traveled route. If going to the market is an unpleasant chore, do your grocery shopping online.
4. **Avoid hot-button topics** – If you get upset over religion or politics, cross them off your conversation list. If you repeatedly argue about the same subject with the same people, stop bringing it up or excuse yourself when it’s the topic of discussion.
5. **Pare down your to-do list** – Analyze your schedule, responsibilities, and daily tasks. If you’ve got too much on your plate, distinguish between the “should” and the “musts.” Drop tasks that aren’t truly necessary to the bottom of the list or eliminate them entirely.

Alter the situation

If you can’t avoid a stressful situation, try to alter it. Figure out what you can do to change things so the problem doesn’t present itself in the future. Often, this involves changing the way you communicate and operate in your daily life.

1. **Express your feelings instead of bottling them up.** If something or someone is bothering you, communicate your concerns in an open and respectful way. If you don’t voice your feelings, resentment will build and the situation will likely remain the same.
2. **Be willing to compromise.** When you ask someone to change their behavior, be willing to do the same. If you both are willing to bend at least a little, you’ll have a good chance of finding a happy middle ground.
3. **Be more assertive.** Don’t take a backseat in your own life. Deal with problems head on, doing your best to anticipate and prevent them. If you’ve got an exam to study for and your chatty roommate just got home, say up front that you only have five minutes to talk.
4. **Manage your time better.** Poor time management can cause a lot of stress. When you’re stretched too thin and running behind, it’s hard to stay calm and focused. But if you plan ahead and make sure you don’t overextend yourself, you can alter the amount of stress you’re under.
5. **Adapt to the stressor** .If you can’t change the stressor, change yourself. You can adapt to stressful situations and regain your sense of control by changing your expectations and attitude.
6. **Reframe problems.** Try to view stressful situations from a more positive perspective. Rather than fuming about a traffic jam, look at it as an opportunity to pause and regroup, listen to your favorite radio station, or enjoy some alone time.
7. **Look at the big picture.** Take perspective of the stressful situation. Ask yourself how important it will be in the long run. Will it matter in a month? A year? Is it really worth getting upset over? If the answer is no, focus your time and energy elsewhere.
8. **Adjust your standards.** Perfectionism is a major source of avoidable stress. Stop setting yourself up for failure by demanding perfection. Set reasonable standards for yourself and others, and learn to be okay with “good enough.”

9. **Focus on the positive.** When stress is getting you down, take a moment to reflect on all the things you appreciate in your life, including your own positive qualities and gifts. This simple strategy can help you keep things in perspective.

Accept the things you can't change

Some sources of stress are unavoidable. You can't prevent or change stressors such as the death of a loved one, a serious illness, or a national recession. In such cases, the best way to cope with stress is to accept things as they are. Acceptance may be difficult, but in the long run, it's easier than railing against a situation you can't change.

1. **Don't try to control the uncontrollable.** Many things in life are beyond our control— particularly the behavior of other people. Rather than stressing out over them, focus on the things you can control such as the way you choose to react to problems.
2. **Look for the upside.** As the saying goes, "What doesn't kill us makes us stronger." When facing major challenges, try to look at them as opportunities for personal growth. If your own poor choices contributed to a stressful situation, reflect on them and learn from your mistakes.
3. **Share your feelings.** Talk to a trusted friend or make an appointment with a therapist. Expressing what you're going through can be very cathartic, even if there's nothing you can do to alter the stressful situation.
4. **Learn to forgive.** Accept the fact that we live in an imperfect world and that people make mistakes. Let go of anger and resentments. Free yourself from negative energy by forgiving and moving on.

Make time for fun and relaxation

1. Beyond a take-charge approach and a positive attitude, you can reduce stress in your life by nurturing yourself. If you regularly make time for fun and relaxation, you'll be in a better place to handle life's stressors when they inevitably come.
2. **Set aside relaxation time.** Include rest and relaxation in your daily schedule. Don't allow other obligations to encroach. This is your time to take a break from all responsibilities and recharge your batteries.
3. **Connect with others.** Spend time with positive people who enhance your life. A strong support system will buffer you from the negative effects of stress.
4. **Do something you enjoy every day.** Make time for leisure activities that bring you joy, whether it be stargazing, playing the piano, or working on your bike.
5. **Keep your sense of humor.** This includes the ability to laugh at yourself. The act of laughing helps your body fight stress in a number of ways.

References

1. <https://www.everydayhealth.com/womens-health/physical-side-of-stress.aspx>
2. <https://www.womenshealth.gov/a-z-topics/stress-and-your-health>
3. http://www.huffingtonpost.in/entry/health-effects-of-stress-women_n_2585625
4. ZENITH International Journal of Multidisciplinary Research Vol.1 Issue 7, November 2011, ISSN 2231 5780 www.zenithresearch.org.in 337 A Study On Stress Management Of Working Women In Coimbatore District Dr. M. Dhanabhakya; V.Anitha Assistant Professor, Department of Commerce, Bharathiar University, Coimbatore - 46.
5. IRACST – International Journal of Commerce, Business and Management (IJCBM), ISSN: 2319–2828 Vol. 4, No.3, June 2015 Women, Work and Stress Management- A Comparative Study of Education And Finance Sectors, Sudha Tiwari ,Assistant Professor, Army Institute of Hotel Management and Catering Technology, Kothanur Post, Bangalore-560077 ,INDIA ; Dr.Rashmi Bansal ,School of Management Studies, Indira Gandhi National Open University, Maidan Garhi, New Delhi-11068,INDIA.
6. Mental Health Status among Married Working Women Residing in Bhubaneswar City, India: A Psychosocial Survey ,Ansuman Panigrahi, Aditya Prasad Padhy, and Madhulita Panigrahi Department of Community Medicine, Kalinga Institute of Medical Sciences, KIIT University, Campus-5, Bhubaneswar, Odisha 751024, India Received 4 February 2014; Accepted 14 February 2014; Published 31 March 2014.
7. Dr. J. Vijayadurai, Mr.S.Venkatesh,2013.A Study on Stress Management among Women College Teachers in Tamilnadu, India.
8. Academic Success Center, Oregon State University, 2011, Adapted from: http://helppguide.org/mental/stress_management_relief_coping.htm
9. The Health line Editorial Team Medically Reviewed on July 11, 2014 by George Krucik, MD, MBA
10. https://en.wikipedia.org/wiki/stress_management

Unemployment and Unemployability: Threat to Demographic Dividend

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Abstract: Unemployment is a term referring to individuals who are employable and actively seeking a job but are unable to find a job. Included in this group are those people in the workforce who are working but do not have an appropriate job. Unemployability essentially means that even if there were available jobs, companies wouldn't hire the student because he is largely substandard and lack skills worth paying for. Demographic Dividend means the economic growth potential that can result from shifts in a population's age structure, mainly when the share of the working-age population (15 to 64) is larger than the non-working-age share of the population (14 and younger, and 65 and older). Unemployment and unemployability plays a vital shape in shaping nation's wealth and overall ratio of GDP. India is an emerging and developing country marching and dreaming towards 5 trillion GDP. Students' protest on road and media showcases huge unrest regarding employment. Hence, an attempt is made to relate unemployment and unemployability as a threat to the usage of Demographic Dividend.

Keywords: unemployment, unemployability, GDP, Demographic Dividend)

Academicians started wondering after publishing of the 5th cut-off list for the sake of admission to B.A. (English and Economics). The cut-off List for the B.A. English was like in Ramjas College 97%, Shahid Bhagat Singh College 95.75%, Shri Venateshwara College 97%, Kiroro Mal College 97.25%. Many years ago, there was 2 to 3% leeway in the cut-off list. But today cut-offs start at 100% so requirement is high even after fifth cut-off list. One will have to be very lucky to get admission. Get admission in Delhi admission seems same as like UPSC exam or being IITian. Many students cannot make it up and miss out. Students' become tense in order to shape their future which seems futile though a piece of paper cannot decide ones' future. Getting degree from reputed or esteemed college does not guaranty jobs in future even IIT and MBA students are unemployed. (FICCI, 2020) reports that over 80% engineering /MBA graduates are unfit for or unable to secure jobs. Because they lack new age technology skills. This is called problem of unemployability. Even in Delhi University it is very hard to find jobs. Campus placements are scarce. Either students go on to prepare for entrance exam or train themselves further. Otherwise, they join the technical course for job, there are millions who's major in college has no relation to what they are doing now. One of the reasons that the world is changing rapidly and we can try out new things. Some new age institutions try to bridge the gap but it's a long road in India.

Between May 2016 and February 2021 India's working population has risen by 11.22 crore. More people leads to more labour, it leads further to more production and culminates to overall growth of Indian GDP. India can replace China as far as manufacturing hub of the world is concerned. In reality, it is not happened. Despite an increase in working people (11.2 crore) the labour force from 2016 to 2021 has declined by 3 crore it happened due to unavailability of jobs. The pandemic cannot be blamed for this failure because CMIE data has revealed that employment opportunities have been falling year by year. In May 2010, working population was 95 crore, out of which 40 crore was in labour force i.e. 48.5%. In February, working population was 105.8 crore, but it is reduced by 40% to 42.85 crore. It indicates a decline of 9 crore labour force in last five years. It was always difficult for neophyte graduates to find a job despite of any political party ruling in Centre or State Government. The situation got worsen in time to time. (SINDWANI, 2020) reports, "As many as 406 million of 1.2 billion Indians are employed as of December 2019. And the unemployment rate is pegged at 7.1% in January 2020. But this joblessness is hitting the youth the most. The country which is known for its youngest populations — is unable to provide them with employment. Only 37% of people in the 20-24 age group are employed — and this situation could lead to dangerous consequences. This is despite the fact that India has 35% of its working population in the 5 to 30 year age bracket. According to experts, this can impact India's economy in the long run. "This should get much more attention from policymakers. Allowed to persist this can leave scars on India's economy and polity for long years," said Kaushik Basu, former Chief Economist of the World Bank."

For the very first time youngsters started protesting on social media out of frustration. (Reporter, 2021) reports, "Rising unemployment in the country, frauds in exam processes, coupled with delays and failures in conducting and concluding various government exams in a given time period, resulted in students and opposition parties trending hash tags on Twitter against the Modi government on Thursday."

The CMIE data reveals the reason behind youths' frustration. Youth unemployment had hit 40% during pandemic and it is now around 25%. It indicates one out of candidates is unemployed. (Report, 2020) Discusses, "Unemployment rate for graduates stands at 18.5 per cent, more than twice the headline rate, according to data for the end of 2019 compiled by CMIE. The report depicts a substantial increase in unemployment rate in urban India, which stands at 9 percent compared to unemployment rate in rural India at 6.8 per cent. The overall unemployment rate for females is at 17.5 per cent versus 6.2 per cent for males. In a more drastic increase, the unemployment rate is as high as 26 per cent for urban females. Mahesh Vyas, CEO, Centre for Monitoring Indian Economy told NDTV, "India's headline unemployment rate is at 7.5 per cent but, this understates the real problem on hand which is of lack of sufficient jobs for young graduates." In May 2016, 53.18% youth were active in the labour force, now it is reduced up to 45.42%. Youth is not getting jobs and started not to find job out of depression. (Johari, 2022) comments, "According to data from the Centre for Monitoring Indian Economy, the country's unemployment rates shot up from 8% in March 2020 to as much as 24% in April 2020 – an immediate impact of the lockdown. As people returned to formal and informal jobs in the following months, unemployment rates shrank once again, falling to 6.5% in November 2020, On January 27, a Covid-19 livelihoods survey released by the Azim Premji University reiterated the problem: at least 20% of those who had lost work during the lockdown were still unemployed in December, with urban areas hit worse than rural and women hit harder than men."

There are several reasons behind unemployment. Investment to Gross Domestic Product (GDP) is dipping. In 2011-12 it was around 34.31% of the GDP, it dipped at a record low of 30.19% of the GDP. It reflects less money from the GDP is being spent on new factories or new businesses. Several blunder mistakes stroked the growth of GDP such as demonetisation and hasty implementation of GST. (Sachdev, 2018) published, "The government failed to recognise when it introduced a tax slab as high as 28% that smaller players were not so far paying excise duties so high. These businesses have gone from paying VAT in the range of 5%-12.5% to a GST of 18%, a rate which is highly disproportionate with the revenue these businesses have," said Hardeep Malhotra, a New Delhi-based chartered accountant. In GST, only businesses with annual revenue of less than ₹20 lakh are exempt from registration." Female labour participation has declined to abysmal 10.89% from 25%. In urban India, it is more eye-opening and tragic near about 6.65%. it may be due to lack of jobs or patriarchal Society. Next reason behind unemployment is unemployability. Unemployability emerges from a wide gap between the level of student's skills and knowledge resulting from his college education and in the level of what market demands. Sustainable development cannot be achieved without assuring that all women and men, and girls and boys, enjoy the dignity and human rights to expand their capabilities, secure their reproductive health and rights, find decent work, and contribute to economic growth. Developing policies and investments to secure that future requires that governments know the size, sex, location and age structure of their present and future populations. Countries with the greatest demographic opportunity for development are those entering a period in which the working-age population has good health, quality education, decent employment and a lower proportion of young dependents. Smaller numbers of children per household generally lead to larger investments per child, more freedom for women to enter the formal workforce and more household savings for old age. When this happens, the national economic payoff can be substantial.

Kalam says, "Unemployability is the bigger crisis than unemployment". (Yukti) says, "Unemployability is a problem that even the much admired late former President of India, A.P.J. Abdul Kalam, was concerned about. This was evidenced in his convocation address of Bangalore University, where he said that, "It is not unemployment which is a major problem; it is the question of 'unemployability' which is a bigger crisis". It is an ironical fact that more studied candidates have less chances of getting appointed. (Chakravarty, 2020) commented, "Most of these would be younger people. Those fresh out of college are more optimistic about their chances of getting a 'suitable' job — something commensurate with what they were trained to do. They hedge their bets by simultaneously enrolling in post-graduate courses, hoping to exit as soon as they get their dream job. By the time they are about 25, their families start putting pressure on them to get married and 'settle down'. So, they begin to lower their expectations. By the time these same people hit 30, they take anything available, usually way below what they had initially hoped for as their chosen career. The CMIE's data for January to April 2020 tells us that the 'greater' unemployment rate — those who are actively seeking work and those who are willing to work but not actively looking for it — among young people in the 20-24 age bracket is a whopping 52 per cent. This number drops sharply to 22 per cent for 25-29-year-olds, and then to 13 per cent in the 30-34 age group, finally settling in the 10-12 per cent range for those between 35 and 59 years of age."

Thus, unemployability and unemployment are dragging a scope of achieving 5 trillion GDP. These are real threats to our weapon i.e. demographic dividend. In order to project India as a developed country Government has to pay attention to think seriously to tackle these issues. More hands in use can lift financial and economic scenario to larger extent. Acute measures in education and skill based courses can lead to Amrut Kaal i.e. 2047.

Bibliography

1. Chakravarty, A. (2020, September 19). *Explosive mix of being educated & jobless*. Retrieved from Tribune: <https://www.tribuneindia.com/news/comment/explosive-mix-of-being-educated-jobless-143223#:~:text=It%20is%20likely%20that%20younger,very%20low%2Dpaid%20itinerant%20work.>
2. FICCI. (2020). *Corporate Affairs Secy addresses concerns of CII, FICCI, ASSOCHAM amid lockdown*. Delhi: Govt. of India.
3. Johari, A. (2022, February 8). *India's economic crisis took their jobs and careers – and the 'recovery' hasn't brought them back*. Retrieved from Scroll.in: <https://scroll.in/article/985442/indias-economic-crisis-took-their-jobs-and-careers-and-the-recovery-hasnt-brought-them-back>
4. Report. (2020, January 20). *NDTV Budget 2022*. Retrieved from Nearly 1 In Every 4 Graduates Looking For A Job, Says Report: <https://www.ndtv.com/business/nearly-1-in-every-4-graduates-looking-for-a-job-says-report-2167035>
5. Reporter. (2021, February 25). *With Over 5 Million Tweets, 'Modi Job Do' Trends At #1 On Twitter*. Retrieved from H W English: <https://hwnews.in/news/national-news/5-million-tweets-modi-job-trends-1-twitter/153006?infinitemscroll=1>
6. Sachdev, A. (2018 , July 4). *A year after GST, small businesses report huge drop in sales, struggle with high costs of compliance*. Retrieved from Hindustan Times: <https://www.hindustantimes.com/business-news/a-year-after-gst-small-businesses-report-huge-drop-in-sales-struggle-with-high-costs-of-compliance/story-2NezKZ0MJ0EOxsocnavDtJ.html>
7. SINDWANI, P. (2020, February 7). *Jobless: 63% Indians between 20-24 are unemployed*. Retrieved from Business Insider: <https://www.businessinsider.in/careers/news/young-and-jobless-63-indians-between-20-24-are-unemployed/articleshow/73999969.cms>
8. Yukti, S. (n.d.). *Unemployment vs Unemployability: Which is the bigger problem?* Retrieved from Sona Yukti: <https://www.sonayukti.com/blogs/unemployment-vs-unemployability-which-is-the-bigger-problem.php>

Land And Water Resource Management Practice In Dillai Watershed, Assam, India

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Abstract: Where there is water there is life. Water is essential for drinking, food production and food processing to ensure the very survival of human life. Besides it is also an essential for industries, power generation and for agricultural purposes. Land is the plane on which all these actions take place. In an undisturbed natural system, at any given time, and in any given location, the prevailing climate provides water and energy to the land surface, and helps to maintain the life that exists on it. However, the increasing interference resulting from developmental activities results a disturbance in the system. The ever increasing population has put immense pressure on both land and water. Primary data as well as Secondary data from various sources was used to collect information for the fulfilment of study. This paper identifies the necessity of land and water management practice in Dillai watershed. This paper will further suggest the possible way of managing land and water resources for a sustainable and desirable future.

Keywords: Water, land, sustainable, management, future.

Introduction:

Water is no doubt the sine qua non for human existence. Water is essential for drinking, food production and food processing to ensure the very survival of human life; it is also an essential commodity for industries, power generation, operation of urban utilities and to maintain a hospitable environment. Land is the plane on which all these actions take place. In an undisturbed natural system, at any given time, and in any given location, the prevailing climate provides water and energy to the land surface, and helps to maintain the life that exists on it. In an essentially systemic manner, climatological, geological and biological dynamics co-exist to determine the quantity and quality of water in the land surface (Falkenmark et al. 1999). Human actions that continue to modify the landscape and interfere with these inter-related dynamics in nature. Of the various uses of water, water for agriculture accounts for the highest proportion of all water available for human use. Globally, agriculture accounts for 66 per cent of freshwater withdrawals and 85 per cent of freshwater consumption; agriculture also accounts for 38 per cent of land use (FAOSTAT Database 2001; Shiklomanov 2000). In agriculture, water is inalienable from land as they are closely interlinked in usage. Also, water and land are the most critical natural resource inputs for crop production. Irrespective of the criticality of either of these resources for agriculture, the concern on water seems to have superseded that on land resources. While it is very important to be concerned about the increasing water scarcity, declining water quality and other related issues of water resource management for food production, it is equally important to realise that most solutions that may address these issues are invariably linked with the management of land resources. During the last two decades, the world has come to recognise the importance of an integrated approach to water resource management. The year 1992 saw two major global initiatives on water and the environment, and since then there has been a wide appreciation of the need to consider water as a critical resource. Increased knowledge on the limitations, finiteness and vulnerability of water as a resource gave rise to an accentuated concern on water. The famous Agenda 21 of the Earth Summit in Rio de Janeiro (Savenije and van der Zaag 1998; UNCED 1992) and the Dublin Conference on Water and the Environment (ICWE 1992) concluded on a set of eight principles and concepts. One of these eight items referred to 'integrated water resources management, implying an inter-sectoral approach, representation of all stakeholders, all physical aspects of water resources, and sustainability and environmental considerations'.

Study Area

The study area is located in Karbi-Anglong, one of the Autonomous Hill districts of Assam. The district is located in the central part of Assam in North-East India stretches between 25° 33' N to 26° 35' N latitude and 92° 10' E to 93° 50' E longitudes. The district covers a total geographical area of 10,434 sq. km out of which 10,397 sq.km is rural and only 37 sq.km is urban which accounts for about 13.53 percent of the state's total geographical area of 78,438 sq. km with a population of 9,56,313 of which 4,90,167 are male and 4,66,146 are female respectively (Census report 2011). In 2001 census, KarbiAnglong district had a total population of 8,13,311 persons of which males were 4,22,250 and remaining 3,91,061 were females. The density of population of KarbiAnglong in 2011 is 92 persons per sq.km which was 78 in

2001. The sex ratio of the district is 951 per 1000 male in 2011 compared to 2001 census figure of 926. The literacy of the district is 69.25 percent of which 76.14 percent is males and 62.00 percent is female as per 2011 census. The population characteristics of the district is predominantly tribal and Karbi is the majority tribe. The other ethnic group residing in the district are Bodos, Kukis, Dimasa, Hmars, Garo, Rengma, Nagas, Tiwa, Man (Tai speaking). Besides, a considerable number of non-tribals like Bengalis, Biharis, Marwaris and Nepalese etc. The study area experiences different climates in different parts due to the variation in the topography. The winter season begins from October and continues till February. Summer starts from May to August and the atmosphere becomes sultry during this season and the temperature ranges from 23⁰ C to 32⁰ Celsius, while in winter, it ranges from 6⁰ Celsius to 12⁰ Celsius. The Cherra-Dawki escarpment of Megahalya, Bharail range and the western border hills of Manipur obstruct the easy access of south-west monsoon winds into the heart of the region (Phangsho P.C 1978). This condition gives rise to rain shadow effect in the district.

Objectives:

- i) To know the problems of land and water resources management practise in the study area.
- ii) To suggest for the improvement of land and water resource management practise in the study area.

Methodology:

For the fulfillment of the study, data and information have been collected from both the primary and secondary sources. In case of primary data, field visit to the location to identify the problems faced by the locality of the area. However, the secondary data has been collected from books, websites, journals, published articles, newspapers, various Governmental reports and internet for the fulfillment of the study.

Literature Review

(Nagy, 2012) suggested that have to apply minimum cultivation in order to protect the soil surface, maintain its moisture content and increase its water reception ability. In addition to the localised use of fertiliser, sowing seed, irrigation and pesticides, it is also important to apply them in a targeted way on the basis of plot imaging.

(Majumdar, 2013) suggested that for sustainable water management in water scarce areas available quantity of water is consumptively used and saved water is conjunctively supplied in addition to insufficient quantity available in water deficit months. Such storages are generated season wise and selecting suitable technique of aquifer storage as against preservation in a surface water body is a vital issue. Conjunctive planning require survival of both surface and subsurface water, however sustainability of an individual storage levy risk on the augmentation of the other.

(Sikka et al, 2018) mentioned about Rainwater harvesting and its judicious utilization through farm ponds and community tanks in rainfed districts demonstrated the ability to build resilience and also enhance cropping intensity.

(Zheng, 2021) in his book noted that based on a historical and geographical approach to exploring the cultural dynamics in water management. It shows how people abide by their culture to water in ancient society and in indigenous, local, social, and urban society. This helps to provide an in-depth understanding of the cultural dynamics in water management to bridge the cultural idea of water management from history to the present and to the future.

Results And Discussion

In the study area maximums of the population depend on agriculture for their survival. Plan and policies needed to be adopted on time to rise the income of the person who fully depended on agriculture. In the study area various scheme have been adopted but the execution of the project bring fruitful results to the farmer. The aim and objectives of the project is not meet to the farmer. Maintenance of the dedicated project seems to be not under fully maintained condition, the result let to remain the project as huge concrete block.

Suggestions

1. There is urgent need to check the facilities available and grant aid to improve the existing facilities.
2. There is need to provide quality irrigation facilities for on time cultivation of crops.
3. The government and local bodies should check the sanction project to be completed on time
4. The release of fund of development should have a free flow for the development of water management institution in the district. Besides the authorities should give priority to achieve sustainable use of resources.

Conclusion

Agriculture is the main source of income in the study area. The development of the area can only take place if land and water management is practice. The improvement in land and water management will improve the income of the farmer. Therefore, there is urgent need of establishing better land and water management practice in the district. Besides the broad minded people, alert citizen and Non-governmental Organisation must collaborate to practise the management of land and water. Besides the district administration also have to implement all available schemes and programmes for development. The most important is awareness among the people.

References

1. Falkenmark et al.. (2014). Overcoming the land–water disconnect in water-scarce regions: time for IWRM to go contemporary. *International Journal of Water Resources Development*, 30(3), 391-404.
2. Majumdar, P.K. (2013). Sustainability of societal water management practices. *Society Science System*, 5(2), 113-135.
3. Nagy, J. (2012). Land use, water management. *ActaAgrariaDebreceniensis*, 49(1), 81-87.
4. Phangsho, P.C (1978). Regional structure of KarbiAnglong and North-Cachar Hills, M. Phil Dessertation, North Eastern Hill University, Shillong.
5. Sikka et al.. (2018). Climate-Smart Land and Water Management for Sustainable Agriculture. *Irrigation and Drainage*, 67(1), 72-81..
6. Zheng, X.Y. (2021). The Cultural Dynamics in Water Management from Ancient History to the Present Age. IWA publishing.



Plate 1: Author at one of Rain Harvesting site



Plate 2: Author at water storage tank inspection

“Green And Chemical Synthesis of TiO₂nanoparticle And Evaluation of Their Anti-Microbial Activity Against Various Microorganism.”

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Abstract

Nanotechnology is the creation and manipulation of matter on atomic, molecular and super-molecular scale, it is considered to have great potential for the development of new innovation materials for the welfare of human as well as environment. Nanoparticles can be formed by various materials such as metals, metal oxides, nonmetals or semiconductors. Metal nanoparticles are highly exploited for their promising applications in medical field. TiO₂nanoparticles can be produced by chemical, physical or biological method and holds great antimicrobial potential. Synthesis of TiO₂nanoparticles was done by using sol-gel method and green synthesis using biological method with leaf extract of *Nyctanthes arbor-tristis* and characterization was done by XRD and UV-Vis spectrophotometer and *In vitro* analysis of efficacy of nanoparticles was also done.

Keywords – Nanotechnology, TiO₂nanoparticles, green synthesis, antimicrobial activity

Introduction

In recent years, nanotechnology is showing enormous growth in various fields such as biology, medicine, electronics, cosmetics, agriculture, environment and many more, Metal nanoparticles show different characteristics than bulk matter due to their large surface area to volume ratio, and shows strong antimicrobial potential [1]. Metal nanoparticles show the potent antimicrobial effect which proved it as good alternative for classic antimicrobials [2; 3]. Metal NPs are known for their interaction with cellular components such as DNA, RNA and ribosomes and altering its metabolism, hence effectively kills microbes [4]. So, nowadays, microbes are also called as potential biofactories for synthesis of MNPs and nanocomposites [5]. Nanoparticles were initially synthesized by physical method [6; 7], chemical method [8; 9; 10]. Chemical and physical methods are easy and produce mono-dispersed particles but are expensive and toxic to the living organisms as well as environment. Plants are the better biological system for nanoparticles synthesis as they are toxic chemical free and provide natural capping agents. Using plant extracts are more cost effective than microbial system as it reduces the cost of culturing them [11].

Methodology

1. Synthesis of TiO₂ nanoparticles

i. Sol-gel method

For the chemical synthesis TiO₂ nanoparticles by sol-gel method, absolute ethanol (5 ml) is added to the benzyl alcohol (75 ml). After this, TiCl₄ (4 ml) was slowly poured in the beaker along with continuous stirring at room temperature very carefully. This orange-red mixture then turns into the white fluffy precipitate and then completely dissolves. Then this mixture is covered and stirred continuously at 80°C for 8 hours. Then, for the aging process, this mixture is kept at room temperature for 14 days, at the end; we got suspension from the mixture. Centrifugation of mixture at 1000 rpm for 15 min gives whitish precipitate after discarding supernatant. Precipitate was then washed twice with absolute ethanol and three times with diethyl ether (20 ml, every time followed by centrifugation). After air drying precipitate overnight, powder was collected and then calcinated at 300°C.

ii. Green synthesis using leaf extract of *Nyctanthes arbor-tristis*

Nyctanthes arbor-tristis Linn. is popularly known as night jasmine or Parijat, is a member of Oleaceae family. This small shrub grows upto 10m tall and found in the tropical and subtropical regions. It has high aesthetic property because of their small, white, fragrant flowers with orange pedicel which blooms at night. Along with it, this plant has various pharmacological properties [12].

a. Collection of plant

Collection of plant was done from Balaji Nursery and Garden, Jaya Nagar 1st Block, Bangalore.

b. Preparation of leaf extract

The healthy leaves of *Nyctanthes arbor-tristis* were collected and rinsed gently. Leaves were kept for drying up to 15 days under dust free condition at room temperature. Fine powder was prepared by grinding the leaves. 1 gram leaf powder was then mixed with ethanol (50mL) and extracted under reflux condition

at 50°C. After 5 hours of extraction, the ethanolic leaf extract was obtained. Extract was then filtered through Whatmann No.1 filter paper and directly used in the synthesis of nanoparticles [14].

c. Synthesis of TiO₂ nanoparticles

For the synthesis of TiO₂ nanoparticles, Titanium isopropoxide (0.4M) was added in ethanolic leaf extract with continuous stirring at 50°C up to 4 hours. After this, centrifugation was done at 10000 rpm for 15 minutes. Then washing of supernatant with ethanol and later centrifugation was done at 10000 rpm for 10 minutes. Separated TiO₂ nanoparticles were then kept for drying, grinding and after this, calcinating at 300°C in muffle furnace for about 3 hours.

d. Calcination of TiO₂ nanoparticles

For the calcination process, 5 gm of nanoparticles were measured using electronic weighing balance and then transferred into silica furnace. Then furnace was kept in up to 300°C for 3 hrs in calcinating chamber.

2. Characterization of TiO₂ nanoparticles

Characterization of nanoparticles was done in order to confirm synthesis of particles and for the analysis of physical properties of these particles such as stability, size, dispersity (presence of monodispersed or polydispersed particles), etc.

a) UV-Visible spectroscopy:

The chemically synthesized and green synthesized TiO₂ nanoparticles were subjected to UV-Visible spectroscopy analysis, in the range of 350-470 nm filters.

b) X-ray diffraction:

The samples of the TiO₂ nanoparticles were freeze-dried, powdered and used for XRD analysis [15]. The spectra were recorded in automatic X-ray diffractometer- X-ray generator. XRD patterns of all samples were collected in the range of 20–80 °C (2θ) using Phillips PW 1830 instrument (CuKα radiation, λ=1.5406 Å), operated at 40 kV and 30 mA. AFM images have been processed using WSxM software ver. 4.0.

3. In vitro antimicrobial analysis of TiO₂ nanoparticles

Antibacterial activity of nanoparticles was analyzed using disc diffusion method against *E. coli*, *Bacillus subtilis*, *Staphylococcus aureus* and *Klebsiella pneumoniae* species. Overnight suspension culture of microbes was inoculated by 4 way streak method and discs soaked in TiO₂ nanoparticles (synthesized by sol gel method and biological method) were gently inserted in Nutrient agar plates. Along with nanoparticles, Streptomycin (standard antibacterial drug) discs were used as a positive control and ethanolic leaf extract of *Nyctanthes arbor tritis* was kept as a negative control. After 24 and 48 hrs growth, plates were observed for the zone of inhibition.

Results and discussion

TiO₂ nanoparticles were synthesized by using chemical (sol-gel method) and biological method (using leaf extract of *Nyctanthes arbor tritis* plant). Calcination was carried out. After calcination, fine powder of nanoparticles was formed.



Fig. 1. a) Ethanolic leaf extract of *Nyctanthes arbor tritis*, b) chemically synthesized TiO₂ after calcination
c) green synthesized TiO₂ nanoparticles after calcination.

The UV absorption peak of TiO₂ nanoparticles ranges from 350 nm – 470 [13]. Fig. 2 (a) & (b) shows the UV absorption peaks of chemically synthesized and green synthesized TiO₂ nanoparticles respectively. A UV-Vis spectrum of chemically synthesized TiO₂ nanoparticles shows the peaks approximately at 412 nm, clearly indicating the formation of TiO₂ nanoparticles. UV-Vis spectra of green synthesized TiO₂ nanoparticles shows the peaks approximately at 409 nm, clearly indicating the formation of TiO₂ nanoparticles in the plant extract.

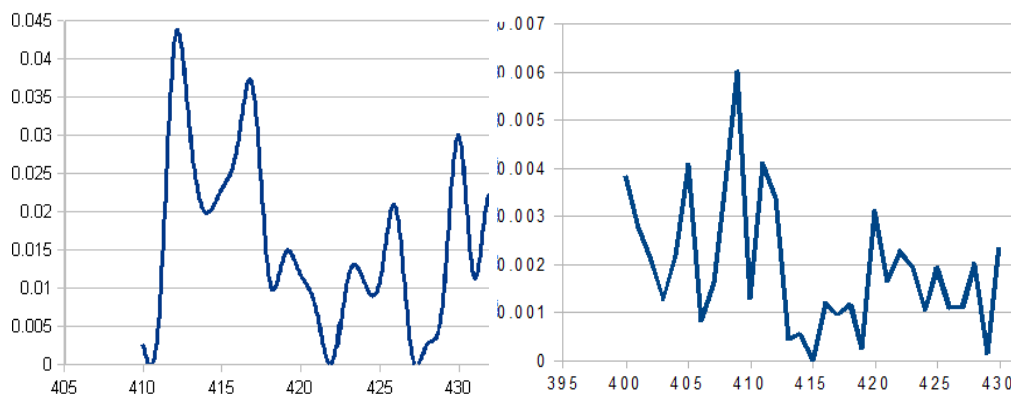


Fig. 2. UV-vis absorption spectrum of a)chemically synthesized TiO₂b)green synthesized TiO₂nanoparticles.

The nano particles were characterized by XRD in rutile phase. The positions of principal peaks in XRD were found to be in similarity as mentioned in literature. XRD pattern of TiO₂nanoparticle reveals multiple intense peaks in the whole spectrum of 2θ value ranging from 10^0 to 60^0 . The XRD sample shows dominant peaks indicating that the crystal structure is predominantly rutile dominant. The plant synthesized TiO₂nanoparticles ranges in size from 34 to 58 nm with calculated average size of 39 nm, and chemically synthesized TiO₂nanoparticles are in same range and ranges in size from 39 to 72 nm with calculated average size of 49.83nm (Particle size analyzer).

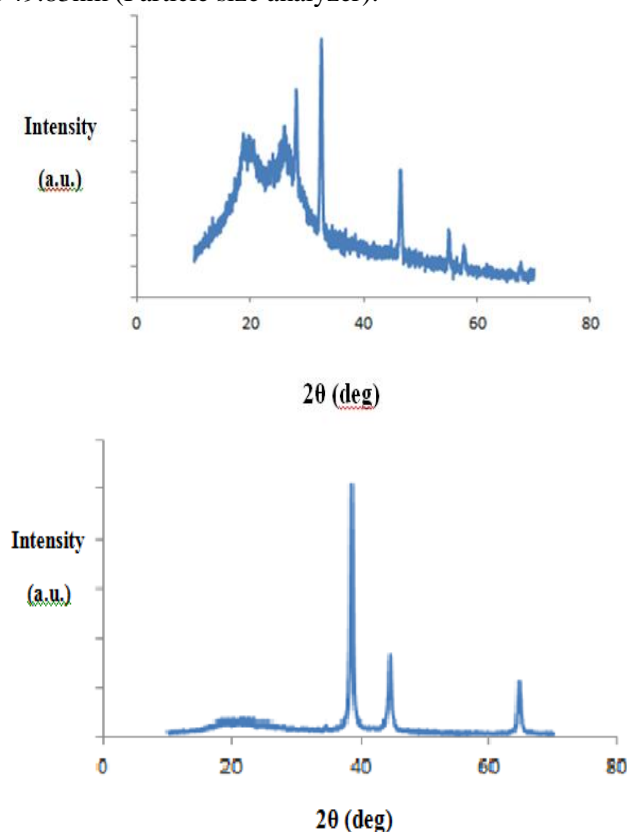


Fig. 3.XRD pattern of a) chemically synthesized TiO₂ nanoparticles b) green synthesized TiO₂ nanoparticles

Antibacterial activity of TiO₂nanoparticles

The formation of zone of growth inhibition around the TiO₂ nanoparticles discs and ethanol leaf extract discs clearly shows the antibacterial property of TiO₂ nanoparticles. The zone of growth inhibition is higher in chemically synthesized TiO₂nanoparticles than green synthesized TiO₂nanoparticles and standard antibiotic streptomycin.

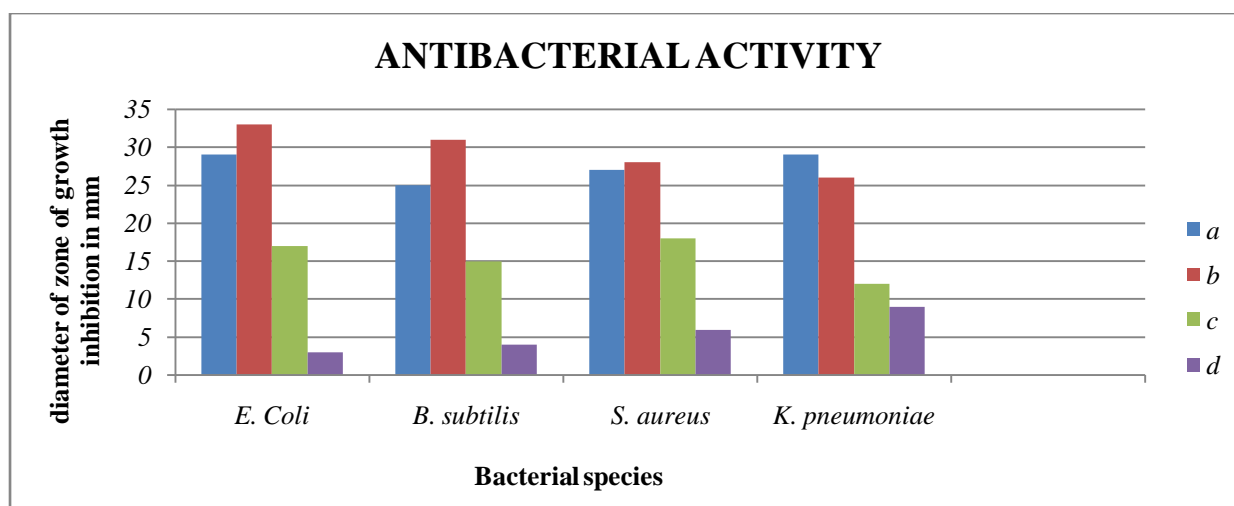


Fig 4: Graph showing efficiency of antibacterial activity of nanoparticles on various bacteria (a - antibiotic (Streptomycin), b- chemically synthesized nanoparticles, c-green synthesized nanoparticles, d- ethanolic leaf extract of *Nyctanthes arbor tritis*.)

Conclusion

TiO₂ nanoparticles were produced by using sol- gel method and green synthesis using ethanolic leaf extract of *Nyctanthes arbor tritis*. Synthesized nanoparticles were characterized to study their physical properties. Nanoparticles produced by both the methods have potent antibacterial activity. Such nanoparticles can be used for the production of future generation medicines.

References

- Rai, M., Yadav, A., Gade, A. (2009). Silver nanoparticles as a new generation of antimicrobials, *Biotechnology Advances*, 27(1): 76-82.
- Tran, P., Webster, T., (2011). Selenium nanoparticles inhibit *Staphylococcus aureus* growth, *International Journal of Nanomedicines*, 6: 1553-1558.
- Wang, Q., Webster, T. (2013). Short communication: inhibiting biofilm formation on paper towels through the use of selenium nanoparticles coating, *International Journal of Nanomedicines*, 8: 407-411.
- Grigor'eva, A., Saranina, I., Tikunova, N., Safonov, A., Timoshenko, N., Rebrov, A., Ryabchikova, E., (2013). Fine mechanisms of the interaction of silver nanoparticles with the cells of *Salmonella typhimurium* and *Staphylococcus aureus*, *Biomaterials*, 26: 479-488.
- Hariharan, H., Al-Dhabi, N.A., Karupiah, P., Rajaram, S.K., (2012). Microbial synthesis of selenium nanocomposite using *Saccharomyces cerevisiae* and its antimicrobial activity against pathogens causing nosocomial infection, *Chalcogenide Lett*, 9 (12): 509-515.
- Mafune, F.K., Takeda, Y., Kondow, T., Sawabe, H., (2001). Formation of gold nanoparticles by laser ablation in aqueous solution of surfactant, *Journal of Physical Chemistry*, 105(52): 5114-5120.
- Jung, J., Noh, H., Ji, J., Kim, S., (2006) Metal nanoparticle generation using a small ceramic heater with a local heating area, *Journal of Aerosol Sciences*, 37(12): 1662-1670.
- Esumi, K., Tano, T., Torigue, K., (1990). Preparation and characterization of bimetallic Pd-Cu collides by thermal decomposition of their acetates in organic solvents, *Chemical Matters*, 2(5): 564-566.
- Sun, Y.P., Atomgitawat, P., Mezini, M.J., (2001). Preparation of silver nanoparticles by via rapid expansion of water in carbon dioxide micro emulsion into reductant solution, *Langmuir*, 17 (19): 5707-5710.
- Yin, Y., Zhong, Z., Gates, B., Venkateswaran, S., (2001). Synthesis and characterization of stable aqueous dispersions of silver nanoparticles through the Tollens process, *Journal of Material Chemistry*, 12: 522-527.
- Iravani, S. (2011). Green synthesis of metal nano particles using plants, *Green Chemistry*, 13(1): 2638-2650.
- Solanki, M., Rajhans, S., Pandya, H., Mankad, A. (2021). *Nyctanthes Arbor-Tristis* Linn: A Short Review. *World Journal of Pharmacy and Pharmaceutical Sciences*. 10(1): 1047-1054.
- Ramteke, C., Chakrabarti, T., Sarangi, B., Pandey, R. (2013). Synthesis of Silver Nanoparticles from the Aqueous Extract of Leaves of *Ocimum sanctum* for Enhanced Antibacterial Activity, *Journal of chemistry*, 2013(1):1-7.
- Hiremath, Shilpa & Vidya, C. & Antonyraj, M.A.L. & M N, Chandraprabha & Seemashri, S. & Shetty, B. & Belamkar, A. & Nair, R.. (2017). Photocatalytic Degradation Study of Rhodamine-B by Green Synthesized Nano TiO₂. *Asian Journal of Chemistry*. 29. 221-225.
- G. Rajakumar, A. Abdul Rahuman, B. Priyamvada, V. Gopiesh Khanna, D. Kishore Kumar, P.J. Sujin. Eclipta prostrata leaf aqueous extract mediated synthesis of titanium dioxide nanoparticles. *Materials Letters*. Volume 68. 2012. 115-117.

The Impact of Effective Leadership and Human Resource Management on Organizations

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Abstract

Exceptional leaders connect with a successful business relationship and effective interpersonal relationships process to develop and implement projects that achieve success and sustainable competitiveness advantage. In today's highly competitive business environment, it is an essential factor in determining success with the potential to transform his employees into a team of volunteers and winning with a collaborative effort to achieve the missions and aspirations of a determined collective society. The modern business operating environment calls for leadership orientations who acknowledge that employees have emotions in the workplace and consequently, so, however, that they are always able and willing to pursue it with a better effect. In this context, this article highlights the need for everyday leadership. It demonstrates current organizational dynamics and leadership styles that potentially lead to better human resource management and performance. This paper is a qualitative synthesis of the methods and scientific literature that is based on secondary data collected from books and journal articles, and whose contents have been unraveled in relation to their surroundings. The article concludes that government creates a collaborative effort between human resources that are created forever for the various orders of order.

Keywords: Leaders, Human Resources, Management, Organization, Performance

Introduction

Although the business context and the business process are changing, there are still more time-tested assumptions that make big leaders and great companies great. While new devices and new accessories are required more than ever, there are plenty of things that now remain pertinent, useful and adaptable to successful management practices. In today's business world, successful executives are not only adapted to changing situations, but also employ fundamental principles of administration with fanaticism, rigor, consistency and discipline. These foundations comprise four traditional forms of management: planning, ordering, ordering and supervision. They remain as relevant as ever and still provide the basic needs of start-ups and businesses alike. It has been established in the literature that the management of discipline and professional experience distinguishes several functions, including the "leader" or "governor". There is also no doubt about leadership in the administrative process, especially since it is not only about visualizing a future prelate for the organization (which is part of the organization's role), but also to influence all staff to execute reliably on the projects that they want. To enable an organization to actually execute its strategy, mission and vision. Thus, leadership involves close daily contact with people, helping to guide and inspire them to achieve the goals and objectives of society and the norms. The monumental challenge has generally led to every organization or government in order to determine its mission and execute the policies faithfully carried out.

Power and Leadership

He who is deputed to the place of principality has the right to rule and to enforce obedience according to the authority of his dignity. Only the positional authority is subject to formal sanctions. Hence it follows that whoever acts on personal influence and power can legitimize it only by acquiring a formal system commensurate with authority in the hierarchy. Thus power is the key to effective leadership, that is, the ability to move others. In organizations this influence often means the ability to achieve achievements or achieve goals, even though it may be resisted by others. One of the oldest and most useful approaches to understanding power, offered by the Gauls and Ravenna, suggests that leaders have five main potentials in organizations. We will briefly examine these sources of power.

Traditional approach to study leadership

Bozeman suggests investing in leadership to be one of the most successful areas of enterprise management for cloud theory and practical applications. Therefore it is not surprising that three traditional approaches/approach theories have been proposed over the period, namely: (i) the trait approach, (ii) the mode of action and the approach to the situation or contingencies.

Line of access

The leadership approach is one of the oldest approaches, aimed at individual leaders and the efforts to determine the personal experiences (traits) of great leaders. What sets Winston Churchill, Alexander the Great, and Martin Luther King out of the crowd? The trait approach presupposes the existence of a progressive personality, and leaders are born, not created. This approach aims to find the personality, social, physical or

intellectual attributes that leaders describe and distinguish from non-leaders. In other words, research in this area is involved in finding universal features that separate efficient and ineffective leaders. Unfortunately, however, it is generally assumed that the guides of first-known theories are one-dimensional and therefore have no relevance to the context of the entire work in which the rule is provided.

1. Intelligence (mostly verbal and symbolic in nature rather than creative);
2. commenced
3. The ability to control (the ability to manage others);
4. confidence (measured according to self-report);
5. Affinity for work
6. what matters most
7. Masculinity / Femininity;
8. Maturity (compliance with age group norms).

Motivational Traits:

1. For the customer needs medication.
2. Work toward self-realization;
3. There is need to rule over others;
4. Great wages are needed;
5. Little job security

Behavioral approach

A method of approach to leadership efforts to find out what good leaders are doing. Do the leaders intend to do the job done or please their followers? Should you vote autonomously or democratically? In human approach, the personal characteristics are considered to be of less importance than the behavior of the leaders themselves. Three types of leadership behaviors received particular attention: role goals, support groups, and employee participation in decisions.

Situational Access

According to proponents of the situational approach to leadership, traits and practices are not universally important, and effective behavior patterns vary from situation to situation. The first spatial model of the Tannenbaum and Schmidt rule was proposed. In its classic article, these authors have described how actors should consider three factors before deciding on a lead; strength in the agent, strength in the subject, strength in the situation. Manager's strengths include the manager's personal values, inclinations, sense of security, and confidence in his subordinates.

Qualities of an effective team leader

An effective team leader is essential to complete the norms. Such a prince thought he was likely to have these things;

1. Technical Competence: A leader must have a technical competence level that can meet and verify the standard of work required by his team.
2. Work Context: The leader is to study the research context in which companies work. This involves an understanding of the environment and the circumstances about the tasks to be performed
3. Group's Knowledge: To understand and care for the needs and feelings of team members
4. Team Spirit: The leader must develop the companies spirit and maintain the internal connection of the team
5. Inspiration: A leader should seek ways to inspire companies
6. Guided by example: A leader should follow by example, not by rules
7. Authority: A team leader should rely less on the coercive power inherent in the manager's position and more on the compliance that results from the respect and acceptance that members have for leaders.
8. Confidence and Confidence: The team leader must beget confidence and confidence not only in strength but in a sense of justice and justice. She must have a deep conviction and attention to what she does. Moreover, he must have firm faith in the team vision and unwavering confidence that the team will be able to achieve his vision.
9. Good judgment: The leader must have the opportunity to be well assessed and not be afraid to face the facts that are uncomfortable
10. Support and communication: The leader must communicate with great speed and a sense of urgency. It should be accessible open up new ideas and supports for my husband even in difficult times.

Human Resource Management: An Overview

Human capacity management is the process of managing human intelligence to achieve the goals of an organization. We use many words to describe the importance of organizations. The term "human resumption" implies that people have the resources to push norms of action (along with other resources such as money, materials and information). Other situations, such as human capital and intellectual property, all have in common an idea of how people make a difference in the management of governance. Human Resource Management (HRM) advocates say that decisions about the use and management of resources should not have a "personal" independent life, but should be firmly rooted in the mission and planning of the organization. It is

therefore appropriate that the themes covered in HRM and its focus on "human issues" include: effectiveness, development, culture and integration.

Guides to Effective Resource Management

The brands and challenges mentioned above submit their own HRM imperative to a leadership organization, which not only works and thrives on the entire workforce, but also leads to a higher level of performance. In order to work effectively in the management of human resources, it essentially involves the interests of all managers to be managed so that all workers meet psychologically functional tendencies and are always able and willing to achieve competitive advantage, if not higher. to accomplish.

Visionary Leadership:

Leadership with this orientation generates ideas and a clear sense of direction as well as the communication of all of these to the organization hierarchy. It increases the enthusiasm for the idea of accomplishing common "dreams". Thus, visionary leadership stimulates human resources:

1. Encourage people to ask questions and questions about the process: through innovative authors. This posture encourages people to pre-eminent ideas;
2. to inspire others by their enthusiasm to share a common vision;
3. helping others to act. It fosters the efforts and talents of others;
4. Draw by example. The task, therefore, is to provide a consistent: a model of how other staff members can and should act;
5. Celebrate success. It helps bring the feeling to the job and inspires every "heart" and "mind" to a greater end.

Transformational Leadership:

This style uses charisma and associated leadership qualities to elevate aspirations and influence people and systems of norms to high performance models. In other words, the charisma of a leader is used to generate a high-performing organic culture. As Schermerhorn aptly says, "The transformation leader provides a powerful aura of vision and contagious enthusiasm that dramatically increases followers confidence, aspirations, and engagement. The transformation leader inspires followers to become more dedicated, more satisfied with their work, and willing to go the extra mile to succeed in difficult situations. According to Gardner and Kouzes and Posner, the characters include general transformations;

1. Vision: Having ideas and a clear sense of direction, sharing them with others, and promoting a desire to achieve common dreams.
2. Charisma: Incites fervor, faith, faith, pride and self-confidence in others through the power of a personal relationship and an appeal to passion.
3. Symbolism: distinguish the hero, offer special rewards and arrange spontaneous and proposed ceremonies to celebrate excellence and great achievement.
4. Empowerment: Helping others grow, removing barriers to accomplishing, sharing responsibilities and managing difficult tasks.
5. Intellectual Stimulation: Making excuses for others, creating awareness of problems, and stimulating their imagination to create solutions.
6. Integrity: to be honest and credible, to act constantly in accordance with personal persuasion and honoring responsibilities.

Conclusion

In a time of globalization, where businesses and organizations compete with the rest of the world, it is necessary to inspire leaders to share a vision of their workers and to promote collaboration. This incentive will stimulate each and every leading organization to success. What human resources management requires in recent times is to ensure that administrators have a direct relationship with their employees and, in light of their new responsibility, must manage the management of their businesses with regards to their organizational objectives. An important task led to these challenges is to create an area of administration that will not only generate a deeper sense of self-employment in the entire workforce, but also spark the potential for each worker to develop the project. Acts of the principality Effective leaders do not rely on the type of leadership Indeed, they can use a variety of ways depending on the situation, and the effective management of human resources must be provided for nearly every aspect of the workforce and to help people perceive and pursue a common vision. Expected results are consistently better than competitors. In today's highly competitive business environments, leaders serve the most important people as they help them to evolve their own initiative and make good decisions, to grow and help them become better contributors. HR managers believe in people and share that belief, are open and visible, help, increase participation, and have the opportunity to share information. Finally, human leadership must synergize and ensure that it continues to produce value for various levels of organization.

Reference

1. Organizations, structures, processes and events of the HR Hall. Cliffs at Englewood, near Jersey: Prentice-Hall; 1991.
2. Davis K. Relationships among people at work. New York: McGraw Hill; 1972

3. Bennis, W. Duke. New York: Addison-Wesley; 1989
4. Mohammed N., Danjuma D. Leadership and Critical Thought: Exploration for Bond Exploration. In C. Chukwumma (ed .). It is manifold in generals and wars. Kaduna: Defense of the Nigerian Academy 2016
5. Hampton DR Contemporary Management. New York: McGraw Hill; eighty-nine.
6. Likert R. Human organization: its management and assets. New York: McGraw Hill; 1967
7. Schermerhorn JR Management New York : John Wiley and Sons Inc. 1991
8. Robbins S, Organizational Behavior JT New Jersey: Pearson Education International; 2009.
9. Bateman TS, Snell SA Management: Leading and Collaborating in a Competitive World. New York: McGraw Hill; 2011
10. Cole GA personnel and human resources management. United States: MEA Cengage Learning; 2002.
11. Lyman WP, Bigley GA Motivation and leadership skills at work. New York: McGraw Hill; 1996
12. Agugua A. The norm of behavior and performance. Lagos: Chartered Institute of ACTIVE Persons of Nigeria; 2018

Impact of Covid 19 towards E- Learning – Challenges and Future of Higher Education in India.

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Abstract-COVID-19 pandemic has affected each and every sector of the economy of India as well as whole world. Due to lock down during COVID-19 pandemic situation all Schools & Colleges were closed. People were forced to stay home and allowed to work from home. In education sector E-learning system has been adopted to provide education services, which facilitate students to avail education services from anywhere at any time. However, students were not more in the usage of these services. COVID-19 situation forced students to use e- learning services. Previously, Students were using online services only for checking results but now they also use for filling admission & exam Forms, transfer the fee, appear for exam, checking results etc., This paper studies impact of Covid 19 towards e-learning and the challenges and the future of higher education in India.

Keywords- Covid 19, Higher Education, e- learning.

Introduction-

Education can be defined as a process of to develop the knowledge, skills and the character of the students. The main objective of the education is to educate all students and give everyone equal opportunity as a means to achieve a success in life. It is life long process which cannot end. The outbreak of COVID- 19 and related impact creates new challenges for the education system. It has given an opportunity to all the educational institutions to find a solution by determining suitable platforms and techniques for effective implementation of quality educational services, which have not been used before. Approximately 264 million children and youths are not in schools and colleges (UNESCO, 2017), and this pandemic made this situation further worst. As the COVID-19 pandemic spreads, the schools, colleges and universities are closed. Government restrict the new rules to control the spread of virus. Govt. announces the complete lockdown. The shutting down of schools, colleges and universities they shifted class room teaching to online teaching. Therefore, this is the time to seriously rethink, and redesign our education system in much demanding need of exceptional current situation. However, it is a well-established assumption that no pedagogical approach can replace the peak position of formal education due to having teacher-taught direct interaction. But, the after- math of COVID-19 crisis, online education became a pedagogical shift from traditional method to the modern approach of teaching-learning from classroom to Zoom, Google Meet, WebEx from personal to virtual and from seminars to webinars.

Objective of the Study-

- 1) To study the impact of the COVID-19 on higher education.
- 2) To identify the challenges faced by the stakeholders and education institutes due to COVID-19.
- 3) To understand the importance of educational technologies for long run learning process.

Research methodology:

The objective of the study is to understand the impact of covid-19 pandemic increase the use of the educational technology. It's also creating the new challenges for the stakeholders. This study is based on secondary data. The secondary data is sourced from the various reports and the govts. notifications regarding the lockdown restrictions during this pandemic period also the containment zone orders of the official authorities and public health authorities.

E-Learning-

Online learning systems can supplement traditional classrooms permitting students to engage in learning through various tools and web technologies. Universities through a wide range of implementation of innovative technologies into learning model, could attract and engage many more students. However, there is still significant conflicts to technology in the education sector. E-learning using mobile technologies to enable learners to conduct their learning process anywhere and anytime at their convenience. The use of e-learning is growing rapidly in the higher education environment because of its dynamic features and convenience.

Challenges to Higher Education.

COVID-19 is a health crisis that is pandemic in nature. In addition, many countries have decided to complete lockdown and the schools, colleges and universities were closed. This COVID-19 pandemic became a challenge for educational sector to continue the educational service during the lockdown period. To overcome this challenge, educational institutions have found online teaching as a solution for their

students in this situation. Online teaching has arisen as a massive shock for both the productivity of the teacher and the students. Many exams were cancelled. These breaks are not only going to be a short-term issue but also many long-term effects. In such uncertain times, it is normal for people, including parents, to experience stress and nervousness. The closing of schools, colleges, and universities has disrupted the students' learning flow and the existing way of imparting knowledge worldwide. In education, many unexpected issues have arisen which need to be tackled collaboratively. It is a challenge for educational institutes and teachers on how to reach students and ensure continuity of education through remote learning. In many countries around the world and India, schools and colleges are shifted to the online mode. Being a new concept, however, many educational institutions have made a considerable number of efforts to implement this technology-based solution.

There are some difficulties felt in the implementation of the change process in the education system that has been arisen after COVID-19 crisis; these difficulties are related with the novel perspectives of online education and their technological difficulties. Earlier to this pandemic, online education is considered as the education provided by the open universities in India. But in COVID-19 encouraged time, online teaching-learning became a massive challenge to deal with, and stakeholders are not potentially fit to adjust with the sudden educational change as they are not technologically competent to hold the current situation. Teacher, Students and the Parents are the main stakeholders of education system. In this pandemic situation these stakeholders are facing the many challenges.

Challenges faced by Teachers-

1. Covid-19 creates an unemployment & Changing working Conditions.
2. There is a no proper training facility & resources are made available for the teacher by the institution.
3. There is biggest difficulty for the teachers that how to keep students engaged in online learning.
4. There is very short period for teachers to convert teaching materials into digital format.
5. There are many problems for the teachers, related to access of internet.
6. Students come from various social and economic backgrounds everyone could not access the smart phone, laptop, computer or internet connection. Those students cannot participate in online teaching-learning process.
7. To preserve regularity in the teaching-learning process is the new challenge for the teacher.
8. Teachers started using Google classroom, Zoom, video call, and other portals to contact students which were unknown for them to some extent.
9. Very few teachers have good computer and ICT skills.

Challenges faced by Students-

1. Students face problems related to Internet access.
2. Every student's family cannot afford the smart phone or computers.
3. There is no information and communications infrastructure for every student.
4. Not all students are similarly skilful to deal with home learning.
5. Certain parents are not well trained and are unable to handle or cope with their children in online learning at home.
6. The study material is revised and it is difficult for the student to cope up with this.

Challenges faced by Parents-

1. In rural area many parents have their agricultural work they have no time for the children to help them in their education.
2. Most parents are hoping that this is a temporary occurrence that will disappear with the lifting of the lockdown and re-opening of colleges.
3. Some parents say online education is going to become a new standard in the future days.
4. Rural areas colleges are deprived of educational services.
5. The families have low-income level could not afford the Smart phones, Laptops or Computers.
6. Parents could not make their children to sit in front of computers for online classes.

Conclusion-

Hence the future education will be with a mix of knowledge, skills and values from all disciplines. The pandemic situations are directly influencing our education system and it creates various challenges for the all stakeholders of Indian education system. To run our education system we have to identify the problems and take some measures to overcome the problems of this situation. Every stakeholder of educational process has to adjust and take proper steps to remove these hurdles for reaching educational goals. By doing this we would be able to make a better tomorrow for all the next generations. Students, faculty members, and educational institutions should not be confused about online teaching & learning. Class room teaching is like a two way communication process which helps students to clear their doubt

immediately. There is time to go to understand and get familiar this system for teacher, students and parents also. This Covid 19 pandemic situation creates new experience in education sector and for the stakeholders. They all need to adapt this situation and to continue with this till the pandemic end. All we need to change ourselves for to continue and a positive higher education experience.

References-

1. Amit Kumar Arora, R., & Srinivasan. (2020.). The impact of Pandemic COVID-19 on the Teaching – Learning Process: A Study of Higher Education Teachers. *Prabandhan: Indian journal of management*, 13(4), 214–222.
2. Abbad, M., & Jaber, F. (2014). Evaluating E-Learning Systems: An Empirical Investigation on Students' Perception in Higher Education Area. *International Journal of Emerging Technologies in Learning (iJET)*, 9(4), 27-34.
3. Alqurashi, E. (2018). Predicting student satisfaction and perceived learning with online learning environments. *Journal of Distance Education*, 40(1), 133–148.
4. Cheung, R.; Vogel, D. Predicting user acceptance of collaborative technologies: An extension of the technology acceptance model for e-learning. *Compute. Educ.* **2013**, 63, 160–175
5. Rupali Kamble, & Deepali Shah. (2018). Applications of Artificial Intelligence in human life. *International Journal of Research - Granthaalayah*, 6(6), 178-188.
6. Madhushree L. M., Pradeep M. D., & Aithal, P. S. (2019). Boosting Education through Mobile Technology in India - Study with reference to Generation Z. *International Journal of Applied Engineering and Management Letters (IJAEML)*, 3(2), 96–105.

A Study on Impact of Online Banking Services

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Abstract

Online banking services are growing day by day in the banking sector of India. This paper aims to examine online banking services in the banking sector in India. Online banking services such as ATM-automated teller machine, personal computer banking, phone banking and mobile banking, email banking. The researcher concluded that the effectiveness of online banking and the problems faced by consumers while conducting online banking transactions.

Keywords: Online Banking Services, recent development in Online Banking Services, problem faced by online banking services.

Introduction - Online banking, also known as internet banking, e-banking or virtual banking, is an electronic payment system that enables customers of a bank or other financial institution to conduct a variety of financial transactions through the financial institution's website. Banking through electronic channels has gained increasing popularity in recent years. It is a generic term encompassing internet banking, telephone banking, mobile banking etc. Online banking allows a user to conduct financial transactions via the Internet. Online banking is also known as Internet banking or web banking

Objectives Of The Study

1. To study the recent development in Online Banking Services.
2. To study analyse the problems faced by Online Banking Services.

Recent Development Of The Indian Banking Services

The development and the increasing progress experienced in the Information & Communication Technology coupled with the expansion of the global economy paved the way for the transformation of the Indian banking system's role from traditional trade financing to mobilizing and channeling financial resources more effectively in almost all facets of life. Intense competitive environment, changing business environments, globalization and the advancement of ICT are the important factors that have forced Banking and Financial services to change. Customers are also demanding greater convenience and accessibility as reflected in longer branch opening hours and an increase in the choice of delivery mechanism. Therefore, with the passing of the traditional banking sector to electronic banking, new strategies have become necessary in order to attract new and retain existing customers. Banks are the main stimulus of the economic progress to play a vital role in spearheading the economic development of the nation. Almost a decade back, even though digital services came into the picture, it was only done through desktop computers which means the customer must be at home or at a place with a computer and internet connection. But the vast penetration of smartphones created a need among customers to avail banking services on their mobile phones. Cheap data charges also contributed towards the increase in usage of mobile banking. Digital-only banks operate only through IT platforms which can be accessed using mobile phones, laptops or tablets. Digital-only banks operate in a paperless and branchless model and seem to overtake the traditional system of banks in the future. These banks provide high-speed banking facility at a low transaction charge. These virtual banks are an ideal choice for the current fast-paced world.



Problems Faced By Online Banking Services

Shifting Banking Habits

Banking usage has seen a surge during the pandemic. Due to lockdown restrictions, online banking adoption soared and now up to 80% of people prefer online banking to visiting the bank, and banks all over the world have started closing the doors of their physical branches. With this growing shift in digital banking habits, banks need to keep their product offerings relevant. As they introduce more online banking capabilities, it's up to marketers to ensure that customers are aware of their bank's full product offering, further enhancing the online banking experience for them and exposing them to the numerous benefits that come with doing banking online.

Security –

Security is one of the most significant challenges for online banking marketers because of the inherent concerns that are traditionally associated with banking online. Although banking systems are designed to be virtually impenetrable, cyberattacks and fraudulent activity are still a reality. But often users don't realise that their online habits may be putting them at risk. Mobile browsers and apps account for 71% of fraudulent bank transactions.

Technical Issues –

Whenever we use the internet, we risk experiencing technology and service interruptions. System stability and efficiency can affect your ability to access your accounts if your internet is slowed or stopped entirely. Similarly, no matter how sophisticated the tech, bank servers are still prone to both intentional and accidental downtime. System downtime can be a challenge as not only are users unable to make payments or conduct transactions but concerns about data and fund security also start to emerge. Downtime can cost businesses \$1.55 million every year.

Risks –

These risks are more pronounced in the case of Internet banking. Firstly, the risk of technological changes has to be carefully watched. This is essential to update technologies and remain cost effective and customer friendly.

Security Issues –

While making online payments or transferring money from one account to another, the online bankers are always concerned about the hackers and anti-social elements. Hacking enables the unethical hackers to penetrate the accounts of online bankers, and spend their money.

Necessity of Internet –

For availing the benefits of online banking one should have access to the Internet. For this purpose, he should own a desktop, laptop or PDA device, and an Internet connection.

Legal Issues –

Considering the legal position prevalent, there is an obligation on the part of banks not only to establish the identity but also to make enquiries about integrity and reputation of the prospective customer. Therefore, even though request for opening account can be accepted over Internet, accounts should be opened only after proper introduction and physical verification of the identity of the customer.

Conclusion –

The research report is based on preliminary information. According to the study, the researcher concluded that most bank customers are aware of all online banking services. The year has seen increased dependence on digital technologies for banking needs. There still lies a massive potential for banks to fill the gaps to meet their customer expectations. More businesses are digitising their processes and finding more agile ways of working and modernising functions by investing in the latest technologies. The research report is useful to know the consumer awareness about online banking system and what kind of risk is in the online banking system.

Reference·

- 1) <https://www.forbesindia.com>
- 2) <https://www.investopedia.com> › terms
- 3) <https://www.bizencyclopedia.com>.

Recent Advances in Commerce and Management

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Abstract

In present time the improvement of the e-commerce market in India is expanding as it attracts lots of sellers to have an online store to improve their business worldwide.

The major problem is that e-commerce businesses or sellers are facing different types of challenges in the Indian market, and it is not simply feasible for them to study their members in the market and business.

Introduction -

The merge of the Internet and e-commerce usage has produced a new online climate that is lots of liable and effective. The use of e-commerce on micro and small enterprises, and in the service sectors has a notable through away on firm performance.

Objectives of the study

- 1) To study recent challenges in E-commerce.
- 2) To study the importance of E-Commerce.

Challenges in e-commerce

Payment is preferred in cash on delivery –

In Indian people important to pay cash on delivery no trust in online transactions. don't like electronic payments, offline cash collection is quite risky, expensive, and hard.

Internet Knowledge is Poor –

In India, Internet knowledge is low as compared to another developed countries like the USA, UK, France etc.

Return to online purchase product –

E-commerce in India many customers are still not sure about what to expect from e-commerce websites; when the product is delivered, they started feeling bad and return the goods.

Wrong postal Address –

The given address is not right because there is always a little standardization while writing post addresses. It is also one of the biggest challenges faced by e-commerce in India.

Phones Rule are settle –

When it comes to the total number of users of mobile phones in India, it is lots of high as various people up to use feature phones, don't have smart-phones operating.

Importance of e-Commerce :-

Lower cost

If the list management of goods and services is an automated process then not only there will be a lower in costs, but also in risk.

Setting process easy

The setting up cost of e-commerce business is extremely low as compared to setting up of a offline purchase process.

Financing investment

In e-commerce business is no investment in terms of shop lay out or insurance. business, lots of money can be invested in the products, strategy & promotion.

Suggestions :-

As the digital economy is enlarge fast and affecting lots of enterprises activities, it is important to take into consideration the proposed solutions for the particular issues and

challenges of e-commerce business. Even though e-commerce enterprises could be from any types, basically they share the common issues and challenges.

Conclusion –

These were the top challenges that majorly faced by e-commerce businesses in India. It is also important to note that e-commerce demon are increasing in India, and limit of e-commerce to India is also enlarge.

References :-

1. <https://www.netsolutions.com/insights/top-ecommerce-trends>
2. [.https://www.tekshapers.com › blog](https://www.tekshapers.com › blog)

SWOT Analysis develop the business

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Abstract

SWOT analysis estimate the internal strengths and weaknesses, and the external opportunities and threats in an organization's environment. The internal analysis identifies resources, capabilities, core competencies and competitive advantages, using a functional approach to review finance, management, infrastructure, procurement, production, distribution, marketing, reputational factors and innovation. The internal analysis is critical in identifying the source of competitive advantage. It pinpoints the resources that need to be developed in order to remain competitive. The external analysis identifies market opportunities and threats by looking at the competitors' environment, the industry environment and the general environment. The competitors' environment is an analysis of the resources and functions of each rival firm. The objective of a SWOT analysis is to use the knowledge an organization has about its environments and to formulate its strategy accordingly. This article provides a toolkit of templates to conduct a SWOT analysis and discusses practical insights on how to formulate strategic decisions

Introduction SWOT analysis

SWOT analysis is a strategic planning and strategic management technique used to help a person or business identify strengths, weaknesses, opportunities, and threats related to business competition or project planning. It is sometimes called situational analysis. The industry environment is reviewed through the five forces framework of competitive rivalry, new entrants, suppliers, buyers and product substitution. The external environment is analyzed in terms of political, economic, sociocultural, technological, ecological, demographic, ethical, and regulatory implications.

Objectives of Study

- 1) To study Internal and External factors of SWOT Analysis
- 2) To Study Advantages of SWOT Analysis

Factors of SWOT Analysis

Strengths

Strengths are based on internal factors and viewed as helpful to your organization. What are your competitive advantages?

Weaknesses

Weaknesses are based on internal factors and viewed as harmful to the organization. What aspects of the business are holding you back?

Opportunities

Opportunities are based on external factors and viewed as helpful to your organization. What macro trends are creating opportunity for you?

Threats

Threats are based on external factors and viewed as harmful to your organization. How can your weaknesses create a threat to your objective?

Internal Factor:-

The company's strengths and weaknesses are internal factors. Strengths provide the business with an advantage in the competitive market. Weaknesses are what a company needs to overcome for improving its performance. Some of the examples of internal factors are as follows:

- 1) The company's culture
- 2) The image of the company

- 3) Brand awareness
- 4) The key staff
- 5) The company's organizational structure
- 6) Efficiency in operations
- 7) Assets and financial resources
- 8) Market share

External Factors:-

The company's opportunities and threats are external factors. Opportunities are present in the external environment that the company could pursue generating value. Threats prevent the company from achieving its goals and mission as well as create any value. Some of the examples of external factors are as follows:

- 1) Changes in the society
- 2) Regulations by the government
- 3) Market trends
- 4) Customers
- 5) Partners
- 7) Competitors
- 8) Economic environment
- 9) Suppliers

Advantages of SWOT Analysis

- 1) Recognizing threats and opportunities

SWOT is an abbreviation of strengths, weaknesses, opportunities, and threats

- 2) Additional identification tools

The SWOT analysis helps a group decide the appropriate tools necessary for accomplishing goals. Such tools can get evaluated based on their usefulness.

- 3) Low cost

SWOT analysis does not require any expensive software. It also doesn't need any consultant for guiding the process. Anyone can do it. All that is required is a time and spreadsheet for filling out the SWOT analysis.

- 4) Offense and defense

A SWOT analysis helps the leader in uncovering market opportunities that make profits and in fending off new competitors. It enables one in creating a plan to maximize strength or manage weaknesses of threats based on the particular scenario.

Conclusion

SWOT Analysis helps businesses to understand their position into market or business. SWOT Analysis is a tool that can help you to utilise what your company does best right now, and to devise a successful strategy for the future. In this article we understand how SWOT Analysis their position with the help of Internal and External factors and also with Advantages classified how it useful for business to each and every situation.

Reference

- 1) <https://en.m.wikipedia.org/wiki/Investopedia>
- 2) www.emerald.com

Study of frictional ratchet in special reference to asymmetrical mechanism-A review

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Abstract:- This review article will include the Study of frictional ratchet where asymmetry arises due to the phase difference between the periodic friction coefficient and the periodic potential considering the movement of Brownian particles. Noise has been usually considered to be a hindrance for quite some time. However, in the last two decades of the last century, its beneficial aspects have been rigorously studied. In this paper I have presented a special form of noise – thermal noise. The dynamics of a Brownian particle suspended in a heat bath (which acts as a source of thermal noise) at some temperature is considered. Under equilibrium conditions, the observance of directed transport or the so called ratchet effect is excluded. However, in a non-equilibrium situation, the Brownian particle exhibits ratchet effect if the medium in which it undergoes motion offers asymmetry. As a result of this, various forms of ratchets have been proposed. Here, I write up one form of a ratchet (inhomogeneous frictional ratchet) where the asymmetry arises due to the phase difference between the periodic friction coefficient and the periodic potential where the Brownian particle moves.

Keywords: Ratchet, Brownian motion, Noise, Non-equilibrium process, Periodic potential, Symmetry breaking,

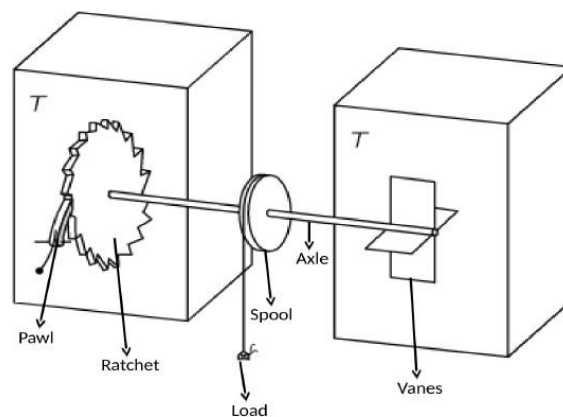
Introduction

Nature manifests itself in sublime ways and one of its manifestations is in its beneficial application of noise. Usually noise is normally thought of as a nuisance - as a destructive interference in signal detection and a hindrance in transmission of information. For example, one-to-one conversation in a crowded room, difficulty in focusing when the mind is interrupted by various thoughts and inability of cell phone network detection due to unfavorable weather conditions, all just tending to eclipse and obscure the desired information. However, over the past thirty years or so, a wide range of studies in a variety of systems - climatic models [1, 4], electronic circuits [3], neurophysiologic systems [2, 5, 6, 7], perceptual systems [8, 9, 10] - to name a few, have shown that noise may indeed enhance signal detection and transmission. Its essential role in physical processes was pioneered by Smoluchowski [13] in 1912. In fact it was because of the random jittery motion of a suspended particle (Brownian particle) in a colloidal solution, first officially recorded by the Botanist Robert Brown [12], and then theorized by Einstein [14], that was led to the confirmation that matter has an underlying microscopic structure within it. In other words, the Brownian particle was undergoing motion in a noisy environment. Physically, noise is used to describe fluctuations about the mean deterministic stationary value of a physical quantity. From the mathematical viewpoint, noise is a random variable whose values fluctuate unpredictably in time. Nonetheless, it should have well-defined properties like the mean, correlation and the other moments. This means that although the random variable by itself can take different values for each of its “realizations”, its statistical properties however must remain constant. There is a large literature on the different kinds of noise that can arise in physical and physiological systems [14, 15]. In this review we focus mainly on one type of noise -thermal noise (also known as Johnson-Nyquist noise) -fluctuations that are ever present in any system due to its non-zero absolute temperature. The main motivation for studying noise induced processes is in the domain of cellular motion and transport, especially molecular motors which aid the motion of proteins along periodic structures called microtubules by converting ATP into mechanical work [16]. The idea of constructing machines on an atomic scale was first discussed by Feynman in his talk on December 1959 [17]. Although not in the atomic scale, his dreams now seems to be a reality with the fabrication of molecular machines first developed by a French group led by Sauvage [18], Stoddart [19] and Feringa [20] who were eventually awarded with the Nobel Prize in Chemistry in 2016 [21]. Thermal fluctuations which can be safely ignored for the motion of macroscopic objects cannot be swept aside for microscopic objects like molecular machines. Thermal forces and viscous forces due to Brownian motion are more conspicuous and these small machines must either exploit the effects of thermal noise or otherwise overcome them altogether. Nature has provided a host of small machines, both linear and rotary, in the background of thermal noise. These natural biological machines perform their functions with remarkable efficiency and accuracy [22] and can thus serve as a guide for scientists who aim to design such artificial machinery.

a spool that was attached to a load. The whole setup was enclosed by a gas at thermal equilibrium, say Under non-equilibrium conditions, the cooperation of noise with nonlinearity can be seemingly counterintuitive. Numerous theoretical, numerical and experimental works reveal that there are a plethora of non-equilibrium systems which use noise as a driving force. Some of these phenomena are noise-induced transitions [15, 23], coherence resonance [24], noise-induced transport in ratchets [26, 27], resonant activation [27], noise-induced pattern formation [28] and stochastic resonance [1, 29]. This classification is by no means exhaustive. In this review, we focus only on the phenomenon of ratchet effect. Below we give a simple description of this phenomenon. Ratchet effect has dated many centuries back with the works of Archimedes, Seebeck, Maxwell, Curie, and others [26]. But the thought experiment by Smoluchowski [1] happens to be the first major contribution in this field. This was then popularized and extended some fifty years later by Feynman and was put as a chapter in his celebrated lectures on Physics [31]. The main idea was this: under isothermal conditions, it is impossible to rectify unbiased random fluctuations to generate directed transport for a microscopic system despite the presence of any intrinsic or fabricated asymmetry. We describe this thought experiment below in the same spirit as that of Feynman.

As shown in Fig. 1, a ratchet and pawl device was considered to be connected to the vanes by an axle. Halfway along the length of the axle was considered at temperature ' T '. The gas molecules undergoes Brownian motion and on doing so will hit the vanes which will in turn rotate the ratchet (inherently asymmetric) either clockwise or anti-clockwise.

Fig.1: A ratchet and Pawl device



The purpose of this setup is to allow the ratchet to rotate either clockwise only or either anti-clockwise only and if it were supposed to rotate in both directions then the pawl must forbid such a scenario. So if the ratchet system can rotate say clockwise only (according to the diagram), then it may be able to lift the load, which in turns increases the potential energy of the load thus enabling the ratchet to perform work even though the load were applied in a direction opposite to the direction of the rotation of the ratchet. Looking at such a scenario, it seems quite possible and convincing enough that a net transport has occurred by rectifying Brownian motion. But knowing how natural systems behave at equilibrium, we know that such a process does not occur otherwise the gadget would end up violating the Second Law of Thermodynamics. What needs to be examined properly here is the working of the pawl which closely resembles a sort of Maxwell's Demon [32]. It is important to stress that such a gadget was thought of to take place in the microscopic domain and the pawl itself must be extremely microscopic in order to allow a clockwise rotation only. But since the pawl is microscopic, it itself will also be subjected to undergo Brownian motion. So when it lifts itself up, it surely will not be in a position to prevent the ratchet from rotating anti-clockwise. Such kind of instances will on the average be anti-clockwise and hence overall the gadget will prefer no net rotation thus keeping the Second Law intact. Since this device was initially thought of by Smoluchowski and later popularized by Feynman, it was called after them as Smoluchowski- Feynman ratchet. Later this ratchet was experimentally realized on a molecular scale [32, 33, 34, 35]. Feynman however extended that the gadget may prefer a certain direction only if the gas molecules surrounding the vanes and those surrounding the ratchet and pawl are at different temperatures. Such a device is now under the domain of non-equilibrium thermodynamics since the isothermal condition is no longer kept. This device is named only after Feynman as the Feynman ratchet. So in perspective, directed transport in spatially periodic systems under isothermal conditions may occur only if the system were to be driven away from equilibrium by adding either a deterministic or a stochastic perturbation or in the presence of temperature gradients. In this review, we put a write up only of the effects of a co-sinusoid on a multi-stable periodic potential system at constant temperatures. But despite breaking thermodynamic equilibrium

on periodic systems, the principle of detailed balance will still prevent a net transport to occur if the potential is symmetric. So an additional criterion to be realized is the breaking of this symmetry. This can be carried out either by introducing an asymmetric forcing of zero mean per period or by driving with a symmetrical force but introducing inhomogeneities in the medium as in the form of friction. Following the above aforementioned criteria, many variations of ratchets have been proposed, developed and experimentally realized [26, 36, 37, 39]. All these proposed ratchets can be clubbed together into two basic classes: pulsating ratchets and tilting ratchets. In pulsating ratchets, the perturbation varies the shape of the potential without affecting its periodicity. In such ratchets there may be cases where the particles need not surmount any potential barriers, yet noise is indispensable to generate current in such models. Pulsating ratchets are further divided into two basic forms: fluctuating potential ratchets (on-off ratchets or flashing ratchets) and travelling potential ratchets. Tilting ratchets on the other hand are those for which the perturbation changes the average slope of the potential keeping in mind that the average of the perturbation over a period is zero. When the potential is of the form of a ratchet potential and the perturbation is symmetric, the tilting ratchet is called a rocking ratchet. However a tilting ratchet is called an asymmetric tilting ratchet when the potential is symmetric but the perturbation is asymmetric (zero mean over a period). Another variant of a tilting ratchet could be by varying the friction of the medium which could be done either spatially or temporally. Here, both the potential and the perturbation may be symmetric but symmetry breaking is realized by considering a similar symmetric friction coefficient which is out of phase with respect to the potential. Such variants of the tilting ratchet scheme are called inhomogeneous ratchets or frictional ratchets. In this short review, we only put a write up about frictional ratchets and the essential idea of how they work.

Frictional Ratchets: Modeling and Working

Frictional ratchets mentioned in this review are usually modeled by studying the motion of an ensemble of non-interacting Brownian particles, each of mass m , moving in a periodic potential $V(x) =$

$-V_0 \sin(kx)$ coupled to a heat bath at temperature T . This heat bath acts as a source of thermal noise represented by ξ . Moreover, the medium in which these particles move is inhomogeneous. An inhomogeneous medium is a medium where the friction coefficient $\gamma(x)$ offered by it is also periodic in nature as the potential $V(x)$. The friction coefficient is taken to be of the form of $\gamma(x) = \gamma_0 \{1 - \lambda \sin(kx + \theta)\}$. Clearly, both the potential and the friction coefficient are sinusoidal in nature but have a phase difference θ between them. Fig. 2 shows a typical plot comparing the potential and the friction coefficient with a phase difference between them. This phase difference introduces the necessary asymmetry in the system. The quantity γ_0 is the average value of the friction coefficient for one period, λ is the inhomogeneity parameter and it specifies the strength of the friction coefficient, V_0 is the amplitude of the potential and k is the wave number. The non-equilibrium condition in this problem is introduced by driving the system with a periodic forcing of the form $F(t) = F_0 \cos(\omega t)$, where F_0 is the amplitude of the forcing with driving frequency ω . The one dimensional equation of motion of one such Brownian particle is given by the so

called Langevin equation as

$$m \frac{d^2 x}{dt^2} = -\gamma(x) \frac{dx}{dt} + F(t) - \frac{dV(x)}{dx} + \sqrt{\gamma(x)} T \xi(t).$$

The first term in the RHS of the above equation refers to the damping force as given by Stoke's Law [39], the second term is the periodic force, the third term is the gradient of the potential and the last term represent the random forces (noise) at temperature T

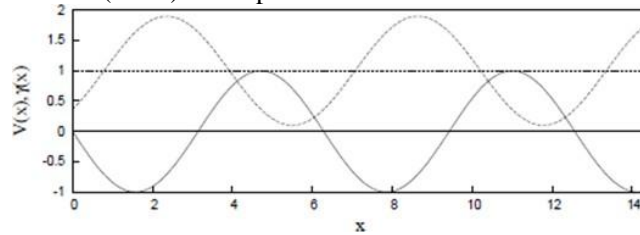


Fig. 2: The curve with unbroken lines represents the potential $V(x)$ and the broken line represents $\gamma(x)$. The horizontal lines denote the corresponding average value per period. Here, $\theta = 0.75\pi$.

Due to the presence of the periodic force, an effective potential $U(x) = V(x) - xF(t)$, is manifested into the system. The periodic force not only tilts the potential but also changes the barrier height. This is shown in Fig. 3 below.

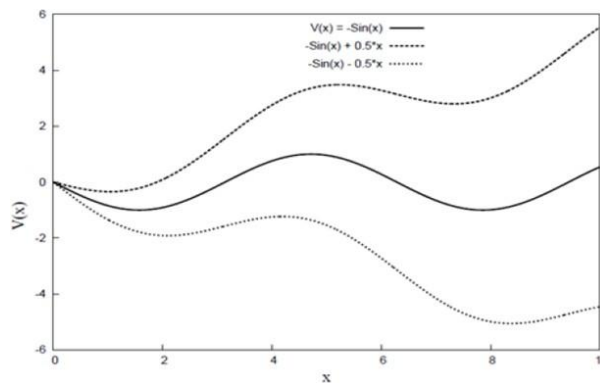


Fig. 3: The middle curve is the potential $V(x)$ which gets tilted at different times of the forcing $F(t)$. For clarity we have chosen $F_0 = 0.5$.

Due to the form of the potential and the frictional coefficient, analytical methods of solving such an equation have not yet been developed. Thus numerical methods are resorted to solving. The dimensionless form [40] of the equation (by setting m, V_0 and $k = 1$) is usually solved numerically, say by Heun's method, for n Brownian particles and then ensemble averaging is done. In this review, we consider the case where the system is under damped ($\gamma_0 < \omega$). Though over damped approximations have been earlier studied extensively [22, 41, 42], yet the results presented when inertia is taken into consideration [43, 44] are also shown to be different and interesting in contrast to their over damped counterparts. Fig. 4 shows a plot of ratchet current $\langle \bar{v} \rangle$ as a function of noise strength T (temperature) for a typical under damped system (the symbol $\langle \dots \rangle$ represent ensemble averaging carried over n Brownian particles). The values of the parameters taken are described in the caption of the figure. In Fig. 4, it is seen that as temperature is increased, the system generates a current in the negative direction (along $-X$ axis). For every value of temperature considered, the error bars over the velocity has also been shown.

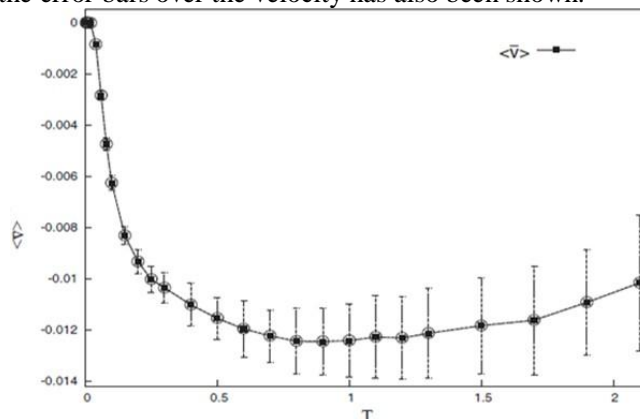


Fig. 4: Here the parameters taken are $\theta = 0.5\pi, \lambda = 0.9, \gamma_0 = 0.07, r = 7.7, F_0 = 0.2$.

In Fig. 5, we give a brief plausible explanation of how the system generates a current leftwards for the

parameters considered. It may be mentioned here that since taking $\gamma_0 = 0.07$, $F_0 = 0.2$, the clarity of the graph may be reduced, so instead $\gamma_0 = 1.0$, $F_0 = 0.5$ is taken without compromising the working of the ratchet.

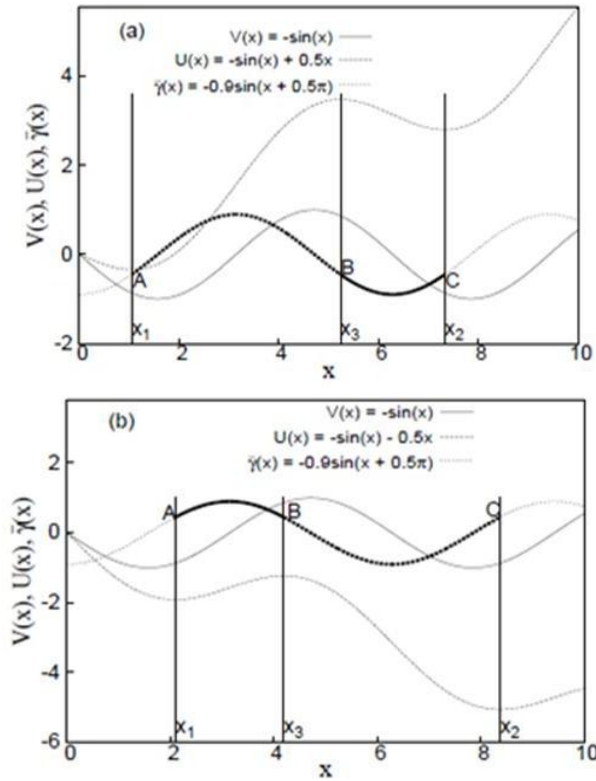


Fig. 5: Variation of $V(x)$, $U(x)$, $\gamma(x)$ as a function of x . Here, $\theta = 0.5\pi$, $\lambda = 0.9$, $\gamma_0 = 1$ with $F_0 = -0.5$ in (a) and $F_0 = 0.5$ in (b).

Let us consider Fig. 5a where the forcing tilts the potential with positive slope thus generating an effective potential $U(x)$ as shown in the figure. On traversing $U(x)$ from A to B (rightward) and from C to B (leftward), it is seen that the potential barrier rightward is much larger in comparison to that of leftward motion. Moreover, it is seen from the figure that the average friction (bold curve and bold-dotted curve) from A to B is also larger than that from C to B. Also, since $U(x)$ tilts with positive slope, it is preferable for the particle to move leftwards.

Now let us consider Fig. 5b where the forcing tilts the potential with negative slope thus generating an effective potential $U(x)$ as shown in the figure. On traversing $U(x)$ from A to B (rightward) and from C to B (leftward), it is seen that the potential barrier rightward is much smaller in comparison to that of leftward motion. Moreover, it is seen from the figure that the average friction (bold curve and bold-dotted curve) from A to B is larger than that from C to B.

Summarizing the above two scenarios, we see that:

a. When potential is tilted with positive slope:

Rightwards: The Potential barrier is large and so is average friction

Leftwards: The potential barrier is small and so is average friction

b. When potential is tilted with negative slope:

Rightwards: The Potential barrier is small but average friction is large

Leftwards: The Potential barrier is large but average friction is small

Thus, on an average the Brownian particles prefer small potential barrier to surmount with smaller average friction being offered by the medium so that mobility is enhanced. Thus, in such a case, it is understandable that the average displacement is leftwards.

Systems with Space-Dependent Friction

At a glance, it appears as though systems having space-dependent friction are artificial but they do actually occur in nature especially in biological systems, for example molecular motors moving along the periodic structure of microtubules experience space-dependent friction [45]. Also, in Josephson junctions the equation of motion have terms analogous to space-dependent friction [46] and the motion of ad atoms on the surface of a crystal of identical atoms have been justified by the mode-coupling theory that friction

is periodically varying [47]. Systems with space dependent friction can also be designed artificially. For example, the case of Brownian motion in confined geometries [48] where the experimenters studied the diffusion of silica spheres (between 10^{-6} m and 3×10^{-6} m in diameter) diluted and subjected to ultrasonic vibrations in ultrapure water confined in a glass chamber. Fine wires with diameters ranging from 6 to 100 micrometer were used as spacers thus mimicking the periodic potential. On calculating the diffusion coefficient of the silica spheres, a deviation from the usual Stoke-Einstein law was observed.

Conclusion

Noise or fluctuations, which are normally considered to be an hindrance, are found to play an active constructive role in nonequilibrium systems. I presented above review article on a class of ratchet – the frictional ratchet. In order to obtain a net current, it is important to drive the system out of equilibrium in conjunction with asymmetry. Here, the asymmetry is obtained by introducing a phase difference between the periodic potential and the friction coefficient whilst the non-equilibrium condition arises by driving the potential with a periodic force. In such ratchets noise plays an important role whereby it assists the particles to surmount the potential barriers. A plausible explanation of how this ratchet works has also been written in the text. A possible application of such a ratchet is in separation of micro sized particles having different diffusion constants. Much of the work on these ratchets is still left to be researched. For example, the quantitative behavior of the magnitude of average velocity with particle of different masses is still unexplored. It may not be surprising that by choosing appropriate asymmetric potential and frictional profile along with other parameters one may obtain much higher transport coherence as observed in.

References

1. H.M. Jaeger, S.R. Nagel and R.P. Behringer, *Rev. Mod. Phys.*, 68, 1259 (1996) and references therein.
2. R. Benzi, G. Parisi, A. Sutera, and A. Vulpiani, *Tellus* 34, 10 (1982).
3. S. Fuave and F. Heslot, *Phys. Lett. A*, 5 (1983).
4. J. K. Douglass, L. Wilkens, E. Pantazelou, and F. Moss, *Nature (London)* 365, 337 (1993). [5].J. J. Collins, T. T. Imhoff, and P. Grigg, *J. Neurophysiology*, 76 642 (1996).
5. Jaramilloa, and K. Wiesenfeld, *Nature Neuroscience* 1, 384 (1998).
6. Hidaka, D. Nozaki, and Y. Yamamoto, *Phys. Rev. Lett* 85, 3740 (1998). [8].J. J. Collins, T. T. Imhoff, and P. Grigg, *Nature (london)* 383, 770 (1996).
7. Simonotto, M. Riani, C. Seife, M. Roberts, J. Twitty, and F. Moss, *Phys. Rev. Lett.* 78, 1186 (1997). M. Piana, M. Canfora, and M. Riani, *Phys. Rev. E* 62, 1104 (2000).
8. M. V. Smoluchowski, *Phys. Z* 8, 1069 (1912).
9. R. Brown, *Philos. Mag.* 4, 161 (1828).
10. Stachel, *Einstein's Miraculous Year: Five papers that changed the face of Physics*, Princeton University Press, (1998). [14].C. W. Gardiner, *Handbook of Stochastic Methods*, Springer Berlin (1985).
11. W. Horsthemke, and R. Lefever, *Noise Induced Transitions*, Springer Berlin (1984).J. Howard, *Mechanics of Motor Proteins and the Cytoskeleton*, Sinauer Associates Inc, February (2001). [17].C. Toumey, *Plenty of Room, plenty of History*, *Nature Nanotechnology* 4, 783 (2009).
12. "Jean-Pierre Sauvage-Facts" Royel Swedish Academy of Sciences. 5 October 2016. Retrieved 9 October 2016.
13. Stoddard ,Lothrop (1922). "Neo-Aristocracy" *The Revolt Against Civilization*. New York: Charles Scribner's sons, pp .237-268 [20]. Staff (20 december 2016). " The Nobel prize in chemistry 2016- Bernard L.Feringa" nobelprize.org. Retrieved 20 October 2017. [21]. <https://www.nobelproze.org/nobel-prizes/chemistry/laureates/2016/>
14. BS ISO 5725-1: "Accuracy of measurement methods and results- part1: general principles and definitions". P.1 (1994)
15. J. Garcia-Ojalvo, and J. M. Sancho, *Noise in Spatially Extended Systems*, Springer New York (1999).
16. Pikovsky, and J. Kurths, *Phys. Rev. Lett.* 78, 775, (1997).
17. F. Marchesoni, *Phys. Lett. A* 237, 126 (1998).
18. Reimann, *Phys. Rep.* 361, 57 (2002).
19. C. R. Doering, and J. C. Gadoua, *Phys. Rev. Lett.* 69, 2318 (1992).
20. J. M. R. Parrondo, C. Broeck, J. Buceta, and F. J. de la Rubia, *Physica A* 224, 153 (1996). [29].L. Gammaitoni, P. Hanggi, P. Jung, and F. Marchesoni, *Rev. Mod. Phys.* 70, 223 (1998).
21. R. P. Feynman, *Lectures In Physics*, ed. R. P. Feynman, R. B. Leighton and M. Sands (Narosa Publishing House,2003), Volume 1, Chapter 46.
22. J. C. Maxwell, *Theory of Heat*, Longmans, Green and Co., London (1872).
23. T. R. Kelly, I. Tellitu, J. P. Sestelo, *Angew. Chem. Int. Ed. Engl.* 36, 1866 (1997). [33].T. R. Kelly, J. P. Sestelo, I. Tellitu, *J. Org. Chem.* 63, 3655 (1998).

24. P. Davis, *Angew. Chem. Int. Ed. Engl.* 37, 909 (1998).
25. K. L. Sebastian, *Phys. Rev. E* 61, 937, (2000).
26. R. D. Astumian, *Science* 276, 917 (1997).
27. P. Reimann, R. Bartussek, R. Haubler, and P. Hanggi, *Phys. Lett. A* 215, 26 (1996). [38].H. Kamegawa, T. Hondou, and F. Takagi, *Phys. Rev. Lett.* 80, 5251 (1998).
28. D. Halliday, R. Resnick, and J. Walker *Fundamentals of Physics, Extended Fifth Edition*, John Wiley and Sons (1997). [40].E.A. Desloge, *Am. J. Phys.* 62, 601 (1994).
29. M. Barbi, and M. Salerno, *Phys. Rev. E* 62, 1988 (2000).
30. L. Machura, M. Kostur, P. Talkner, P. Hanggi, and J. Luczka, *J. Phys.: Cond. Mat.* 17, S3741(2005)
31. M. C. Mahato, and A. M. Jayannavar, *Physica A* 318, 154 (2000).
32. M. C. Mahato, *Indian Journal of Physics*, 78 (8), 693 (2004).
33. R. H. Luchsinger, *Phys. Rev. E*, 62, 272 (2000).
34. C. M. Falco, *American Journal of Physics*, 44, 731 (1976)
35. G. Wahnstrom, *Surf. Sci.* 159, 311 (1985).

A. Rosato, K. J. Strandburg, F. Prinz, and R. H. Swendsen, *Phys. Rev. Lett.* 58, 1038 (1987).

Acknowledgement

I express my deep sense of gratitude and thanks to all those who provided their invaluable guidance and helpful suggestion in making this review article a successful one without whose help my efforts to write this article would have end up in smoke.

Covid -19 And Its Impact on Micro, Small And Medium Enterprises In Kerala

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Abstract

The outburst of COVID-19 has not only distressed the economic and social activities of the Indian economy but also the world economy as a whole. Out of different economic activities, the micro, small and medium Enterprises (MSMEs) affected a lot. This article attempts to assess the economic losses incurred by enterprises in different sectors of manufacturing, trade and commerce and to understand the policy initiatives from the state and central government to tackle the crisis in the economy. According to the Ministry of MSME, the sector absorbs around 111 million workforce and is the second largest job creator after agriculture. Being a highly unorganized sector consisting of a large number of micro-sized units, the sector is highly prone to economic crisis.

Keywords - Covid -19 , GVA , Lockdown, MSMEs , Workforce.

Introduction

The COVID-19 pandemic is the greatest global humanitarian challenge the world has faced since World War II. Being the second most populated country in the world, the lockdown was probably the only solution for controlling the spread of COVID-19 in India. This lockdown adversely impacted the mobility and functioning of economic and business activities. Like any other major sector, the MSME sector also witnessed a considerable decline in economic activities and loss of jobs due to the nationwide lockdown. The MSME clusters account for 40% of the country's industrial output and 35% of exports (IBEF, 2012). Further, the sector plays a greater role in decentralization of industries in India (Kwadwo, Naveen and Nagaraju, 2019). The study uses secondary data for the analysis of the MSMEs. The secondary data is collected by using the real data information and studies available in the public domain, annual reports of ministry of micro, small and medium enterprises, website of ministry of statistics and programme implementation . The geographical scope of the study is kerala. The rest of the paper is structured as follows. In the next section, the paper presents the impact of lockdown on MSMEs. Measures taken by the government have been presented in the third section, followed by the conclusion in the final section.

Impact of covid 19 on MSMEs

There appears to be three possible ways in which the ongoing crisis has affected enterprises in Kerala.

Direct Losses of Production or Businesses because of the lockdown

Within the manufacturing sector, the major contribution to value addition in Kerala comes from a few industries: refined petroleum products, chemicals and pharmaceuticals. These three industries together, accounted for 37.3 per cent of the total value added by Kerala's factory sector in 2017-18. Direct losses on account of the lockdown have been relatively less in the manufacture of chemicals, pharmaceuticals and refined petroleum products in Kerala. The major producers of chemicals and related products in Kerala are a few State public sector units, namely KMML, TTP, TCC, and Malabar Cements. These units lost around three weeks of production starting from March 25. In fact, KSDP has started a new line of production of sanitizers to address the shortage for this product in the wake of the ongoing health crisis. Within the food industry, cashew processing is the largest source of employment in the State. The production activities in the cashew processing industry in Kerala have been at very low levels since March 2020, mainly on account of problems relating to availability of raw cashew nut (RCN). Most other sectors of industry in Kerala have been shut down due to the lockdown. They include rubber and plastic producing units (which employed 24,300 workers in 2017-18 in the factory sector alone), textile units (employing 23,700 factory workers), garment units (with 9,800 factory workers), and units manufacturing non-metallic mineral products (in Kerala, mainly hollow bricks and other construction-related material), which employed 19,200 factory workers. The lockdown has affected operations in footwear manufacturing clusters (mainly in Kozhikode), plywood and other wood-related manufacturing units (mainly in Perumbavoor), and furniture-manufacturing units across the State. The lockdown has been a big blow to trading establishments (except shops selling essential goods) and hotels and restaurants across the State.

Losses Arising due to Disruptions in the Supply Chain

For instance, in the cashew industry, some of the manufacturers report that the raw cashew nuts they imported from African countries have already reached the ports (in India). However, they are facing problems with respect to the release of RCN from the ports. An important concern expressed by Kerala

Vyapari Vyavasayi Ekopana Samithi, an association of traders and manufactures in Kerala, was about the possible deterioration to stocks held by enterprises during the lockdown period. Damages to stocks are likely to be high for certain products, mainly cement, food products and clothing.

Losses on Account of Weakening Demand

Months from March to June are typically a period of high consumer demand in Kerala. Several manufacturing units in Kerala are dependent on demand from the export market, mainly from the US and European countries. A good example is a large garment manufacturer based in Ernakulam District, which employs over 10,000 workers. A number of small and medium rubber-based units in Kerala (mainly in Kottayam District) export their products to the US market. Two of the major traditional industries in Kerala – coir and cashew – rely largely on the export market. The ongoing health and economic crisis in the US and many European countries is a huge dampener on this demand.

A Quantitative Assessment of the Impacts on Income and Wages: Manufacturing and Trade

The Shortfall in Gross Value Added by the manufacturing sector in Kerala during the period from March to June 2020 will be approximately Rs 8,000 crore and shortfalls in GVA from trade and hotels and restaurants in Kerala during the period from March to June 2020 will be approximately Rs 17,000 crore. The Gross Value Added (GVA) by manufacturing in the State's economy at current prices in 2019-20 was expected to be around Rs 80,000 crore (For 2018-19 the quick estimates put it at 75,000 crore). This roughly translates to manufacturing Gross Value Added of Rs 2,200 cores in every 10 days (or Rs 6,600 crore every month). It can be assumed that 70 per cent of the manufacturing production in the State was being lost due to the lockdown and the disruptions, which started from the third week of March 2020. Gross Value Added by trade as well as hotels and restaurants in Kerala's economy at current prices in 2019-20 was expected to be around Rs 1,80,000 crore. This translates to roughly GVA worth Rs 5,000 cores every 10 days (or Rs 15,000 crore in a month). It may be assumed that 80 per cent of the GVA from trade, hotels and restaurants is being lost during the lockdown period (10 days during March and 20 days during April 2020). During the last 10 days in April 2020, the income shortfall may come down to 40 per cent, which may come down further to 20 percent during May 2020.

Wage Losses

Out of Kerala's total workforce of 127 lakh, 48.1 lakh are self-employed workers and 35.2 lakh are casual workers, while the remaining 43.8 lakh are regular workers. wage/income losses during the lockdown are mainly among the self-employed and casual workers. The sectors that are likely to be immediately affected by the lockdown are: manufacturing, construction, trade, transport, and hotels and restaurants. These sectors, together, account for 73.3 lakh workers. We also assume that a worker (in self-employed or casual category) earns between Rs 400 and Rs 450 per day in Kerala (daily wage rates of casual workers in Kerala range from Rs 800 to Rs 1000 for (male) workers in certain sectors to Rs 300 in some sectors). In such a situation, the loss of wages or earnings to workers in Kerala during the lockdown period amounts to roughly Rs 350 crore every day. The total losses in the State in wages and earnings (from March 2020) may be in the range of Rs 14,000 to Rs 15,000 crore.

Charting New Opportunities for Kerala

Companies are reacting in different ways to ensure business continuity, improve the resilience of their supply chain and introduce innovative ways to generate revenue. An immediate opportunity for Kerala is in the manufacture of a range of personal protective equipment (PPE), demand for which has increased after the outbreak of the coronavirus disease. The State should build on the existing institutions in this field. These include the Life Sciences Park in Thiruvananthapuram (which offers world-class infrastructure facilities for biotechnology and life sciences based industries) and Kerala State Drugs and Pharmaceuticals Limited. In this pandemic situation MSMEs can play a major role by producing essential commodities. Many private sector enterprises are repurposing their industrial units for making essential commodities like facemask, sanitizer, disinfectant sprays, PPE kits etc. Repurposing also helps them to keep production lines up and running in times of low demand, generate moderate revenues, and positively impact their reputation. To ensure the uninterrupted supply of medical oxygen across the country for management of covid patients, the government allowed some private enterprises to make medical oxygen. Data available with the Petroleum and Explosives Safety Organization (PESO) show that Kerala's oxygen production is at 199 metric tonnes per day (MTPD). The State has a total production capacity of 204 MTPD. The major producers in the State are Inox with 149 MT, Kerala Minerals and Metals with 6 MTPD, Cochin Shipyard with 5.45 MTPD and Bharat Petroleum Corporation with 0.322 MTPD. In addition, 11 air separation units (ASU) also produce around 44 MTPD.

Policy Measures to Revive the MSME Sector

To speed up Kerala's economic recovery in the post-lockdown phase, some of the existing schemes of the Department of Industries and Commerce may be made use of. Appropriate amounts of financial resources have been allocated to these schemes during the Kerala State Budget for 2020-21.

1. Entrepreneur Support Scheme: This scheme provides capital grants for new and well as existing units for technology upgrading and diversification.
2. MSME Cluster development programme: The scheme provides assistance to MSMEs for sourcing of raw material, common brand creation, and marketing. It also assists in obtaining mutual credit guarantee for sourcing loans, and in the setting up of training centers and quality testing labs.
3. Revival and rehabilitation of MSME Units with stressed assets or defunct units: This is a scheme to provide working capital assistance to defunct units or MSME units with stressed assets.
4. Scheme to provide margin money grant to micro (or nano) units.
5. Schemes to facilitate entrepreneurial development, including Entrepreneurs Development Programmes and scheme for Skilled Entrepreneurs Development Centers.
6. The Commerce Mission may consider building an online marketing platform, which promotes the sale of Kerala-made products (including food products, handicrafts or garments).

The Ministry of MSME runs numerous schemes targeted at:-

- a) providing credit and financial assistances,
- b) skill development training,
- c) infrastructure development,
- d) marketing assistance,
- e) technological and quality upgradation and,
- f) Other Services for the MSMEs across the country.

Concluding remarks

MSMEs have been playing a key role in providing livelihood to millions of Indians. The sector also offers substantial gainful non-farm employment in rural areas. However, due its nature of being unorganized and small size, the sector is highly prone to external and internal crises. COVID-19 has created uncertainty in almost all segments of economic activities including the supply of raw materials, demand for final goods, and even employment opportunities. The data analysis and studies conducted by individuals and institutions indicate that the sector has lost a large number of jobs during the lockdown and even beyond owing to the decline of output, revenue, and capital flow to the sector. Many units particularly in the micro and small segments of the sector were forced to extinct from the market due to persistent loss of business. Therefore, financial support needs to be urgently extended to this sector.

References

1. Anand. Abhishek. Mehrotra. Akash. Gayatri & Nayak, M (2020). Impact of COVID-19 pandemic on Micro, Small, and Medium Enterprises (MSMEs): India report. *Micro Save Consulting*, Lucknow, India.
3. Ashwani & Sahoo, P. (2020). COVID-19 and Indian Economy: Impact on Growth,
 - a. Manufacturing, Trade and MSME Sector.
4. Gade, S. (2018). MSMEs Role in Economic growth – A study on India's Perspective.
 - a. *International Journal of Pure and Applied Mathematics*, Vol. 118 (18).
5. Govt. of Kerala (2020), Economic review-2019 – 2020. *Directorate of Economics and Statistics*,
 - a. Trivandrum.
6. National Statistical Office (NSO) (2019): Periodic Labour Force Survey (PLFS) Annual Report
7. (July 2017-June 2018), New Delhi: *Ministry of Statistics and Programme Implementation*, Government of India.
8. <https://msme.gov.in>.

“Recent Trends And Development In Digital revolution through online marketing”

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Abstract

In today's digital world, online marketing is a powerful tool. The backbone of online marketing is the digital revolution, which has been employing online words since the mid-twentieth century. Today's online marketing is undergoing a digital revolution. Convergence with the future of technology is the future of internet marketing. The use of the digital world in internet marketing has narrowed the scope of traditional or conventional marketing that relies on manual processes. The Third Industrial Revolution is also known as the Digital Revolution. India is on the verge of a massive digital transformation. In India, the Digital Revolution has also resulted in the development of digital entertainment and media. In India, the potential for digital marketing is enormous.

Key Words: Customer Life Cycle, Digital Revolution, Digital Revolution, Online Marketing and Technology.

Introduction:

The corporate world has changed dramatically in the twenty-first century, but these shifts have been tempered by constant advances in computer and communication technologies. Moore's law is related to today's growing global speed of change. Emerging markets have taken centre stage since the turn of the century, the digital revolution has arrived, social networks have become ubiquitous, the sharing economy has emerged, scientific advances such as the mapping of the human genome have changed our lives, and the people's voice has reinvented markets and overturned governments. Computing and information systems science has arisen as a key shift in business and society. In the field of internet commerce, a revolution is taking place. In today's industry, global networking and other broadband technologies are being employed as competitive weapons. The world of network infrastructure began a rapid transformation to new technological advancement, local area network, protocols, routers, and user friendly, software found market place that motivated individual initiative to experiment with net working under pressure from technologies change, competition, and decreasing hardware prices.

Meaning of Digital Revolution:

The environment we live in is rapidly being digitized, and digital connections will soon dominate our space — even our personal space. In fact, it has begun to occupy a significant portion of our personal lives. Human beings' basic needs and desires are growing. The emergence of Digitalization in the last one decade has brought about revolution in the economy of India. Now, it has become crucial part of one's life. The basic needs and wants of human beings are building up the innovation cycle of the economy. India witnessing tremendous growth in the past decades, almost all the sectors in Indian economy has been influenced by the digital revolution.

Definition - Digital Revolution:

The term "digital revolution" refers to the transition from analogue electronic and mechanical devices to today's digital technologies. The era began in the 1980s and continues today. The beginning of the Information Era is also marked by the Digital Revolution. The Third Industrial Revolution is another name for the Digital Revolution.

Developing/ Progressing Stages of Digital Revolution:

The Internet was the catalyst for the creation and advancement of digital technologies. Here's a quick review of how the Digital Revolution unfolded:

- 1) 1947-1979 – In 1947, the transistor was introduced, paving the door for the creation of powerful digital computers. During the 1950s and 1960s, computer systems were used by the government, military, and other institutions. The World Wide Web was born as a result of this study.
- 2) 1980s - The computer became a commonplace machine by the end of the decade, and knowing how to operate one was a requirement for many employments. During this decade, the first cell phone was also introduced.
- 3) 1990s - The World Wide Web was introduced in 1992, and by 1996, it had become a standard feature of most commercial activities. By the late 1990s, about half of the American population had adopted the Internet as part of their daily routine.

- 4) 2000s - The Digital Revolution had begun to spread throughout the developing world by this decade; mobile phones were commonplace, the number of Internet users continued to rise, and television began to convert from analogue to digital broadcasts.
- 5) 2010 to 2018 - By the end of this decade, the Internet will have reached more than 25% of the world's population. Due to the fact that approximately 70% of the world's population owns a mobile phone, mobile communication has become extremely crucial. The ability to connect websites to mobile devices has become a standard in communication. With the usage of the Internet and the promise of cloud computing services, tablet computers are expected to greatly outperform desktop computers by 2015. Users will be able to watch media and use business apps on their mobile devices that would otherwise be too demanding for such devices. 2019 and onwards- Due to Pandemic situation most of the people used this digital technique for their day-to-day work and demanded more digital devices also.

The Inevitable Emergence of Digital India:

India is on the verge of a massive digital transformation. In many ways, the revolution has already begun, but its full potential has yet to be realized. Since our freedom, we've gone a long way. It was only a few years ago when we declared our freedom. We spent over a century on that pursuit, but in the end, we were successful. As a result, the world's largest democracy was born.



Source: The Inevitable Emergence of Digital India March- 31, 2015- By Salman Ravoof Since independence, we've come a long way. Our independence was only a few years ago. That quest took nearly a century, but we eventually succeeded. As a result, the world's most populous democracy was born. Economic liberalization in the 1990s enabled us to become one of the world's fastest growing economies. Since then, we haven't looked back. India is currently one of the world's most formidable developing countries. As time goes on, all Indians will be able to benefit from the advancement of new digital technology. Currently, the benefits are only available to a small percentage of the world's population of over a billion people.

How to Digital Revolution helpful to Online Marketing?

Online marketing is a subset of e-business that makes use of electronic media to carry out marketing operations and fulfill a company's marketing goals. For example, internet marketing, interactive marketing, and mobile marketing are all types of e-marketing. Word of mouth has long been a valuable asset for any company, and technology has opened up the field in a whole new way with mobile messaging and social networking sites like Twitter, Facebook, and YouTube, among others. Every day, it seems impossible to escape hearing about who's on social media, what they're doing, and what the latest trend is. Many business owners may find it difficult to choose whether they should participate, where to begin, and how to launch their own social media campaign in the midst of all the noise. People's shopping habits, as well as their living and communication habits, have altered as a result of technological advancements. The growing popularity of social media and its impact on business has proven that it is not a passing fad, but rather an important component of the consumer discussion. People today spend more than 80 percent more time on social media platforms than they did a year ago, according to studies. Twitter's popularity skyrocketed in the first half of 2009, hitting 10.7% of all active Internet users in June. Furthermore, the 35-and-older group is increasingly contributing to the millions of tweets and Facebook pages.

Meaning of Online Marketing:

Online Marketing is the practice of leveraging web-based channels to spread a message about a company's brand, products or services to its potential customers. Online marketing is also known as internet banking, web marketing or digital marketing. It uses internet and online based digital technologies

such as desktop computers, Laptops, Mobile Phones and other digital media and platforms or branches to promote products and services. It includes several branches such as social media marketing (SMM), Search Engine Optimization (SEO), pay-per-click advertising (PPC) and Search Engine Marketing (SEM).

The 5 Ss of Online Marketing:

Smith and Chaffey (2006) distil the situation of a business using Internet as part of business under the following 5S's:

- 1) **Sell** - Grow sales and attract business using digital technologies.
- 2) **Serve** - Add value through the benefits of the Internet such as speed.
- 3) **Speak** - Get closer to customers by making your business available to them at home, work or on the go with mobile technologies.
- 4) **Save** - Reduce costs by using information technologies to make your business more efficient.
- 5) **Sizzle** - Extend the online brand (or create a new one) - remember sell the sizzle not the sausage i.e., the benefits, aesthetics or value of a product or service rather than its features.

The Customer Life Cycle (CLC):

Customer Life Cycle (CLC) is a term that refers to the life cycle of a customer. With the help of the CLC most of the organizations gather important information for their customer's requirements. The Customer Life Cycle (CLC) is a technique that examines the production and delivery of lifetime value to consumers, or items and services that customers require throughout their lives. It is focused on the market rather than the product (e.g. PLC). In internet marketing, key stages of the client connection are taken into account. The some of the Online Market Research Tools which can be used to gather market information with the help of a few mouse clicks and keystrokes-Keyword Search, Blogs, Competitor Links, etc.

Advantages of Online Marketing:

Using the right digital technology ,you can connect with them right when they're looking for your products and services by using the correct digital technologies. Moving a portion of your marketing resources to online applications is not only a smart way to establish relationships, but it also saves you time and money:

- 1) Extremely low risk
- 2) Reduction in costs through automation and use of electronic media
- 3) Faster response to both marketers and the end user
- 4) Increased ability to measure and collect data
- 5) Opens the possibility to a market of one through personalization
- 6) Increased interactivity
- 7) Increased exposure of products and services
- 8) Boundless universal accessibility

Conclusions:

The development of the digital electronic computer, the personal computer, and especially the microprocessor, with its steadily increasing performance (as described by Moore's law), enabled computer technology to be embedded in a wide range of objects, from cameras to personal music players, was at the heart of the digital revolution. The advancement of transmission technology, such as computer networking, the Internet, and digital TV, was also critical. 3G& 4G phones, whose social penetration rose tremendously grow from the 2000-2020s, also played a significant part in the digital revolution since they provide omnipresent entertainment, communications, and online connectivity at the same time, Online Marketing.

These massive warehouses of digital "stuff" hide the extraordinary among the unimportant, despite the fact that social technologies are everywhere. It's time to brush up on your social skills. Users are flocking to specialized networks in order to reintroduce a sense of community and intellect to their social interactions. Businesses must become more adept at extracting and delivering value from big data, which will require new business models. Mobile is the great leveler for social networks. The battle to own crucial assets from identification to news sharing will escalate as other applications compete for attention, necessitating dramatic reinvention. I also mentioned some more things in it-

- 1) The most basic requirement for online marketing is to get the website up and running promptly and cost-effectively.
- 2) It allows the establishment of long-term, meaningful client relationships with the help of the digital revolution in internet marketing.
- 3) Conduct business on a really global scale.
- 4) Deliver items and services to the target market(s) more quickly.
- 5) Lower the costs of sourcing, transactions, and distribution.
- 6) Simplify the purchasing procedure.
- 7) Integrate the site with business-critical procedures and systems already in place.

- 8) Adapt on the fly as markets adapt and corporate objectives shift.
- 9) Strengthen ties with buyers, business partners, and suppliers.
- 10) And, as a result, distinguish an e-business from its competitors.
- 11) Households use e-commerce, but only a small percentage of PC owners and non-owners are aware of it. The Internet is widely regarded as a source of information, communication, learning, and entertainment, but few people believe it to be a means of acquiring goods and services.
- 12) The government should take the lead by establishing cyber legislation, intervening positively when necessary, and providing enough infrastructures.

References:

- 1) Marketing Management- Philip Kotler, Edition-2003.
- 2) E-Commerce/E-Business- Dr. C.S. Raydu, Himalaya Publishing House.
- 3) Marketing Mastermind- ICFAI University Press, April-2006.
- 4) SIOM Journal, Sinhgad Institute of Management, Vol. III, Issue I, Dec.2005.
- 5) E-Marketing Production, e-Business Solutions, Dubai, UAE-www.wewanttraffic.com.
- 6) <http://www.Technorati.com>
- 7) <http://www.ectnews.com>
- 8) <http://www.twitter.com>
- 9) <http://www.marketing teacher.com>
- 10) <http://www.digitalmailer.com>
- 11) <http://www.absoluteinternetmarketing.co.uk>
- 12) <http://www.salmaniac.com>

Users Satisfaction with Library Sources and Services: A study of Pravara Rural education Society's Non-Technical Colleges in Ahmednagar District

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Abstract:

In Pravara Rural Education Society's Non-Technical Colleges in Ahmednagar District, the study focuses on measuring student satisfaction with library sources and services. Academic libraries are vital to the institutions that they serve. Academic libraries' primary goal is to assist the parent institution in achieving its goals. The study's goal was to figure out what information graduate students needed and how satisfied they were with library services. A total of 100 questionnaires were collected from students in order to acquire pertinent data. Users are mostly satisfied with available Library resources, according to the survey, while they are mostly satisfied with E-Resources they were satisfied by e-journals, e-books, e-databases and also Library Services and Facilities provide by library.

Keywords: Library Services, Library Sources, User Satisfaction,

Introduction - Students, researchers, and teachers can study the immense quantities of knowledge at libraries, which serve as a hub of teaching and learning activities. In traditional libraries, customers must spend more time searching for a little bit of information and rely heavily on the library personnel to do so. For users' satisfaction it is institutes responsibility to provide all sources and services to users for all needed information and their satisfaction This study examined academic libraries sources and services to know which quality sources and services such as online and offline support services provide to users, Initiatives taken for users' support, Provision of service support staff for users support for technical issue.

Definition - According to **Kumari (2011)**, an important collection of libraries is the information sources collection, which includes handbooks, bibliographies, dictionaries, encyclopedias, biographies, directories, yearbooks, geographical sources, and reference books. The libraries should also design a collection development policy for reference sources acquisition. According **Sharma (2005)** believes that the ideals and services that libraries have provided for millennia will remain. Ownership, aid to users, and access to others, as well as the originations of resources and support to users, such as reaction to specific information needs and inquiries, information guidance, and formal instruction, are among them. These services necessitate the participation of a diverse group of specialists.

Objectives-

1. To identify the satisfaction level of library users.
2. To identify specific purpose of library visit by users.
3. To find out the deficiency of library sources and services provide by the libraries.

Methodology - The study is based on the primary data collected from the selected Libraries users of Pravara Rural education Society's Non-Technical Colleges affiliated to Savitribai Phule Pune University. A Simple questionnaire was distributed to 100 users of concern libraries for obtaining the information.

Review of Literature- The review of literature is essential since it directs the researcher in the right direction. To put it another way, it is a stepping stone in the research process. The basic goal of a literature review is to avoid duplication of effort. In their study of access to information use of electronic media in Indian libraries, Moorthy and Karisiddhappa (2001) discovered that a large number of libraries were subscribing to CD-ROM databases and were eager to shift to online journals to meet the demand of their users. Mr. Zhang (2011). As a result, researchers' information behavior has evolved as a result of their comprehension of users' demands to increase the efficiency of their use of e-resources.

Table 1. List of Pravara Group of Non-technical Institution Colleges Libraries

Sr.No.	College Name
1	Padmshri Vikhe Patil College, Pravaranagar
2	Arts Commerce and Science College, Satral
3	Arts Science and Commerce College, Kolhar
4	Arts Science and Commerce College, Alkuti
5	Arts science, commerce and BCS College Ashvi
6	Pravara Rural College of Education, Loni
7	Home Science and BCA College for Women, Loni

Data Analysis

The study was carried out in selected seven colleges of Pravara Rural education Society's Non-Technical Colleges Libraries.

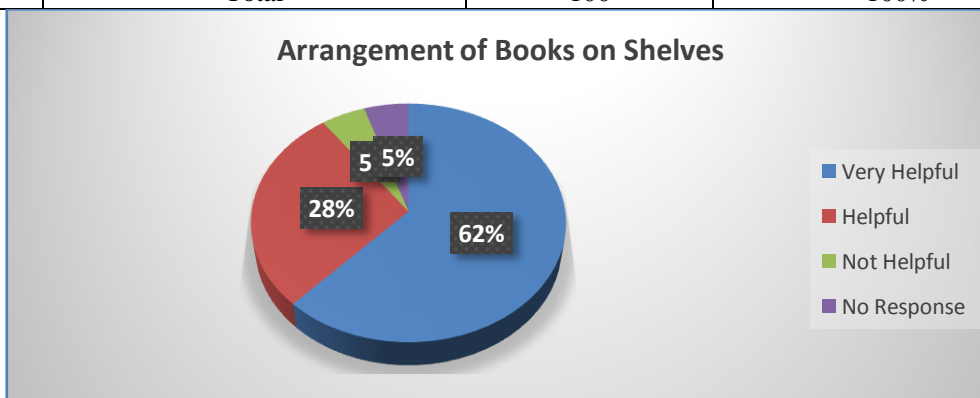
Table 2. Frequency Library Visit :

Sr. No.	Frequency	No. of Respondent	Percentage
1.	Daily	38	38%
2.	Once in a Week	10	10%
3.	2-3 times a Week	37	37%
4.	Rarely	15	15%
	Total	100	100%

The table No. 2 and shows that 38(38%) respondents were visiting Libraries Daily. 10(10%) respondents were visiting Libraries Once in a Week. 37(37%) respondents and 15(15%) respondents were visiting libraries 2-3 times a Week and Rarely respectively. It is observed that mostly respondents have visited libraries in a Week.

Table 3 Arrangement of Books on Shelves

Sr. No.	Arrangement of Books on Shelves	No. of Respondent	Percentage
1.	Very Helpful	62	62%
2.	Helpful	28	28%
3.	Not Helpful	5	5%
4.	No Response	5	5%
	Total	100	100%

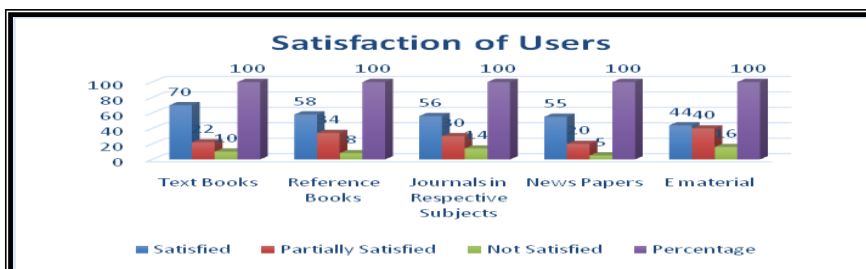


Graph No- 1

The table No.3 and Graph shows that 62(62%) respondent users stated arrangement of books in shelves are very helpful. 28(28%) respondent users stated arrangement of books in shelves are helpful for use. 5(5%) respondent users stated arrangement of books in shelves are not helpful for use. It was observed that mostly libraries arrangement of books on shelves is useful to users.

Table 4 Satisfaction with the Documents you Use from Library

Sr. No.	Types of Documents	Satisfied	Partially Satisfied	Not Satisfied	Percentage
1.	Text Books	70(70%)	22(22%)	10(10%)	100(100%)
2.	Reference Books	58(58%)	34(34%)	8(8%)	100(100%)
3.	Journals in Respective Subjects	56(56%)	30(30%)	14(14%)	100(100%)
4.	News Papers	75(75%)	20(20%)	5(5%)	100(100%)
5.	E material	44(44%)	40(40%)	16(16%)	100(100%)

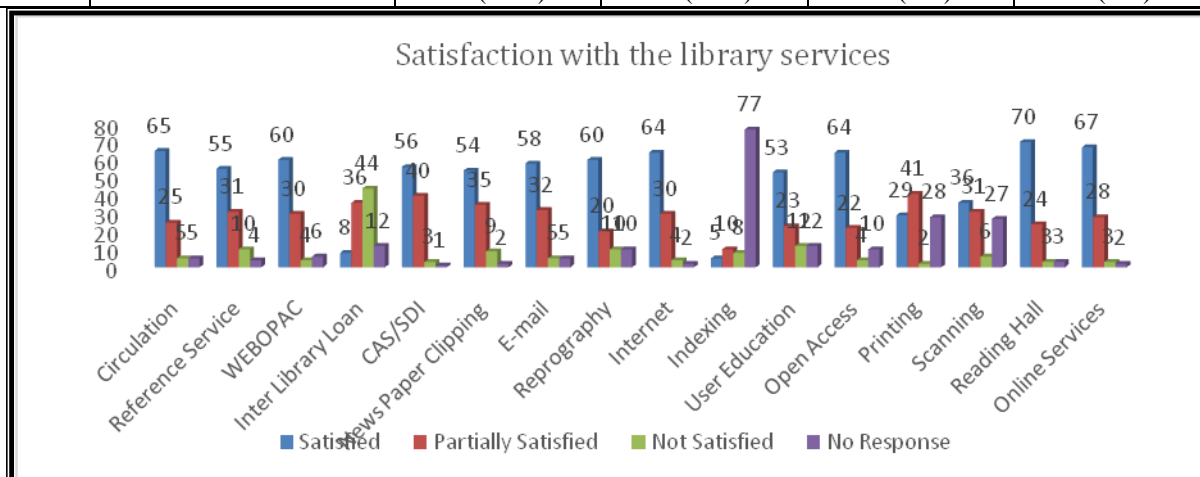


Graph No- 2

The table No. 4 and graph shows that 70(70%) respondent users were stated ‘Yes’ for the use of textbook document satisfaction.58(58%) respondent users were stated ‘Yes’ for the use of reference book document satisfaction.56(56%) respondent users were stated ‘Yes’ for the use of journal in respective subject document satisfaction.75(75%) respondent users were stated ‘Yes’ for the use of newspaper document satisfaction.44 (44%) respondent users were stated ‘Yes’ for the use of audio-visual materials partially satisfaction. It is observed that mostly users are satisfied for available resources.

Table 5 Satisfaction Library Services/Facility of Library Use

	Library Services	Satisfied	Partially Satisfied	Not Satisfied	No Response
1.	Circulation	65(65%)	25(25%)	5(5%)	5(5%)
2.	Reference Service	55(55%)	31(31%)	10(10%)	4(4%)
3.	WEBOPAC	60(60%)	30(30%)	4(4%)	6(6%)
4.	Inter Library Loan	8(8%)	36(36%)	44(44%)	12(12%)
5.	CAS/SDI	56(56%)	40(40%)	3(3%)	1(1%)
6.	News Paper Clipping	54(54%)	35(35%)	9(9%)	2(2%)
7.	E-mail	58(58%)	32(32%)	5(5%)	5(5%)
8.	Reprography	60(60%)	20(20%)	10(10%)	10(10%)
9.	Internet	64(64%)	30(30%)	04(4%)	02(2%)
10.	Indexing	5(5%)	10(10%)	8(8%)	77(77%)
11.	User Education	53(53%)	23(23%)	12(12%)	12(12%)
12.	Open Access	64(64%)	22(22%)	04(4%)	10(10%)
13.	Printing	29(29%)	41(41%)	2(2%)	28(28%)
14.	Scanning	36(36%)	31(31%)	06(6%)	27(27%)
15.	Reading Hall	70(70%)	24(24%)	3(3%)	3(3%)
16.	Online Services	67(67%)	28(28%)	03(3%)	2(2%)



Graph No-3

The table No.5 and graph shows that 65(65%), 55(55%), 60(60%) respondent users were satisfied with the library services/ facilities. (Circulation, reference service, WEBOPAC). 56(56%), 54(54%), 58(58%) respondent users were satisfied with the CAS/SDI, Newspaper Clipping, E-mail services/facilities provided by the library. 60(60%), 64(64%), 53(53%) respondent users were satisfied with the Reprography, Internet, User Education services/facilities provided by the library.64(64%), 36(36%),

70(70%) respondent users were satisfied with the Open Access, Scanning, Reading Hall services/facilities provided by the library. It was observed that mostly user was satisfied with library facilities/services.

Table 6 Satisfaction with Library Staff

Sr. No.	Satisfaction with Library Staff	No. of Respondent	Percentage
1.	Satisfied	64	64%
2.	Partially Satisfied	24	24%
3.	Not Satisfied	10	10%
4.	No Response	02	2%
	Total	100	100%



Graph No- 4

The table No.6 and Graph shows that 64(64%) respondent users expressed satisfaction with the attitude of library staff. 24 (24%) respondent users were partially satisfied with the attitude of library staff. 10(10%) respondent users were not satisfied with the attitude of library staff.

It was observed that most of them were satisfied with library staff.

Recommendations: While doing Users Satisfaction with Library Sources and Services: A study of Pravara Rural education Society's Non-Technical Colleges in Ahmednagar District some suggestions and recommendations for improving the situation are made:

1. There should be need to provide all quality library sources and services for 100% use from users.
2. The study recommends the managements to increased Library Orientation for Maximum use of E Material.

Conclusion: The main purpose of this survey is to find out status of Users Satisfaction with Library Sources and Services: A study of Pravara Rural education Society's Non-Technical Colleges in Ahmednagar District also this study helps to understand the problems and difficulties of Libraries to provide quality Information sources and services to Users and also know the difficulties and problems of libraries after this survey the managements to increased Library Orientation for Maximum use of E Material.

References

1. Kothari, C.R., and (2004) Research Methodology: Methods and Techniques 2nd .New Delhi: New Age International publishers.2-3
2. Kumari H, Adithya; and Talawar, V.G. (2009) "Use of Reference Sources in University Libraries of Karnataka: A Study", Annals of Library and Information Studies, Vol. 56, No.2, PP.103-116.
3. Mulla, K.R.; and Chandrashekara M. (2006), "E-Resources and Service in Engineering College Libraries - A Case Study", Electronic Journal of Academic and Special Librarianship. Vol. 7 No.1.
4. Sami, Lalitha K; and Iffat, Rabia (2009) "Use of Electronic Information Services in Research Libraries", SRELS Journal of Information Management, Vol. 46, No. 1 PP. 43-50.
5. Gudi S,P. and Paradkar P,M. "Users' satisfaction with library resources: a survey of engineering college libraries, pune, india" , journal of indian library association, 54(3) july-sep, 2018.

Need And Role of Psychological Preparation For Sports

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Abstract

The psychology of physical culture and sports shows a special interest in the problems of psychological training of athletes in order to create the psychological basis necessary for the technical and tactical achievement at the highest functional odds, highlighting the fact that there is also a psychological side, determined by the personality traits the athlete, characterized by a way of thinking, feeling and acting. That is why any physical attributes appear in close connection with the psychic activity as an expression of the athlete's thinking and will, and the fiery force, lacking the intellectual, affective-volitive and motivational forces of personality, remains a crude force that does not bring the expected effect performance sport activity.

Introduction

Sport psychology is an interdisciplinary science draws on knowledge from the fields of kinesiology psychology. It involves the study of how psychological factor affect performance and how participation in sports affect psychological and physical factors. In addition to instruction and training of psychological skills for performance improvement, applied sport psychology may include work athletes, coaches and parents regarding injury, rehabilitation, communication, team building and career transitions.

Sportsman gives outstanding performances not simply due to their hard work and effort of their trainers but also due to the active part played by scientists who generally remain in the background. Today no young talented kid can be into a star performer without assistance from different of science such a physiology, bio-mechanics, nutrition, health, medical sciences etc. from a play generally called motor skill performing at the Olympic games and winning gold is a result of the inter play of numerable visible and invisible factors and forces that influence training human muscle and mind over time for such endeavors.

It is well know that psychology has grown out of the method of philosophy. In the 19th century, as hinted above, psychology broke away from philosophy, become a science and incorporated the method of scientific inquiry. William James (1890), Edward Thorndike (1898), Sigmund Freud (1900) and John Watson (1920) contributed a lot to making psychology truly a study of behavior a distinct discipline bordering on science. Science then there has been greatest emphasis on explain in and dealing with behaviour in its multifaceted from.

Need of Sport Psychology

Sport psychology is the science decided to understanding the psychological factors that lead to maintaining and improving performance in sports and the psychological efforts of participation in various sport. As such, it is a basic aspect of all coaches effectiveness, whether they have studied psychology. Coaches should not criticize players after a loss. Instead he should point out thir mistakes Coaches who know more about psychology will be more effective in achieving the desired change in player behavior and performance. Various sport and games participants also have their own goals, such as better skill performance, better self image and higher levels of physical conditioning. A coach can better help players personal goals by using sport psychology.

Role of Sport Psychologist

Sport psychologist studies psychological factors affect the learning and performance of motor skills. We attempted to explain the phenomenon of learning and to such question as how it best takes place and what are the laws under which it operates. So some of the important roles are described in points which are helpful to the sportsman to give top performance. Soprt psychologists prescribe several techniques for improving concentration, these include yogic meditation, zen meditation, concentration training, thought stopping, deep breathing exercises etc.

Psychology Concerning With Players

Improving consistency of quality performance. A coach can use some avenues to move consistent play.

- A. Mentally preparing for matches
- B. Self teaching and self correcting with videotape
- C. Controlling the match winning stress
- D. Building self confidence
- E. Positive visualization

- F. Positive self talk and coping with performance error.
- G. Risk taking
- H. Team leadership and player to player communication
- I. Improving the adjustment power

Psychological Preparation

Psychological preparation of player take place in three phase.

Pre Competition phase

The start of the phase can be months in advance and the main aim is to develop in player the ability to cope with unexpected circumstances and progress towards the final goal.

1. Training of some psychological qualities need in competition. E.g. will power, understanding, co-ordination etc.
2. All round and progressive appraisal of opponent and myself
3. High level strict demand training program
4. Players psychological adjustment training
5. Cultivate and arouse motivation for sports
6. Cultivate a sense of collective honor, achievement and success
7. Education and dialectics
8. Cultivating and psychological habits
9. Establishing a correct attitude toward victory or defeat
10. Memory and thought training

During Competition phase

This is the period when actual competition takes place. The player is under the control of officials up to the end of the match.

1. Use the mental practice during competition
2. Communicating effectively during pre match meetings at time-out, player changes between games
3. Steady, stable, high spirited mood
4. Indomitable fighting spirit
5. Confidence and determination to win
6. Quick, sharp and in depth thinking ability
7. Counter balance of psychological qualities of in court player
8. Motivation to match win
9. Co-ordination to match play time

Post Competition phase

This is the period for evaluation where analysis of success or failure in the competition is to be done. This is a period of resolution and direction of attention should be on key point of the game where modifications are necessary for future improvements and communicate effectively during post game meeting and helping players handle outcomes.

Conclusion

On the basis of above discussion and facts, we can say that the role of sport psychology and psychologist in the various games and sport got too much important without the training of sport psychologist or their advices the performance of player is not possible to achieve better form. In India day by day Sport psychology is gaining importance. But in comparison to advance sporting countries like USA, Germany, China, the psychological preparation of our sportsman is lagging for behind. Today the quest for excellence in Olympic, World Cup competition no longer work allowance for haphazardly constructed coaching and competition plan. Overall sound psychological preparation of our sportsman is greatly needed and important.

References

1. Biddle, S (1998), Sport and exercise motivation : A brief review of antecedent factors and psychological outcomes of participation.
2. Dr. M.L. Kamlesh, Educational sport psychology, Friends Publication (India), New Delhi – 100002.
3. Prof. Aalegaonkar, Sport Psychology
4. Sharma P.D. (1999), Effectiveness of Sport Psychology in the improvement of Sport performance, Journal of Sport Grammatology and allied Sports Sciences. Vol. I, Pp. 85-88.

Social Reforms In Modern India: Contribution of Dr. B. R. Ambedkar

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Abstract of the Paper

Most social reformers during Ambedkar's period talked about social reforms like abolition of Untouchability Sati, child marriage, female infanticide, imparting education to women, emphasis on widow remarriage, use of Swadeshi, etc. instead of structural changes. On 31 January 1920, he started a fortnightly newspaper, the Mooknayak (Leader of the Dumb), with the help of Shahu Maharaj of Kolhapur, a sympathizer of the cause for the Upliftment of the depressed classes. The Maharaja also convened many meetings and conferences of the 'untouchables' which Dr. Bhimrao Ambedkar addressed. In July 1924, Ambedkar founded the 'Bahishkrut Hitkaraini Sabha, to fight the evil of untouchability. The Sabha started a free school for the young and the old and ran reading rooms and libraries. Ambedkar took the grievances of the 'untouchables' to court, seeking justice and equality. This research article to be discussed in brief about the social reforms in India and contribution of Dr.B.R. Ambedkar. Baba Saheb demand for safeguards and protection of Dalit's has a long history dating the Montague-Chelmsford reform in the during of 1919 of the British period. Dr. Ambedkar had been closely involved in the struggle to give Scheduled caste and scheduled tribe people solid statutory safeguard. He was a delegate at the Roundtable conference in London, where he asked for separate electorate for the Dalit's. It is not a surprise that subsequently Ambedkar show to it that the welfare and development of Scheduled caste & scheduled tribes were guaranteed in the 1949 constitution of India in the form of reservation in various fields such as legislative, employment and education etc. Dr. B.R. Ambedkar was a great champion of the Dalit because he succeeded in turning the depressed class movement into a revolutionary movement throughout India. This research to be discussed "**Social Reforms in Modern India Contribution of Dr. B.R. Ambedkar**".

Keywords: Downtrodden, Dalit Empowerment, Upliftment of the Dalits. Mahar movement, Dalit Rights

Introduction

"What are we having this liberty for? We are having this liberty in order to reform our social system, which is fuel of inequality, discrimination and other things, which conflict with our fundamental Rights".

Dr.B.R. Ambedkar

This research paper focuses on the various stages through which Dalit consciousness and movement broadened from mid 19th century up to now and how various Dalit leaders, especially Jotiba Phule, the high-caste Hindu and Ambedkar, a Dalit fought for Dalit rights. As we know that the weaker section in general and the scheduled caste in particular have suffered from multiple deprivations and were the victims of cumulative domination since time immemorial. With the passage of time some Dalits mustered the courage to fight back the age long system of exploitation. The main objective of Dalit movements was to create a counter culture and a separate identity for the Dalits in the society. However, they were not against any individual caste or communal group, but against the establishment, the government but, the society as a whole. A favourable environment for the emergence of the protest movement of the Dalits was created by the collective efforts of Phule, Shivram Janba Kamble, Gopal Baba Walangkar, Kisan Fagoji Bansode and others minor leaders in Maharashtra. The Mahar revolution movements in Maharashtra, paved way to the attempts of the untouchable castes to organize for social and political purpose in various parts of India, including the Dalits of Madras, the charmers of Chhattisgarh area, the depressed classes of the Punjab and the Namshudras of Bengal. All these Movements have not only provided the lower masses with the base for establishing self-determination, self-respect, and honour among them, but also a means for protesting against the domination of upper-caste and classes in the society.

Hindu society is divided into four Varna, or classes, a convention which had its origins in the Rig Veda, the first and most important set of hymns in Hindu scripture which dates back to 1500-1000 B.C.1 At the top of the hierarchy are the Brahmins, or priests, followed by the Kshatriyas, or warriors. The Vaisyas, the farmers and artisans, constitute the third class. At the bottom are the Shudras, the class responsible for serving the three higher groups. Finally, the Untouchables fall completely outside of this system. It is for this reason that the untouchables have also been termed *avarna* or no class. *Jati*, or caste, is

a second factor specifying rank in the Hindu social hierarchy. *Jatis* are roughly determined by occupation. Often region specific, they are more precise than the sweeping Varna system which is common across India and can be divided further into subcastes and sub-subcastes. This is also the case among untouchables. Andre Beteille defines caste as “a small and named group of persons characterized by endogamy, hereditary membership, and a specific style of life which sometimes includes the pursuit by tradition of a particular occupation and is usually associated with a more or less distinct ritual status in a hierarchical system.” *Jatis* in the three highest varnas in the hierarchy—Brahmins, Kshatriyas, and Vaisyas—are considered “twice-born” according to Hindu scripture, meaning they are allowed to participate in Hindu ceremonies and are considered more “pure” than the *Sudras* and “polluting” untouchables. This concept of pollution versus purity governs the interaction between members of different castes. The touch of an untouchable is considered defiling to an upper-caste Hindu. In southern India, where caste prejudice has been historically most severe, even the sight of an untouchable was considered polluting. Untouchables usually handled “impure” tasks such as work involving human waste and dead animals. As a result, until reforms began in the 19th century, untouchables were barred from entering temples, drawing water from upper-caste wells, and all social interaction with upper-caste Hindus (including dining in the same room). These social rules were strictly imposed and violators were severely punished; some were even killed. Christian missionaries took the lead in adopting the cause of the Depressed Classes seeking to provide welfare for them. By the 1850s, either inspired or shamed into action by the missionaries’ example, Hindu reformers emerged. Jyotiba Phule was one such activist, and in 1860 he called attention to the plight of victims of caste discrimination in Maharashtra. British and other Indian leaders soon followed suit, spurred on in part by reports of discrimination against Indians in South Africa. Thus, in the 1880s, British officials set up scholarships, special schools, and other programs to benefit the Depressed Classes. Forward-thinking maharajas (princes) in “native” states like Baroda, Kolhapur, and Travancore, which were not under direct British administration, established similar initiatives. Dr. Ambedkar, from the Mahar caste of Maharashtra, was one beneficiary. The Mahars had a long association with the British-organized Indian Army, in which Dr. Ambedkar’s father and grandfather had served. One result was that Dr. Ambedkar was able to attend government primary and secondary schools. The Maharaja of Baroda, recognizing Dr. Ambedkar’s gifts for scholarship, sponsored his study abroad, first at Columbia University in New York, where Dr. Ambedkar obtained a Ph.D. in Economics, and later at London University, where he earned a DSc. and entrance to the Bar from Grey’s Inn.

Caught in the turmoil of World War I, Britain focused its attention on Europe, not on India. Nevertheless, the British passed important legislation during this turbulent period that would have a significant impact on the development of Indian governmental institutions: The Government of India Act of 1919. The Act had its immediate origins on August 20, 1917. With Britain in a war for survival in Europe, in need of continued support from India and the Empire, and desiring to avoid confrontation with the Indian independence movement, Secretary of State for India Edwin Montagu, in an announcement in Parliament, defined Britain’s India policy as: “ increasing [the] association of Indians in every branch of the administration and the gradual development of self-governing institutions with a view to the progressive realization of responsible government in India as an integral part of the British Empire. Montagu and Lord Chelmsford, then Viceroy, embarked on an analysis of the Indian situation, eventually laying out proposals forming the basis for the 1919 Government of India Act. Despite mention of greater Indian participation in politics, the 1919 Act still contained provisions guaranteeing a continued active British presence and dominance: While we do everything that we can to encourage Indians to settle their own problems for themselves we must retain power to restrain them from seeking to do so in a way that threatens the stability of the country.

The reforms included devolution of more authority to provincial governments and diarchy, a system in which elected Indian ministers, responsible to the legislatures, were to share power with appointed British Governors and Ministers. The Act also addressed minority safeguards, including the particularly vexing issue of communal electorates. Montagu and Chelmsford firmly rejected communal electorates, characterizing the system as a “perpetual [or] of class division” and a “very serious hindrance to the development of the self-governing principle.” The authors also pointed out another related problem that: A minority which is given special representation owing to its weak and backward state, is positively encouraged to settle down into a feeling of satisfied security; it is under no inducement to educate and qualify itself to make good the ground it has lost compared with the stronger majority. On the other hand, the latter will be tempted to feel that they have done all they need do for their weaker fellow countrymen and that they are free to use their power for their own purposes. The give-and-take which is the essence of

political life is lacking. There is no inducement to the one side to forbear, or to the other to exert itself. The communal system stereotypes existing relations.

Summing Up

Actually Baba Saheb Dr. B.R. Ambedkar was a great human rights leader. who I believe must be considered the greatest Indian of the millennium, was a fighter for human rights not only for the most oppressed section of Dalit's but all the Indian caste opposed groups for workers and farmers and for women. Dr. Ambedkar is India's foremost human rights activist in the 20th century. He is an emancipator, scholar, extraordinary social reformer a true champion of human rights. Dr. Ambedkar provides equal rights for all citizen in Indian constitution. But the caste dissemination and untouchability somehow and others are still playing negative roles from different parts of the society. Untouchability is a crime against humanity, The constitution of India is designed in such a way that all citizens are equal before it. Our nation facing different sorts of socioeconomic, educational and political evils in the society and only the effective implementation of the constitution in its real spirit can overcome them. The Dalit's also will have to come forward and to labour hard in all social, economical, educational, political area to complete with the other members of the society.

References:

1. "Mission of Education", *Employment News*, 4-10 Sept. 2016, P.40.
2. Ambedkar's quotations are cited from the book *The Legacy of Dr. Ambedkar*, ed. by D.C. Ahir, B.R. Publishing Corporation, Delhi, 2016 pp 285-306.
3. Vactoria A. Velkoff (October, 1998) "Women of the World. Women's Education in India", U.S. Department of Commerce, retrieved on 15-01-2010.
4. "Education in India" in *Wikipedia*, retrieved on 09-10-2009,
5. Singh, Ranbir, "Sociological Perspective of Dr. B.R. Ambedkar" in *Essays in Honour of Bharat Ratna Baba Saheb Dr. B.R. Ambedkar*, ed. by S.K. Kushwaha, Kurukshetra University, Kurukshetra, 2015, P.34.
6. Chakraborti, Mohit, *Pioneers in Philosophy of Education*, Concept Publishing Company, New Delhi, 2013 p.17.
7. Tagore, Rabindranath, *The Religion of Man*, George Allen & Unwin, London, 1953, pp.145-146.
8. Iqbal, Yasmeen, "Dr. B.R. Ambedkar-father of Indian Constitution" in *Essays in Honour of Bharat Ratna Baba Saheb Dr. B.R. Ambedkar*, p.84.
9. Ambedkar, B.R., "Castes in India: Their Genesis, Mechanism and Development", *Indian Antiquary*, Vol., XXVI, 1917.
10. Ambedkar, B.R., *Annihilation of Caste*, Lahore, 1935.

Related Websites:

1. <http://ww.census.gov/ipc/prod/wid-9801.pdf>. http://ww.wikipedia.org/wiki/Education_in_India.

Plant Science Improve In Agricultural Production In India

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Abstract of the Paper

Agricultural crop production in India is dominated by subsistence farming limited by inadequate resources on nutrient and humus poor soils, with poor water holding capacity. Rainfall is often low and erratic, with high temperatures. Yields are very small, variable, and not increasing; even small gains would greatly improve people's welfare. The greatest, most rapid yield increases would come from increasing fertilisers. Irrigation is limited and of poor efficiency. Improved genotypes adapted to local environments are required. Breeding programmes in India are inadequate, and expansion and improvement using genomic technology is urgent. Indigenous species with agricultural potential should be tested: the case of Marama bean (*Tylosema esculentum*) is discussed. Investment in infrastructure for science and technology is inadequate, and international aid, training etc fragmented. Some scientifically achievable, but politically complex, ways forward will be suggested. Also, there are inadequacies in political, social (especially educational) and physical infrastructure. Plant science has an enormous role to play in improving agriculture in India, as one feature of improved social development. International support for National development is contributing greatly to capacity building, but progress is slow. Improvements in agricultural production are required urgently and efforts should be directed to science associated with achievable goals and technology. Water supply and soil water-holding capacity will be difficult to improve, but scientific concepts necessary for advancing agronomy and giving greater efficiency are not being adequately applied or researched in specific Indian environments. Irrigated agriculture may not be applying best-practice methods and ideas.

Key words: India, agriculture, drought, fertilisers, marama bean, genetic modification, crop breeding, agricultural products, advancing agronomy

Statement of the Problem

"If agriculture goes wrong; nothing else will have a chance to go right"

M.S. Swaminathan,

Agriculture Scientist & Policy Maker

The purpose of this review is to analyse, with examples from personal experience, the causes of low and stagnant or decreasing agricultural crop yields and productivity in India. Poor yields are related to the challenging environments, particularly drought, and underlie economic weaknesses of the region, but are also a consequence of the weaknesses (Evans, 1998). To break this vicious circle, input from plant sciences is essential (von Braun, 2009; McIntyre, 2009). From the analysis of what limits yields, the relative importance of different aspects of research in the plant sciences in alleviation of the problems is considered, and ways of developing and applying them are suggested. The title to the symposium identifies agriculture as the essential economic activity in Indian development, and asserts that plant science and biotechnology are crucial. Both aspects require examination. First, the scale of the task that plant sciences may be expected to provide solutions for is great, and consideration of the scale and diversity is required. Geographically and climatically the scale is enormous. India cannot be treated as an entity in any but a general analysis, but many of the conditions experienced in agricultural production are generic, related to the state of economic development and to environmental conditions, and will be discussed here briefly.

Factors Affecting Agricultural Productivity in India

Industrial development in India is slow and limited compared with many other regions of the world, and much of the population is involved in agriculture, largely subsistence on land holdings of less than 1 ha. Income is generally very low, with a large proportion of the population in most countries having limited access to capital. Resources, such as fertilisers which are not locally available, cannot be imported because of costs. Markets for produce are generally local, and storage is inadequate so postharvest losses are considerable. Infrastructure is poor, and health services and education limited. As a consequence of this economic state, there are relatively few plant scientists either in tertiary education or in the very restricted agricultural extension services. Many Indian scientists train outside the continent, and many emigrate related to the lack of opportunities.

Overview of natural resources

There are some important points bearing on the application of advanced science to agriculture in the Indian situation. Much of India has old soils with very little organic matter and deficient in minerals, e.g. phosphorus and nitrogen, required for crop growth. Frequently soils have large concentrations of aluminium and salts which inhibit plant growth, and in addition are compacted and shallow, with poor water-holding capacity. Agriculture is often in areas with limited, seasonal and erratic rainfall, with high temperatures, so water deficits are common and severe crop losses frequent. Indeed, the correlation between rainfall and yields is striking, and drought is the single largest cause of economic problems, and hunger (Ortiz *et al.*, 2007). Pests and diseases are diverse over such large and diverse areas, and inhibit production substantially. A wide range of traditional crops are grown; they are largely unselected and although giving relatively stable yields, these are small, and in years with good environmental conditions do not exploit the resources available.

Crops and Improved Varieties

Subsistence agriculture is based on farmer's self-selected seed from 'land-races' of crops, grown for many generations under the local environmental conditions, with some tolerance to biotic and abiotic conditions, not only to the average but also to extremes. However they are often relatively unproductive in good conditions. In more advanced agriculture cultivars have been selected by scientific breeding methods, and simultaneously there has been interaction between breeding and agronomy. Improved conditions could be exploited by crops of greater yield capacity- there seems to be an approximate 50:50 balance between the genetic and agronomic components. The green revolution which increased yields of wheat (e.g in the Indian Sub-continent) dramatically, involved both improved cultivars and better agronomy, with much increased fertilizer and water supply, better pest and disease control, more mechanisation etc. Selections should be under the target environmental conditions, not under extremely good conditions e.g. in breeding stations. Active breeding programmes are required in target environments where large areas of the commonest crop are grown, so that small improvements in yield would translate into large increase in total production.

What need to be done?

Indian agriculture is a major economic activity, with millions of people dependent on it, but yields are small and variable, because with poor soils crop nutrition is inadequate and water supply limited and erratic. Case studies show that very rapid and substantial improvements in yield will accrue from improvements in crop nutrition. Increasing soil organic matter and nutritional status is desirable but an immense task. Water supply and soil water-holding capacity will be difficult to improve, but scientific concepts necessary for advancing agronomy and giving greater efficiency are not being adequately applied or researched in specific Indian environments. Irrigated agriculture may not be applying best-practice methods and ideas. Crop yield potential must be improved, but requires breeding for specific environmental conditions and should utilise advanced molecular breeding tools. Development of Indian capacity for this task should be a priority. Genetic modification of basic metabolism for drought resistance is laudable, but the frequently stated potential is unlikely to be realised with practical crop adaptations because of the complexity of the genetic and metabolic systems which must be manipulated. Also, because of the gene \times environmental interaction changing single traits is unlikely to be productive. More complex regulation of gene expression may provide advances. Advanced scientific research on these topics is required, directed towards Indian agronomy with full involvement of Indian scientists and institutions. However, given the uncertainty of the genetic modification approaches resources should not be concentrated on the subject at the expense of scientific support for more proven methods of increasing yield. Use of indigenous and under-utilised Indian crops and species should be fostered by research and development. Wild species, such as marama bean, may take considerable effort and time to select and adapt sufficiently for use in agriculture. Excessive expectations about the ability of such plants to provide large quantities of food in poor environments are not justified.

Summing Up

Indigenous crops offer greater potential. To increase production, more scientists and engineers with modern training are required in research and extension services. Currently many aspects of agro-ecology are not being adequately addressed, despite the best efforts of local and international organisations. Initiatives by GOs and NGOs are addressing improvement of cultivated areas but projects are often of limited scope, short-duration and have inadequate involvement of farmers in 'top-down' projects, all of which work against successful, sustainable implementation of scientific agriculture. Also, there are inadequacies in political, social (especially educational) and physical infrastructure. Plant science has an

enormous role to play in improving agriculture in India, as one feature of improved social development. International support for National development is contributing greatly to capacity building, but progress is slow. Improvements in agricultural production are required urgently and efforts should be directed to science associated with achievable goals and technology.

References

1. E. A. Stockdale, N. H. Lampkin, M. Hovi et al., "Agronomic and environmental implications of organic farming systems," *Advances in Agronomy*, vol. 70, pp. 261–327, 2001.
2. P. K. Chhonkar, "Organic farming myth and reality," in *Proceedings of the FAI Seminar on Fertilizer and Agriculture Meeting the Challenges*, New Delhi, India, December 2002.
3. P. K. Sofia, R. Prasad, and V. K. Vijay, "Organic farming-tradition reinvented," *Indian Journal of Traditional Knowledge*, vol. 5, no. 1, pp. 139–142, 2006.
4. S. Chandra and S. K. Chauhan, "Prospects of organic farming in India," *Indian Farming*, vol. 52, no. 2, pp. 11–14, 2004.
5. K. K. M. Nambiar, P. N. Soni, M. R. Vats, D. K. Sehgal, and D. K. Mehta, "AICRP on long term fertilizer experiments," *Annual Reports 1987-88 and 1988-89*, IARI, New Delhi, India, 1992.
6. S. Kalyan, "Development of sustainable farming system model for the Irrigated agro-ecosystem of Eastern UP, ICAR, Ad-hoc project," *Final Annual Report*, Department of Agronomy, Institute of Agricultural Science, Banaras Hindu University, Varanasi, India, 2005
7. H. L. S. Tandon, "Fertilizers and their integration and organics and bio-fertilizers," in *Fertilizers, Organic Manures, Recyclable Wastes and Bio-Fertilizers*, H. L. S. Tandon, Ed., pp. 32–36, FDCO, New Delhi, India, 1992.
 - A. R. Sharma and B. N. Mitra, "Complementary effect of organic material in rice-wheat crop sequence," *The Indian Journal of Agricultural Sciences*, vol. 60, no. 3, pp. 163–168, 1990.
8. D. S. Ranganathan and D. A. Selvaseelan, "Mushroom spent rice straw compost and composted coir pith as organic manures for rice," *Journal of the Indian Society of Soil Science*, vol. 45, no. 3, pp. 510–514, 1997.
9. M. Tamaki, T. Itani, and H. Nakano, "Effects of organic and inorganic fertilizers on the growth of rice plants of rice plants under different light intensities," *Japanese Journal of Crop Science*, vol. 71, no. 4, pp. 439–445, 2002.
10. S. K. Yadav, S. Yogeshwar, M. K. Yadav, B. Subhash, and S. Kalyan, "Effect of organic nitrogen sources on yield, nutrient uptake and soil health under rice (*Oryza sativa*) based cropping sequence," *Indian Journal of Agricultural Sciences*, vol. 83, no. 2, pp. 170–175, 2013.
11. K. Surekha, "Nitrogen-release pattern from organic sources of different C : N ratios and lignin content, and their contribution to irrigated rice (*Oryza sativa*)," *Indian Journal of Agronomy*, vol. 52, no. 3, pp. 220–224, 2007.
12. V. K. Tomar, R. K. Bhatnagar, and R. K. Palta, "Effect of vermicompost on production of brinjal and carrot," *Bhartiya Krishi Anusandhan Patrika*, vol. 13, no. 3-4, pp. 153–156, 1998.
13. S. Kalembasa and J. Deska, "The possibility of utilizing vermicompost in the cultivation of radish and paprika," *Annals of Agricultural University of Poznan*, vol. 27, pp. 131–136, 1998.

Financial Management

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Abstract:

“Money makes many things” is the good olden proverb which explains the important of money in the life of not only human beings but also organizations. A business enterprise that is not having proper financial planning and control loses its resources and consequently goes out of its existence. It is aptly stated that **“business needs money to make more money”**. But it is true only when the money so generated is efficiently and effectively managed. Therefore, the job of Financial Management in organization is compared to that of heart in a human body. At the heart receiving impure blood from all organs, purifies it and distributes the pure blood to all organs, the Financial manager gathers monetary resources from all business transactions and uses them again for survival and growth of business transactions. Hence, **Henry Ford** quoted **“money is an arm or a leg. You either use it or loose it”**.

Introduction:

In the present day economy, finance is defined as the provision of money at the time when it is required. Every enterprise, whether big, medium, or small, needs finance to carry on its operations and to achieve its targets. “Money makes many things” is the good olden proverb which explains the important of money in the life of not only human beings but also organizations. A business enterprise that is not having proper financial planning and control loses its resources and consequently goes out of its existence. It is aptly stated that “ business needs money to make more money”. But it is true only when the money so generated is efficiently and effectively managed. Finance has been traditionally classified into two classes.

Public finance: deals with the requirements, receipts and disbursements of funds in the government Institutions like states, local self- governments and central government. **Private finance** is concerned with requirements, receipts and disbursements of funds in case of an individual, a profit seeking business organization and a non-profit organization.

Definitions:

Ezra Soloman quotes, “Financial Management is concerned with the efficient use of an important economic resource, namely, capital funds”.

According to Weston and Brigham says that “Financial Management is an area of financial decision making harmonizing individual motives and enterprise goals”

Scope of financial management:

The main objective of financial management is to arrange sufficient finances for meeting short term and long term needs. These funds are procured at minimum costs so that profitability of the business is maximized.

1. Estimating financial requirements.
2. Deciding capital structure.
3. Selecting a source of finance
4. Selecting a pattern of Investment
5. Proper cash management
6. Implementing financial control
7. Proper use of surpluses

Nature of Financial Management:

1. Financial Management is different from financial accounting.
2. Centralised nature of finance function
3. Helpful in decisions of top management
4. Applicable to all types of concerns
5. Financial planning, control and follow-up.

Concept of Financial Management:

1. The organization of capital market in the form of financial institution
2. The legal and accounting aspects of capital markets
3. The modern approach is an analytical way of viewing the financial problems of a firm
4. Funds are raised from the capital markets through financial instruments along with the practice & Procedural aspects of capital markets.

Functions of financial Management:

The study of financial institutions like stock Exchange, Capital markets etc, is also emphasised because they influence underwriting of securities and corporate promotion. Company finance was considered to be the major domain of financial management.

1. Determining Financial needs
2. Selecting the sources of funds
3. Financial Analysis and Interpretation
4. Cost-Volume-Profit Analysis
5. Capital budgeting
6. Working capital management
7. Profit planning and control
8. Dividend policy

Role of a finance Manager:

The changed business environment in the recent past has widened the role of a financial manager, The increasing pace of industrialization, rise of larger-scale units, innovations in information processing techniques, intense competition etc have increased the need for financial planning and control. The size and extent of business activities are dependent upon the availability of finances. Financial reporting may be used as a technique of control.

1. Financial Forecasting and planning
2. Acquisition of funds
3. Investment of funds
4. Helping in valuation decisions
5. Maintain proper liquidity

Objectives of Financial Management:

Financial management is concerned with procurement and use of funds. Its main aim is to use business funds in such a way that the firm's value /earnings are maximized. There are various alternatives available for using business funds. Each alternative course has to be evaluated in detail.

1. Profit Maximisation
2. Wealth Maximisation

1.Profit Maximisation:

1. Profit earning is the main aim of every economic activity.
2. A business being an economic institution must earn profit to cover its costs and provide funds for growth.
3. No business can survive without earning profit. Profit is a measure of efficiency of a business enterprise.
4. Profits also serve as a protection against risks which cannot be ensured.

The following arguments are advanced in favour of profit maximization as the objective of business:

1. When profit-earning is the aim of business then profit maximization should be the obvious objective.
2. Economic and business conditions do not remain same at all the times. There may be adverse business conditions like recession, depression, severe competition etc.
3. Profits are the main sources of finance for the growth of a business
4. Profitability is essential for fulfilling social goals also.
5. A company is financed by shareholders, creditors and financial institutions and is controlled by professional managers.
6. Workers, customers, government and society are also concerned with it.

Profit Maximisation has been rejected because of the following drawbacks:

1. Ambiguity
2. Ignored time value of money
3. Ignores risk factor
4. Dividend policy

Wealth maximization:

1. Wealth maximization is the appropriate objective of an enterprise.
2. Financial theory asserts that wealth maximization is the single substitute for a stockholders utility.
3. When the firm maximizes the stock holders wealth, the individual stockholders can use this wealth to maximize his individual utility.
4. Stockholders current wealth in a firm:
5. (number of shares owned) x(current stock price per share)

6. Symbolically $WO = NPO$
7. Algebraically net present value or worth can be expressed as follows, using Ezra Solomon's symbols and models.

$$W = \frac{A_1}{1+K} + \frac{A_2}{(1+K)^2} + \dots + \frac{A_n}{(1+K)^n} - C$$

Where W = net present worth with A_1, A_2, \dots, A_n cash inflows
 K = Appropriate discount rate to measure risk and timings
 C = Initial outlay required

1. The wealth Maximization objective when used as decisional criterion serves as a very useful guideline in taking investment decisions.
2. The concept of cash flows is more preserve than that of accounting profit.
3. The wealth maximization objective considers time value of money.
4. At the same time it also gives due weightage to risk factors by making necessary adjustments in the discount rate.
5. Thus cash benefits of project with higher risk expenditure is discounted at a higher discount rate while lower discount rate is applied to discount expected cash benefits of a less risky project.

Implications of wealth maximization:

1. Suppliers of loan capital
2. Employees
3. Society

Criticism of wealth Maximization:

1. The wealth maximization objective has been criticism by certain financial mainly on following accounts.
2. It is a Prescriptive idea. The objective is not descriptive of what the firms actually do.
3. The objective of wealth maximization is not necessary socially desirable.
4. There is some controversy as to whether the objective is to maximize the stockholder wealth or the wealth of the firm which includes other financial claim holders such as debenture holders, preferred stockholders etc.

Conclusion:

Financial management practices is a field which deals with financial decisions including short and long goals of the organization and ensures that there is a high return on the invested capital without necessarily taking excess finance risk.

References:

1. Brigham, Eugene F. Fundamentals of Financial Management. 5th ed. Dryden Press, 1989.
2. Gallinger, George W., and Jerry B. Poe. Essentials of Finance: An Integrated Approach . Prentice Hall, 1995.
3. Higgins, Robert C. Analysis for Financial Management. McGraw-Hill, 2000.
4. Noe, Thomas H. & quot; Corporate Finance, Incentives, and Strategy.& quot; Financial Review. November 2000.
5. Petty, J. William, Arthur J. Keown, David F. Scott, Jr., and John D. Martin. Basic Financial Management . 6th ed. Prentice Hall, 1993.
6. Antoniou, A., Guney, Y & Paudyal, K. 2006. The determinants of debt maturity structure, evidence from France, Germany and UK. European Financial Management, 12(2): 161-194
7. Frank, M.Z. & Goyal, V.K. 2009. Capital structure decisions: which factors are reliably important? Financial Management, 38(1): 1-37.
8. Kester, C. 1986. Capital and ownership structure. A comparison of United States and Japanese manufacturing corporations. Financial Management, 15(1): 5-6.
9. Laeven, L. 2003. Does financial liberalization reduce financing constraints? Financial Management, 32(1): 5-34.

Impact of COVID-19 Pandemic Crisis on Indian Economy Problems and prospects

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Abstract of the paper:

Human disaster COVID-19 has completely driven the people lives of India as well as rest of the world, totally in a different way. Hence similar to other countries, India is also badly troubling now in an enormous way like education and so called best health infrastructures totally affect the economic condition towards downward direction of today's time and the future in a cruel manner. There is no end till now to stop this pandemic and the whole world are facing another COVID-19 aftermath i.e. pandemic crisis. Economically, India was already in a bad condition before start of this pandemic and now this crisis has created more and more pathetic situation for the people. All the people lives of both urban and rural areas are deadly affected by this pandemic crisis. Social distancing and other safety precaution are not fully followed by the people. On the other hand, this pandemic crisis has increased the unemployment rate with anxiety and depression. In that situation, both government and public health care sector are collapsed due to heavy COVID-19 patients. The earlier physical class room system is totally changed into online class room system and learners (basically in rural sectors) fell some difficulty to adopt this. This research paper to be discussed "Impact of COVID 19 Pandemic Crisis on Indian Economy Problems and Prospects"

Keywords: Depression, Physical distance, GDP, e-comers, health, mental health, domestic violence, online education system, migrant workers, unemployment, gender bias.

Statement of the Problem

"You have to take it seriously that the economy is in crisis"

Abhijith Banerjee,

Economist, Nobel Laureate

The COVID-19 pandemic has badly impacted on India in an enormous way, especially on the overall health systems, education and economic activities. In this terrible situation, the informal economic system of India has now suffered due to the socioeconomic inequalities which divide the country. Nowadays, numbers of people dying from hunger and death toll poor health infrastructures are extremely increasing day by day.

This pandemic crisis deadly effect on the people lives of both urban and rural areas. In this time, this disease is completely transmitted from urban to rural sectors of India and creates a real traumatized situation. Social distancing is very difficult to follow by the poor urban people who live in slums and nowadays it totally does not follow by many people especially the villagers in their daily life. Besides this, the pandemic crisis has brutally exposed the weakness of some of the best health systems of India. At this cruel moment, government facilities are already overstretched in a highly fractured, underfunded and geographically uneven health system. Now in this pandemic crisis situation, it invites us to re-examine the current crisis and how dysfunctional health infrastructures may collapse under the strain of the coming dramatic cruel situation to develop better long lasting health qualities. On the other side, education system in India is also facing a downward situation due to COVID-19 pandemic. If this online learning is the "new normal", then the policy must require the feasibility of digitalization to confirm equity and quality education. Hence, in this time returning to pre-lockdown stage will take some time to overcome the overall pandemic situation after the unlock phase. In this chapter, we basically discuss the pandemic crisis on health, education system and economic condition of India.

Pandemic Crisis and Indian Economy

The economic condition of India (a developing market) has already been gone through a crisis phase from the last year 2019 (reduced to 4.9%). According to economist, the crucial reason behind this economic downfall was the demonetization effect in November 2016 which created 86% of total money of the economy unusable overnight. This caused negative impact on various growing industry, lowering the demand of vehicles sale in India. Tourism of India is also one of the most powerful sectors which ranked 34th among 140 countries, also experienced downward condition. So, the overall lockdown effect was cruelled to small, medium and large enterprises of the country, leading to jobless and economic downward situation. However, most of the private and government sectors were advised a new direction of workplace i.e. work from home (WFH). Though it is suitable for urban upper and middle class people but challenging

for those people who belongs from rural agriculture based sectors. This is due to the improper facility and lack of knowledge of computers, mobile and internet.

Most of the companies such as Aditya Birla Group, BHEL, Tata Motors, Bharat Forger, Ultratech Cement and Grasim Industries have temporarily suspended or significantly reduced their operations in India in this pandemic crisis. Young startups have also been impacted due to cutting of appropriate funding. Many fast-moving consumer goods companies in the country have now drastically reduced their operations. Stock markets in India are also affected by this pandemic and experienced biggest losses in history on 23 March 2020.

Pandemic Crisis Affect GDP Growth

COVID-19 pandemic is created economic crisis rather than health crisis because the world's best economies countries are experiencing negative GDP growth. The growth of an economy of any country is generally measured by GDP growth in percentage. According to Organisation for Economic Co-operation and Development (OECD), the world economy could face the same growth as it was in 2009 due to the pandemic crisis. India's GDP was showing alarming negative value of 23.9% which is all time lowest in the past 40 years. These estimates are only in formal sectors but if we add estimates of informal sector, then the contraction will be more negative. It is not only due to the lockdown but also due to the reason of both demonetization effect and application of GST. Demonetization and GST have fully controlled the local market especially the unorganized sector and after this pandemic, the whole unorganized sector is badly affected. On the other side, after the imposition of GST, most of the states in India are troubled in a financial crisis because of the reduction of state tax revenue and COVID-19 pandemic crisis has multiplied this problem. In addition, on account of this ongoing health crisis, it is predicted that the state revenue may be decreased by 30%. Indian Economy is one of the fastest growing economy, but this downward GDP may cause the country's position towards somewhere back to 45 years.

Impact of Pandemic Crisis on E-Comers:

This pandemic has significantly increased the e-commerce industry. The B2B services have been developed a new platform in the area of healthcare by delivering goods ranging from essential medical care and also ventilators. These companies are engaged to produce items related to healthcare facilities as some people are regularly monitoring their health and fitness of their families. This pandemic crisis has significantly increased online shopping usage in India. It is well known that the number of first time-e-commerce-users (FTUs) who had been so far inhibited to shop online is steeply increased after this pandemic. Finally, the COVID-19 outbreak has dramatically changed people's shopping habits because of the fair of shopping outdoors. On the other hand, online food ordering and delivery platforms like Zomato and Swiggy have proposed themselves as high percentage of deliveries with maintaining proper hygiene. Besides, various gaming platforms and Over the Top (OTT) media have exponentially raised their business by sharing screen with people at home. Netflix, an online streaming service found record paid subscribers of about \$15.8 million only in the first three months of 2020 in India and various parts of the world. On the other hand, travel and luxury goods industry have experienced significant loss from this pandemic.

Migrant Workers during this Pandemic Crisis:

Millions of migrant workers face an uncertain future for the sudden announcement of lockdown on 24th March 2020. Report says that about 50 million people mostly migrated to Maharashtra and Delhi to live their better life from West Bengal, Assam, Bihar, Odisha, Rajasthan, Punjab, Madhya Pradesh and Uttar Pradesh. So, many of the workers with their children and pregnant women were forced to walk on foot for returning home due to the transport unavailability in the early lockdown stage. Hence, India showed second largest mass transfer in history after partition of India, 1947. In India, a large number of migrant workers such as auto rickshaw drivers, carpenters, delivery boys, domestic laborers, scrap or waste collectors, tea girls, vegetable vendors, and waiters are dependent on daily wages and thus their daily income is in downward condition by this pandemic.

Pandemic Crisis on Health System:

In this critical situation, medical facilities are totally hampered in India. Major discrepancies and disruption are observed for other treatment because of the busy schedule of huge number COVID-19 cases. Children vaccination program such as tuberculosis, meningitis, pneumonia, whooping cough, tetanus, hepatitis B and diphtheria etc. are now faced little difficulties (Rukmini, 2020). Disruptions of kidney dialysis and chemotherapy treatment of cancer are also faced difficulty for adults. Tuberculosis (TB) is one of the highest burdening diseases in India, generally due to malnutrition associated with poverty. This pandemic crisis has given a highly direct negative impact on TB cases while they are also penetrable to COVID-19 infection. In this pandemic, there is increasing report of domestic violence in India. These issues of domestic abuse or family violence are now an increasing risk of domestic violence-related

homicide. In addition to adult victims of family violence, there are some children and pets who reside in 60 % or more of households where domestic violence is perpetrated, are suffered from physical or emotional distress. According to the National Commission for Women in India, the sharp rise in distress and economic crisis are the main reason for domestic violence during the COVID-19 lockdown.

Summing Up

In this present study, the effect of COVID-19 pandemic crisis on Indian economy, health and education system is discussed. These entire crises are interdependent and turned into huge slowdown of entire economic condition of India forever in the history. Also we do not know where the end of this pandemic and how much time it taken to overcome? As time is going on, Indian economy will expect to experience highest downfall than the other countries because our so called best health infrastructures were already in terrible situation before this pandemic. We should only wear mask and use sanitizer or hand wash or soap to become healthy at this pandemic situation until the proper vaccine will come into the market. The government should bring some new useful techniques, facilities and develop or re-build the health and economic structure for the profit of people by their valuable experts. If these rules are followed properly by us and the government, then we will definitely overcome this crisis and will go to the new normal life once again.

References:

1. Ghosh, A., Nundy, S. & Mallick, T. K. (2020). How India is dealing with COVID-19 pandemic. *Sensors International* 1, 100021.
2. Dahdah, M. A., Ferry, M., Guerin, I. & Venkatasubramanian, G. (2020). The Covid-19 Crisis in India A Nascent Humanitarian Tragedy. *Essay International*.
3. Dev, S. M. & Sengupta, R. (2020). Covid-19: Impact on the Indian Economy. *Indira Gandhi Institute of Development Research, Mumbai Working Papers 2020-013*, Indira Gandhi Institute of Development Research, Mumbai, India.
4. Kaur, S. (2020). Impact and Contribution of Travel and Tourism Industry on Indian Economy, 40, 2365.
5. Sharma, G. D. & Mahendru, M. (2020). Lives or livelihood: insights from locked-down India due to COVID19, *Soc. Sci. Humanit. Open* 2. 100036, <https://doi.org/10.1016/j.ssaho.2020.100036>.
6. Srinivasan, C. (2020). Centre Tells Employees To Work From Home, Staggers Hours amid Virus Scare, *NDTV*, 2020. <https://www.ndtv.com/india-news/coronavirus-outbreak-india-centre-orders-employees-to-work-from-home-staggers-office-hours-2197395>.

Related Websites and Related Internet Resources

1. www.weforum.org/agenda/2020/10/how-covid-19-deepens-the-digital-education-divide-in-india/
2. www.financialexpress.com/economy/indian-economy-under-triple-crisis-what-govt-must-do-to-bring-it-on-growth-track/2094984/
3. retail.economictimes.indiatimes.com/re-ales/impact-of-covid-19-on-online-shopping-in-india/4115

Feminist Movements In Modern India

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Abstract of the Paper

Society has been patriarchal for most part of recorded history. It is difficult to talk about the position and status of women, with all women being categorized as uniform. There has been infinite variation on the status of women depending on the culture, class, caste, family structure and property rights. Even while women have right to kinship systems, the entire mechanisms of marriage, descent, residence and inheritance are rarely organized in such a way as to guarantee women access to resources or to allow them to secure access for other women. In fact under patriarchal order kinship, conjugal and familial systems tend to construct women in such a way that they hardly live as independent beings and they are seen only in relation to men, thus depriving women of their selfhood and agency. Hence for a proper understanding of the social reform movements for the development of women in India it is necessary to examine the historical background that necessitated and brought about social reforms. In Indian history, we see major shifts in the position of women in different periods and some of these changes are reflected in the texts that prescribe codes of behaviour and therefore capture the dominant worldview of the period. The role and status of women throughout ancient and medieval period has been far from static ranging from one of authority to freedom to one of subservience. Most of the historical sources by and large refer to the elite sections of society concentrating on the court and the aristocracy and hence when they talk of women they generally refer to women of this class because women from other classes and tribal backgrounds had different norms. This research paper to be discussed about “Feminist Movement in Modern India”

Keywords - Feminist, Social Stream, Aristocracy, Literary Messages, Male dominated society, Women Education.

Statement of the Problem

“We Woman are going to be bring change”

Malala Yousufzai,

A familiar Woman Organizer and Nobel Laureate

Most of the source material that is available for the reconstruction of Medieval India is written within the Indo-Persian tradition and was composed in a court setting. We do not get much information about the women and their activities. The few women who find mention in the records are women like Razia, Nurjehan, Rudramma Devi, who were exceptions and hence cannot be generalised. We have no information on the domestic life of ordinary women of medieval times. India witnessed significant socio-economic changes during the medieval period giving rise to new social groups which could not fit into traditional hierarchy. We have a large number of inscriptions of the newly emergent groups who prosper because of the changes in the economy, particularly agrarian expansion and crop diversification. The polities that appear throughout the subcontinent during the Middle Ages were not the dispersed fragments of a previous central government, but new formations arising out of the extension of agrarian settlement and the resulting growth of population.

Position of Women in the British Period

The advent of the Europeans into India did not change the situation of women. Like other Western powers, the primary objective of the British in the earlier days was trade. Later when they were faced with the administration of newly conquered areas, they thought it safe not only to keep the existing social structure intact but also to induct its religious pundits (Brahmins) to interpret its rules when necessary. The introduction of English education first started to train Indians for jobs under British administration. This created upper class elites who began to doubt the rationale of many of the existing practices in their society. The establishment and expansion of the British rule also encouraged British missionaries to enter their colonies and start schools, orphanages and destitute homes especially for widows. They stood against *sati*, child marriage, *purdah* and polygamy. The new Indian elite exposed to European liberalism of the 18th century through Western education, felt the urgency for reform of their own society. This produced tangible results in the subsequent periods.

Women’s movements in the post colonial period

The period after India’s independence is called post-colonial period. Immediately after

independence, India had to deal with a variety of problems. Years of colonial domination had destroyed our indigenous crafts and depleted our natural resources. Industrialisation, changing technologies illiteracy, lack of mobility all resulted in the inability of women to cope with the new order. During this period the social reformists tried to channelise the Indian society by introducing constitutional and legal provisions and protecting the society and the women from discrimination and by providing equality to all the citizens irrespective of caste, creed, race, religion and sex.

Political-Social-Economic Agenda Of The Women's Rights Movement

The nationwide anti-rape campaign in 1980 resulted in the emergence and proliferation of autonomous women's organisations in several cities and towns of India. These groups such as Forum Against Oppression of Women (Mumbai), Saheli (Delhi), Stree Shakti Sangathana (Hyderabad), Vimochana (Bangalore) managed to get tremendous publicity in the print as well as the audio-visual media because at that time 'violence against women' was the most sensational and the newest issue. Family members, especially fathers and brothers of the women victims of violence flooded the women's groups. Later on, the women victims started approaching these groups on their own. While doing agitational and propaganda work against the series of rape cases in custodial situation, domestic violence and dowry harassment, these groups realised that to work on a sustained basis and to take care of the rehabilitative aspects of violence against women, it was important to evolve institutional structures for supporting women victims of violence based on feminist principles of solidarity (mutual counselling) and sisterhood. The criminal legal system in India made it inevitable for these groups to establish rapport with the police for an immediate redressal to the women victims of violence. The condition of women in the remand homes and the Nari Niketans were so repugnant and barbaric that they could not be trusted for women's rehabilitation. In fact, many women who suffered at their hands approached the new women's groups. The women activists had to deal with the attitude of victim-baiting and double standards of sexual morality, sexist remarks, and sick humour from the staff of the police, the legal apparatus and the public hospitals. At each and every step, they encountered class, caste and communal biases. These resulted into confrontation between the women's groups and the established institutions. However, in course of time, they realised that it was necessary to suggest concrete alternatives for attitudinal changes in terms of legal reforms, method of interventions and staff training. For public education, literature written in convincing style was a must. Audiovisual material for reaching out to more and more people was necessary. Professional bodies and educational institutions were approaching these groups for understanding the women's question.

Anti Arrack Movement in Telugu States

The anti-arrack movement of women in Andhra Pradesh was one of most historic and significant movements of the 1990s. The historic bangle waged by the women of Andhra Pradesh against the social evil of alcohol drinking is a magnum war in Indian social history. Women have played a historic role in bringing about a ban on consumption and sale of distilled liquor in Andhra Pradesh. The movement indeed was not just for elimination of liquor but for the protection and survival of their lives and culture. The rural women in the villages raised their voices against the degeneration of the progress of their families through the damage caused by their men to their children and themselves.

The movement was started in a small village, Dubagunta, in Nellore district of Andhra Pradesh. The main reason for the movement was said to be the successful literacy mission that has been going in Nellore district. The National literacy Mission (NLM) was officially launched in Nellore District from 2nd January 1990 and was implemented from January 1991. This program was implemented in a very innovative way with recognition of development as an instrument of change and empowerment of women. Hence a campaign approach was adopted to spread the message of literacy. Primers were written, popular performances used and a center for people's awareness created. Besides this, cultural committees were organised to convey the meaning and need for literacy in the forms of songs, dance-dramas and street plays. Sharing of problems through such mediums helped women to create a close bonding. They decided to fight the vice of drinking. The women reasoned that if the arrack shops were closed the men would not get liquor and hence would not drink. These women then marched together the next day and were able to get the arrack shop closed in their village.

The Dubagunta episode was soon quoted in another literacy primer, under the title, *Adavallu Ekamaithe, (If Women Unite)*. The lesson had an electrifying impact on women in other villages who felt that they could do the same. In many villages women's committees were formed. Their fight turned into a larger issue involving contractors, the excise department and the state itself. The women wanted to know why their village did not have drinking water, schools for children or proper wages but plenty of arrack shops (ibid). Anti-arrack movement though started as a spontaneous outburst of lower class and lower

caste women it soon became a rage through classes and castes against local arrack shops, excise officials, liquor contractors and all the machineries of state involved in the trade.

Summing up

Apart from these, the women resisted pressure tactics and attacks from those whom they were fighting. The inspirational guidance extended by the veteran freedom fighter Mr. Vavilala Gopala Krishnaiah, added momentum to the movement organised and spread to all villages in the district. Soon all the arrack supply sources were blocked. There were spontaneous and simultaneous demonstrations in all the areas against the evils of arrack consumption. Unlike the women's movements in America and Britain, in India, the concern for women's freedom was first espoused by enlightened males during the British era who had imbibed liberal ideas. Upto the 1920s the struggle was carried on by men. It was only after Mahatma Gandhi's entry into politics, that the nationalist movement under his leadership was transformed from a middle class movement into a mass movement where women for the first time raised their voices against the disabilities that they suffered. It is the women's movement in India that has been the force behind the long struggle of women's advancement from subordination to gender equality and finally to women's empowerment. Though a lot needs to be achieved and there are various impediments in making this reality available to a large section of women, the women's movement has brought women's issues centre stage and made them more visible.

References

1. Banerjee, Narayan. 1992. *Grassroots Empowerment Mimeograph*. New Delhi: Center for Women's Development Studies.
2. Kumar, Radha. 1993. *History of Doing*. New Delhi: Kali for Women.
3. Lal, Ruby. 2004. *Domesticity and Power in the Early Mughal World*. Cambridge: Cambridge University Press.
4. Mukharjee, B.N. 1975. "Awareness of Legal Rights Among Married Women And their Status". *Indian Anthropologist*, 5 (2) 30-58.
5. Pande, Rekha. 2010. *Divine Sounds from the Heart, Singing Unfettered in their Own Voices- The Bhakti Movement and its Women Saints (12th to 17th century)*. U.K: Cambridge Scholars Publishing.
6. Pande, Rekha & Kamweshwari J. 1987, "Women's Discourse on Education (A Preliminary Reading of the Speeches Delivered at the Annual Conferences of the Andhra Mahila Sabha, 1913 & 1914)". *Proceedings of Indian History Congress*, pp. 390 -396.
7. Panniker, K.N. 1975. "Presidential Address". *Proceedings of Indian History Congress*.
8. Patel, K.A. 1975. "International Women's Year : Half of Humanity and New International Order." *Mainstream*, 13 (49).
9. Thapar, Romila. 1975. "Looking Back in History". Devaki Jain (ed.) *Indian Women*. New Delhi: Publication Division, Government of India.

Emerging Library Technology Trends-A Critical Review

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Abstract of the Paper

Due to a growing significance and applicability of information technologies to an academic institution, it is necessary to acquaint librarians and other information professionals with the technology which can be applied to academic environment since the development of digital competence is an inherent part of every school's curricula. Emerging library technologies such as Bibliographic Citation Management Software, Instructional System Design Software, Electronic Copyright Management System, Classroom Management Software, Library Automation Software, Electronic Resource Management Software and Integrated Search Software are very impactful as academic libraries move into the creation of digital contents. This paper reviewed the emerging library technology trend especially for academic libraries as well as the need to rethink and re-strategize on how increasing technological changes affect their services. Clear indications on libraries' need of emerging technology tools to support academic librarians for efficient and effective performance were presented. Recommendations were offered on persistent self-renovation by library professionals in order to stay ahead of technology learning curve. This research paper to be discussed "**Emerging Library Technology Trends – A Critical Review**".

Keywords: Academic library, Automation, Digital skill, Library technology, Software, Technological-know-how

Statement of the Problem

"The library is the temple of learning and learning has liberated more people than all the wars in history"

Carl T. Rowan

American Philosopher and Scholar

Introduction

The technological-know how of an emerging library technology trend can be a challenge, as both the tasks that librarians are taking on and the tools, they are using to do them seem to be changing daily. Nevertheless, it is especially important for academic librarians to be aware of technology skills and knowledge that are in-demand, because increasingly, these tools will be central to successful performance of their institutions. Depending on their work, all manner of online research tools such as scholarly databases, government e- resources, research citation and mapping tools, as well as international sources may be a requirement in order for academic librarians to perform their jobs effectively. Technology is the portal through which we interact with information, but people's ability to handle information to solve problems and think critically about information tells us more about their future success than their knowledge of specific hardware or software. The step of technological change is quick and new library technologies are available while many more are looming. It may not be possible to adopt all the innovation and technologies because most libraries cannot afford to implement each and every innovation once it becomes obtainable. However, libraries must have a vision to match the new technologies to user and institutional needs. Libraries need to have the aspiration in adopting new technologies. Undoubtedly, the implementation costs will be important for any kind of new technologies for all library categories especially academic libraries. Before implementing the new technologies, the feasibility study is very important and need a focus approach that indicate it will work in the future.

Libraries do not only need to implement any technology on the basis of what it will do for library users today, but also with the hope that it will grow and change to meet the evolving needs of library users over the next few years. Therefore, technology decisions need to be made with an eye to the future. Digital library applications are closely linked to Web technology. Consequently, as modern academic libraries move into the creation of digital content, its organisation and preservation through metadata creation and management to make their special collections more accessible via the Web, the need for knowledge of the following technologies becomes critical: Bibliographic Citation Management Software, Instructional System Design Software, Electronic Copyright Management System, Classroom Management Software, Library Automation Software, Electronic Resource Management Software and Integrated Search Software. Therefore, to stay on top of technology invention in higher institution of learning, academic library should

be the first learning centre where such technology should be experienced either in documented or practical form. The objective of this paper is to explore different emerging library technologies applicable in academic environment, their usefulness and benefits. Systematic literature review approach was adopted to describe the variables as stated in the title.

Bibliographic Citation Management Software

Most popular bibliographic citation management software performs some basic tasks as its advantages are numerous to mention but a few, for academic community. First, it helps organize references. Using this software, user can collect and manage groups of citations; set up groupings by topic; sort references; select the ones to cite in a particular article; and so on. Naturally, one could do all this using a standard database program like Access or FileMaker Pro, but citation management software is already structured to accommodate the specific fields associated with bibliographic information. Next, this software will create bibliography and footnotes. In addition, these packages are compatible with Word and all other standard word processing programs. This means that user can store the basic information within citation manager, and then set up the references in document, using whatever style format chose. No more frantic searching through the style manual to make sure footnotes are correctly done – the software does all of that. There are several popular bibliographic citation management software packages available e.g EndNote, ProCite, Reference Manager, BibTeX etc. posit that developing expertise in the use and features of these programs to help the institution's faculty, researchers, and students, does increase the librarian's value in the institution.

E-copyright Management System (ECMS)

The advent of digital technology has meant that digital content can be easily copied without loss of quality and also easily distributed (via the Internet) throughout the world. Famous legal battles demonstrate the potential threat that copyright holders feel from digital copying, especially their inability to control the dissemination of their work. Rights-holders, however, have fought back by using technological measures to protect their work. This has posed a dilemma. On one hand, rights holders aim to protect their work from unauthorised copying and use; on the other hand, users desire greater freedom to use these works. This therefore compelled the use of E-copyright Management System ECMS especially in academic environment. It involves the use of Digital Rights Management (DRM) software or Intellectual Property Management software. It helps prevent unauthorized redistribution and copying of digital property of all types including images, PDF, video and web pages etc.

ERMS offer the following benefits to library management, staff and the patrons alike;

- i. It speeds up workflow and save staff time.
- ii. It reduces dead-end-user searches and patron confusion
- iii. It eliminates costly overlap between packages
- iv. It addresses the ever-growing size and complexity of e- resources
- v. It provides usage statistics for smart collection decisions
- vi. It simplifies set-up and maintenance with Innovative Content Access Service (CASE)
- vii. It helps library to make the most efficient use of library budget

Some companies are developing products that work with existing integrated library systems (ILS), while others are standalone products. The standalone ERMS could be at disadvantage to a library running an existing integrated system. Other factors which may hinder academic library from adopting ERMS include narrow budget, lack of technical expertise, and unstable network connection among others. However, the disadvantages may be peculiar to each library but not be general.

- a. Guarantee security and access control of a copyrighted work.
- b. Control access to data and provide comprehensive reporting and auditing features.
- c. Offer financial and moral rights to copyright holders.
- d. Offer academic incentives to authors in terms of feed-back from statistics for reading/searches of their work in real time.

The use of ECMS also has some disadvantages as outlined below:

1. Implementation and running costs - ECMS implementation has several costs, which include: personnel costs - informatics professionals to implement and run the service, as well as the costs of developing specific application software and the possible acquisition of complimentary modules to the system.
2. Restrictions on access and use: In protecting property rights of right holders, some restrictions create boundaries to access and use of works protected by ECMS.

Electronic Resource Management Software

With the rapid increase of electronic resources in the contemporary academic library environment, technical services departments are forced to look at their workflows and policies to manage this great change. Staff are spending more time than ever managing electronic resources, and the need to manage subscriptions in a different way has many libraries opening new positions titled “Electronic Resource Librarian,” or re-allocating staff to cover the need. Hence, the need for Electronic Resource Management Software (ERMS). Below are recommended ways that would help monitoring the most relevant as well as new technologies in the field of Library and Information Science:

1. **Monitoring key online resources:** E-newsletters, Information Today Inc., tech-guru blogs and podcasts in library and information topic areas, discussion lists for relevant special interest groups in library associations and other leading professional groups.
2. **Monitoring job postings:** Most job advertisement in Library and Information Science profession often state required skills sections to see what technology knowledge they are requesting.
3. **Joining relevant professional IT and LinkedIn groups:** LinkedIn track discussions and asking questions on who is migrating to a new system, who used a new platform and what challenges have people encountered with new library technology tools.
4. **Monitor webinar and conference presentation topics:** Participating and monitoring relevant conference topics through webinar will reveal emerging or increasingly popular/mainstream library technologies and people who have expertise in those technologies that would possibly be willing to share their expertise.
5. **Subscription to relevant mailing lists:** Individual subscription to mailing lists such as ALA Tech Source, where librarians discuss and learn the new technologies as being published.
6. **Scanning the horizon for emerging trends and Train customers and staff:** Make sure to teach staff how to use a variety of consumer technology tools.
7. **Setting up a technology petting zoo:** If library’s budget allows it, buy some technology tools and let staff learn hands-on. This allows library staff to learn how a new technology device works in advance, instead of encountering it for the first time with a customer.

Conclusion

This review clearly indicates that the transformational role of library and librarians with technology advances cannot be undermined as users’ expectations and demands are growing. Library resources and services therefore require emerging library technologies such as Bibliographic Citation Management Software, Instructional System Design Software, Electronic Copyright Management System, Classroom Management Software, Library Automation Software, Electronic Resource Management Software and Integrated Search Software to support academic librarians for efficient and effective performance in academic institutions. However, library professionals will be able to fulfil their duties and responsibilities only if they are subjected to persistent self-restoration and enthusiasm to staying on top of the technology learning curve.

References

1. Anderson, E.K. (2015). Electronic resource management systems and related products. *Library Technology Reports*, **50**(3): 30–42.
2. Butros, A. and Taylor, S. (2010). Managing information: evaluating and selecting citation management software, a look at EndNote, RefWorks, Mendeley and Zotero. In *Netting knowledge: two hemispheres/one world: proceedings of the 36th IAMSLIC Annual Conference* (pp. 17-21). USA: IAMSLIC.
3. Captterra, (2019). Best Classroom Management Software. 2019 reviews of the most popular tools & systems. Retrieved from <https://www.capterra.com/classroom-management-software/> 1/47.
4. Chickering, F.W. and Yang, S.Q. (2014). Evaluation and comparison of discovery tools: An update. *Information technology and libraries*, **33**(2): 5-30.
5. Choi, Y. and Rasmussen, E. (2009). What qualifications and skills are important for digital librarian positions in academic libraries? A job advertisement analysis. *The Journal of Academic Librarianship*, **35**(5): 457–467.
6. Collins, M. (2005). Electronic resource management systems: Understanding the players and how to make the right choice for your library. *Serials Review*, **31**: 125–140. Davis, S. (2005). Electronic resources management from the field.
7. *Serials Review*, **31**: 171– 177.

Role of Act In Teacher Education

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Abstract of the Paper - Educational systems around the world are under increasing pressure to use the new information and communication technologies (ICTs) to teach students the knowledge and skills they need in the 21st century. ICT is a part of our lives for the last few decades affecting our society as well as individual life. ICT is now broadly used in the educational world. Teacher, Student, administrator and every people related to education are popularly used ICT. Teacher use ICT for making teaching learning process easy and interesting. The knowledge of ICT also required for pre-service teacher during their training programme, because this integrated technological knowledge helps a prospective teacher to know the world of technology in a better way by which it can be applied in future for the betterment of the students. Now-a-days ICTs are transforming schools and classrooms a new look by bringing in new curriculum based on real world problems, projects, providing tools for enhancing learning, providing teachers and students more facilities and opportunities for feedback. ICT also helps teachers, students and parents to come together. Continuous and Comprehensive Evaluation (CCE) helps students as well as teachers to use more technology for making teaching learning more attractive for the betterment of our future generation. Teachers must know the use of ICT in their subject areas to help the learners for learning more effectively. So, the knowledge of ICT is very much essential for the both prospective teachers as well as in-service teachers also. This will help teachers to know integrated technology with classroom teaching. This paper discussed about the role of ICT in 21st Century's teacher education in India. This research to be discussed "Role of ICT Teacher Education".

Keywords: ICT, technology, pre-service, in-service, student teacher, teacher training, Facilities, opportunities

Statement of the Problem

"The real problem is not whether machines think but whether men do"

B.F. Skinner

a familiar Educationalist and Philosopher

Today's age of 21st Century and it is also the age of information and technology. Every aspects of life are related to science and technology. Huge flow of information is emerging in all fields throughout the world. Now information and technology is popularly using in educational field for making teaching learning process successful and interesting for students and teacher both. In 1998, UNESCO World Education report refers about student and teachers must have sufficient access to improve digital technology and the internet in their classroom, schools and teacher educational institutions. Teachers must have the knowledge and skills to use new digital tools to help all students achieve high academic standard. The quality of professional development of teacher education depends on the extent of ICT integration in teacher education programme. According to UNESCO (2002) "ICT is a scientific, technological and engineering discipline and management technique used in handling information, its application and association with social, economic and cultural matters". Teachers are at the core of any living society. Technologies play an important role in training programme of teachers. Students accesses knowledge and information through TV, digital media, cable network, internet and social media i.e., Facebook, Twitter, Whatsapp, Linkedinn, Igo, Line, Wechat etc., ICT is very important for Pre-service teacher education programme in the 21st Century. Without proper knowledge of ICT teacher cannot perform in his/her class room and it could not be said to be a complete one.

Importance of ICT

Educational systems around the world are under increasing pressure to use the new information and communication technologies (ICTs) to teach students the knowledge and skills they need in the 21st century. ICT is a part of our lives for the last few decades affecting our society as well as individual life. ICT is now broadly used in the educational world. Teacher, Student, administrator and every people related to education are popularly used ICT. Teacher use ICT for making teaching learning process easy and interesting. The knowledge of ICT also required for pre-service teacher during their training programme, because this integrated technological knowledge helps a prospective teacher to know the world of technology in a better way by which it can be applied in future for the betterment of the

students. Now-a-days ICTs are transforming schools and classrooms a new look by bringing in new curriculum based on real world problems, projects, providing tools for enhancing learning, providing teachers and students more facilities and opportunities for feedback. ICT also helps teachers, students and parents to come together. Continuous and Comprehensive Evaluation (CCE) helps students as well as teachers to use more technology for making teaching learning more attractive for the betterment of our future generation. Teachers must know the use of ICT in their subject areas to help the learners for learning more effectively. So, the knowledge of ICT is very much essential for the both prospective teachers as well as in-service teachers also. This will help teachers to know integrated technology with classroom teaching. This paper discussed about the role of ICT in 21st Century's teacher education in India.

Need and Significance of the Study

The Indian scenario of the classroom is changing. There is a technological gap between the progress of the society and instructional activities of the teacher in the classroom. If we see in our society on the one hand technology has revolutionized our society and on the other hand the teaching learning activities at school level have remained so far away from technology. In our classroom the knowledge is imparted by the teacher in an ancient way, a teacher centric mode which is most of the time boring and not to gain interest to the student. But present 21st Century's education is student centric education. A student learn from multi sources and for this reason use of ICT and Multimedia is very much essential in educational field and simultaneously teacher's knowledge of ICT and Multimedia also required. So the present study has great need and significance because this study shows roles of ICT teacher's education.

Objective of The Study

The objective of the present study is to find out the roles of ICT in 21st Century's Teacher Education in India.

Methodology

This present study is based on secondary sources like books, Articles, Journals, Thesis, University News, Expert opinion and websites etc., the method used is Descriptive Analytic method.

Role Of Ict In Teacher Education In India

1. ICT helps teachers in both pre-service and in-service teachers training.
2. ICT helps teachers to interact with students.
3. It helps them in preparation their teaching, provide feedback.
4. ICT also helps teachers to access with institutions and Universities, NCERT, NAAC NCTE and UGC etc.
5. It also helps in effective use of ICT software and hardware for teaching learning process.
6. It helps in improve Teaching skill, helps in innovative Teaching.
7. It helps in effectiveness of classroom.
8. It also helps in improving Professional Development and Educational management as well as enhances Active Learning of teacher Trainees.
9. It is now replacing the ancient technology. Now-a-day's students are always have competitive mind. So teacher must have the knowledge of the subject. This can be done through ICT.
10. ICT helps teachers in preparation for teaching. In order to introduce ICT in pre-service teacher education different methods and strategies are applied. Different tools are used such as word processing, Database, Spreadsheet etc. Various technology based plans are used to help the teachers for their practice teaching.
11. ICT prepares teacher for the use of their skills in the real classroom situation and also make students for their future occupation and social life.
12. ICT used as an "assisting tool" for example while making assignments, communicating, collecting data & documentation, and conducting research. Typically, ICT is used independently from the subject matter.
13. ICTs as a medium for teaching and learning. It is a tool for teaching and learning itself, the medium through which teachers can teach and learners can learn. It appears in many different forms, such as drill and practice exercises, in simulations and educational networks.
14. ICT as a popular tool for organization and management in Institutions.
15. Teachers must provide technological support to learn using motion picture, animation, simulation training which helped student teachers to give model presentation. If the teacher is highly equipped with technology, the student will also be equipped with technology.
16. It removes the traditional method of teaching and prepare teacher to apply modern method of teaching.
17. ICT is plays an important role in student evaluation.

18. ICT is store house of educational institution because all educational information can safely store through ICT.
19. ICT helps Teacher to communicate properly with their students. So ICT bridge the gap between teacher and students.
20. ICT helps Teacher to pass information to students within a very little time.
21. ICT helps Teacher to design educational environment.
22. ICT helps Teacher to identify creative child in educational institute.
23. ICT helps Teacher to motivate students and growing interest in learning.
24. ICT helps Teacher for organizational preconditions (vision, policy and culture).
25. It is also helps Teacher for their personnel support (knowledge, attitude, skills).
26. ICT helpful for technical preconditions (infrastructure).
27. ICT helpful for designed learning situations which are needed for both vocational education and the training of future teachers (in the teacher training institutes).
28. Teacher training institutes can develop their curriculum using ICT.
29. With the help of ICT Teacher training institutes can develop communication network.
30. Teachers learn most from their own networks (learning from others) with the help of ICT.

Conclusion

Teaching occupies an honorable position in the society. ICT helps the teacher to update the new knowledge, skills to use the new digital tools and resources. By using and acquire the knowledge of ICT, student teacher will become effective teachers. ICT is one of the major factors for producing the rapid changes in our society. It can change the nature of education and roles of students and teacher in teaching learning process. Teachers in India now started using technology in the class room. Laptops, LCD projector, Desktop, EDUCOM, Smart classes, Memory sticks are becoming the common media for teacher education institutions. So we should use information and communication Technology in Teacher Education in 21st Century as because now teachers only can create a bright future for students.

References

1. Chauhan, S. S. (1992). Innovations in Teaching and Learning process. New Delhi: Vikas Publication House Pvt.Ltd.
2. Dash, K. M. (2009) ICT in Teacher Development, Neelkamal Publication Pvt. Ltd. Educational Publishers, NewDelhi.
3. UNESCO (2002). Information and Communication Technologies in Teacher Education, A Planning Guide. Paris: UNESCO.
4. NCTE (2002). ICT initiatives of the NCTE Discussion Document. New Delhi: National Council For Teacher Education.
5. Dahiya, S. S. (2005). ICT-Enabled Teacher Educator, University News, 43 pages 109-114 May 2-8.
6. Bharadwaj, A. P. (2005). "Assuring Quality in Teacher Education", University News, Vol. 43. No. 18.
7. Aggarwal, J. C. (1996), Essential of Educational Technology, Vikas Publishing House, New Delhi.
8. ICT in Education (2006). Information and communication technologies in teacher education: A planningguide.
9. Kirwadkar, A & karanam, P. (2010): E-learning Methodology. Sarup Book Publishers Pvt Ltd. New Delhi.
10. Agarwal, J. P. (2013): Modern Educational Technology. Black Prints, Delhi.
11. Venkataiah, N. (1995) "Educational Technology" Atul Publishers, daryaGanj, New Delhi.
12. Goel, D. R. (2003), ICT in Education, Changes and Challenges in ICT in Education. M. S. University, Baroda.
13. Vanaja, M. & Rajasekhar, S. (2009), Educational Technology and Computer Education, Neelkamal Publications Pvt. Ltd., Hyderabad.

Related Websites and Internet Resources:

1. <https://www.ict.org.in>
2. <https://www.ict.profweb.ca>com>
3. <https://www.pinterest.com>
4. <https://www.edu.co.in>

Cultural Displacement of ‘The New Woman’: A Feminist Study of Manhattan Music by Meena Alexander

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Abstract:

In its concern to bring to the fore the particular situation of women in society, Feminism as a focus for the raising of the consciousness has a long history. It includes acting, speaking, writing, advocating on the behalf of women about their rights and issues, for the eradication of gender based domination in the society. The purpose of the present research is to study the selected novels in relation with gender conflict in the Postcolonial era. The New Woman goes through the anxiety being doubly colonized; being woman and being ‘other’ in foreign land. Since literature and society are inseparable, the selected novel will be examined in the Indian socio-cultural context marked by gender politics, patriarchy, and exploitation.

Key Words: gender politics, patriarchy, exploitation and Postcolonial era

Introduction:

The term ‘The New Woman’ was coined by Sarah Grand in her article ‘*The New aspect of the Woman question*’ published in the North American Review in March 1894. The term was further popularized by Henry James to describe the increasing number of modern and independent woman in Europe and United States. New woman in the new or foreign land faces many complexities but to resolve, finds her way through. She rationally takes her decisions and strives to build her identity. Attitudinal shift can be seen in the woman who longer shies away from taking the initiatives. This new woman is an assimilation of western influences as well as her native culture. The New Woman after leaving her homeland faces the double exploitation being woman in home and society and as an Indian in foreign land. She goes through the existential dilemma and strives to achieve her distinct identity resolving all the conflicts. There is a consistent growth in her behavior and attitude. Thus, the journey of such woman becomes a case study of feminism. The modern women writers evolved the rebelling image of ‘The New Woman’ mainly to be treated as independent human being with individual aspirations. This modern woman represents the anguish, anxiety, dilemma, and search for the self faced by every individual woman in society. To portray this image women writers deploy the medium of Literature as a form of subversion, as a voice to their difference, as a way of reform going against the grain.

Problem of locating the place of oneself can affect the psyche of individual. The thought of Home as fragmented and the pieces need to be collected to get the sense of belonging. These migrated people often feel alienated or nostalgic. The migration leads to displacement of the culture, customs and environment.

Manhattan Music by Meena Alexander:

Meena Alexander was an Indian American poet, scholar, and writer. Born in Allahabad, India, and raised in India and Sudan, Alexander later lived and worked in New York City. She shows her dilemma being woman with desire and ambition, goes through the existential dilemma. Her moving to Sudan and England, her desire to be in India, her new life in America and her visits around the world- this all makes Meena, alienated which develops the sense of dislocation. In Her novel, ‘Manhattan Music’ the story moves around the life of Sandhya Rosenblum, who is an immigrant from India. She is married to an American Jewish man, and tries to make sense of her life in a time of unrest. In this novel, which is set in Manhattan and India, the author explores a lot of diverse elements such as Indian Diaspora, ethnic intolerance, and interracial issues and marriages. Sandhya (who is in her thirties), who finds herself disturbed by memories of a dead sweetheart in her native country i.e. India, and she is eventually drifting apart from her Jewish-American husband and gets into a quest for comfort with her Egyptian lover.

The immigrant characters in Alexander’s novel adapt to American life but feel stretched thin, as if they should be in two places at once. One week they are rushing halfway across the globe to the sickbed of an elderly parent; the next, stumbling around jet-lagged in New Jersey. Accordingly, Manhattan Music is not an easy or serenely melodic book: frequent changes of focus, place, time, voice and style reinforce the themes of disorientation and multiculturalism. Nonetheless, the author produced sophisticated novel reflecting the psychological realities of people coping with hyphenated identities, divided loyalties, fragmented dreams. Like a drifting spirit, Sandhya throughout the narrative tries figuring out who she is, where she belongs to and how she should deal with the situations. The female body in the novel brings to the fore all the concerns related to migration, multiplicity of homes, and memories. The concepts of plural

personalities and juggling of cultures are observed. The various dimensions of gender, culture and migration which transforms a woman and how identity crisis brings forth new parameters is the crux of this text. Sandhya and Draupadi are opposite personalities and cross each other's life to create meaning or rather say to lift up the identity they desired. This novel is pure Diaspora in atmosphere to showcase every uncertainty of immigrant women who felt unwanted or inferior in new country. Sandhya Rosenblum being the protagonist falls for inner turmoil of change of place and that changing makes her more hurt and depressed. Her anxiety to understand her identity in the world makes condition worse. She has feeling of incompleteness with her husband. In search of completeness, she falls for Rashid and she feels that life has essence and bearable to live. She increasingly finds her identity when she stays back to nurse her father at India, where she realises that she is a good daughter. When she is constant in the memories of Rashid, reality heats so hard that scatters everything. In search of new identity, she fails and tries to commit suicide but in her attempt to lose life, she gains new life.

Meanwhile, U.S.-born Draupadi Dinkins (of Indian, African, Japanese, Chinese, Filipino and European descent) struggles with her own demons and losses, rescues Sandhya- literally and physically. Draupadi Dinkins has the multicultural background from Indian root cross from Trinidad to Manhattan. She is alter- ego of Sandhya. She is one the examples of modern hybridity where she jumbles from culture to culture without any burden taken. Optimistic attitude leads her to performing arts, unlike Sandhya, handles the success and failure equally. Her rebel expresses well when she paints her doll completely black. She ties doll's mouth with the sari and seals eyes with wax. These are the symbols of suppression of women. Draupadi is characteristic of New Woman who never lets down herself but as modern phenomenon, she too feels emptiness.

Conclusion:

Meena Alexander's racial, Diaspora and traumatic experiences that revolutionize the entire landscape of her writing space makes the reader realise the sense of alienation. The situation for these women becomes worse being in the foreign land. The present attempt is about to find out the woman characters in the novel by Meena Alexander with examination of identity crisis and cultural displacement in the modern still patriarchal system with the issues of love, marriage and constant urge for social acceptance even in the rage against the social system.

Bibliography

1. Alexander, Meena. *Manhattan Music*. California: Mercury House, 1997. Print.
2. Ann, L.Ardis. *New Women, New Novels: Feminism and Early Modernism*. New Brunswick: Rutgers University Press, 1990.
3. Barry, Peter. *Beginning theory: An Introduction to literary and cultural theory*, 2nd ed. New York: Manchester University Press, Rpt.: Chennai, 2006.
4. Chandrabhanu. *Indian English Writing*. New Delhi: Arise publishers and Distributers, 2009.
5. Ghosh, Ragnunath. *Facets of Feminism: Studies on the Concept of Woman in Indian Tradition*. New Delhi: Northern Book Centre Publishers, 2005. Print.

Welfare Analysis of Cooperative Versus Non-cooperative Research and Development

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Abstract

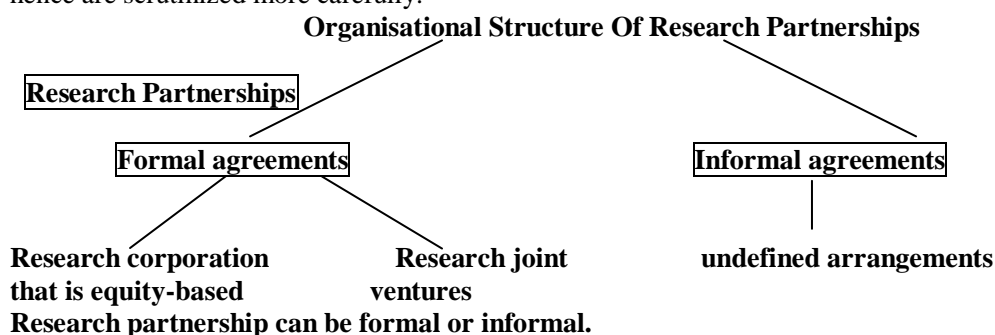
This paper synthesizes welfare analysis of cooperative versus non-cooperative research and development. R&D investment by a firm improves the quality of the product. Consumers are willing to pay a higher price for a better quality of the product. This is reflected in an upward shift of the demand function. Firms can do R&D either independently or cooperatively. Based on available theory and empirical investigations, there are a variety of important reasons why firms participate in R&D. Our paper provides a new argument in favor of promotion of R&D cooperative agreement. Considering homogeneous product, it is found that cooperative research strictly dominates non-cooperative research, both in terms of profits and social welfare without having any uncertainty or spillovers of R&D.

Keywords: R&D, Non-cooperative Research, Cooperative Research, Partnership, Homogeneous Product, R&D output elasticity, Social Welfare.

Introduction

Research And Development (R&D), discovering new knowledge about products, processes, and services, and then applying that knowledge to create new and improved products, processes, and services that fill market needs. Non-cooperative R&D is based on absence of coalition in that it is assumed that each firm acts independently, without collaboration or communication with any of the others. Cooperative R&D means a research partnership which is an innovation-based relation. It follows that there are at least two ways to characterize such a relationship. Research partnerships can be characterized in terms of the members of the relationship or they can be characterizing in terms of the organizational structure of the relationship.

We define a research partnership broadly as an innovation-based relationship that involves, at least partly, a significant effort in research and development (R&D). Partnerships are defined as cooperative arrangements engaging companies, universities and govt. agencies and laboratories in various combinations to pool resources in pursuit of a shared R&D objective. At a broad level, the partners in a research partnership can come from either the public sector or the private sector. When a partner is governmental agency, it represents public sector; when a partner is a private firm, it represents the private sector. Research partnerships can be public, they can be private, or they can be public/ private. From a technology policy perspective public / private partnership have attracted the greatest attention because they represent a relationship that directly embodies government intervention into the innovation process and hence are scrutinized more carefully.



Informal Agreements

We do know that many firms informally partner with one and other in short term research endeavors, but by the fact that they are informal, there is not a systematic way to track these partnerships quantitatively much less to study them in detail. Not only do firms informally partner with one and other but also, they informally partner with universities, and generally in these relationships, the university is serving in the role of a short-term project specific research sub-contractor.

Formal Agreements

We distinguish two types of formal relationships between firms: First equity joint ventures that focus on R&D which we call research corporations; & Second research joint ventures which are mainly

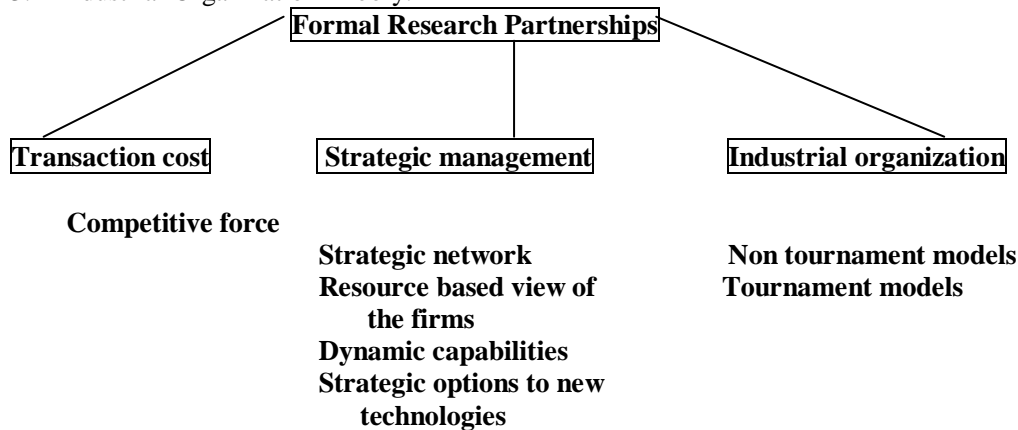
contractual arrangements. Research corporations are created by at least two firms that combine their R&D skills and resources through equity joint ownership of a separate firm, and generally this new firm or child performs only R&D that fits within the broader context of the research agenda of parent firms. Equity Joint Ventures can be analyzed in the context of transitional firm strategies in different market situations. The Equity joint ventures are associated with the spreading of risks, sharing of fixed costs, capturing of economies of scale, gaining access to new markets. Achieving competitive repositioning and sharing of research efforts. These same general arguments hold for research corporations.

Theoretical Perspective of Research Partnerships

There is a vast literature that attempts to explain, from a theoretical perspective, why firms enter into formal research partnerships and what are the results of such relationships to the partners, industry, and society at large.

We distinguish it into three broad categories of literature: -

1. Transaction Costs,
2. Strategic Management,
3. Industrial Organization Theory.



According to available theory and empirical evidence, firms participating research partnerships in order to:

1. Decrease transaction costs in activities governed by incomplete contracts;
2. Broaden the effective scope of activities;
3. Increase efficiency synergy, and power through the creation of networks;
4. Access external complementary resources and capabilities to better exploit existing resources and develop sustained competitive advantage;
5. Promote organization learning, internalize core competencies, and enhance competitiveness;
6. Create new investment options in high opportunity, high risk activities;
7. Internalize knowledge spillovers and enhance the appropriability of research results, while increasing information sharing among partners;
8. Lower R&D costs;
9. Pool risk; and
10. Co-opt competition.

Government has promoted and supported research partnerships in order to:

1. Correct market failure in R&D investment, particularly in the presence of highly non appropriate research;
2. Speed up technological innovation, aiming at increased international competitiveness;
3. Increase technological information exchange among firms, universities, public research institutes.

Literature Review

Research and development activity involves uncertainty, asymmetric information, and research and development spillovers. In general, there is a conflict between private and social incentives of R&D. In this context one policy suggested by Michael L. Katz (1986), is to promote cooperative research under which competing firms pool their R&D resources and share the research results. He analyzed the effects of cooperative research, whereby member firms agree to share the costs and fruits of a research project before they undertake it. In his model, industry wide agreements tend to have socially beneficial effects when the degree of product market competition is low, when there are R&D spillovers in the absence of cooperation, when a high degree of sharing is technologically feasible, and when the agreement concerns basic research rather than development activities.

D'Aspremont and Jacquemin (1988), Ghosh (1990), and Suzumura (1992) have studied cooperative and non-cooperative R&D behavior in the presence of spillover, but without uncertainty. D'Aspremont and Jacquemin analyzed that contrary to the usual assumption made in most Oligopoly Models, relations among firms are seldom of a wholly cooperative or non-cooperative type. In many situations they compete in some fields while they cooperate in others. An important example is the case of cooperative research bringing fierce competitors together. Their study observed two types of agreements. First R&D cooperation can take place at the pre-competitive stage. In this case companies' share the basic information and efforts in the R&D stage but remains rivals in the market-place. And a second type of agreement involves an extended collusion between partners creating common policies at the product level. The usual justifications of this extension are the difficulties of protecting intellectual property. The idea is then to allow partners who have achieved inventions together. It also controls together the process and products which embody the results of their collaboration, in order to recuperate jointly their R&D investments. Marjit (1991) and Combs (1992) divert attention to uncertainty without spillovers. Sugata Marjit used a duopoly model to show how the possibility of licensing ex post R&D affects the decision on R&D organization. He showed that whether licensing ex post R&D affects the incentive for doing cooperative R&D depends on the nature of cooperative R&D. If the firms do cooperative R&D to avoid duplication in R&D process then the possibility of licensing ex post R&D may influence the decision on R&D organization provided one firm behaves like a Stackelberg leader in the product market. Further, Sugata Marjit and Heling Shi (1995) discussed alternative organizational forms of research and development in a symmetric duopoly framework. Firms play a non-cooperative game at the output stage but can collaborate at the R&D stage. In the absence of patent protection, technology licensing that prevents imitative R&D may emerge as an equilibrium outcome. In general, greater probabilities of "success" in R&D rule out non-cooperative arrangement at the R&D stage. Delegative R&D, where firms move sequentially, tends to dominate the cooperative form of R&D.

Choi (1993) and Silipo (1995) discussed the problem when there exist both uncertainty and spillovers. The Kamein et al (1992) papers give a comparative study of the different forms of cooperative research, such as R&D cartelization, RJV Competition and Cartelization. Motta (1992) provides an analysis when products are vertically differentiated; R&D improves the quality of the products considering product differential is endogenous. On the contrary Tarun Kabiraj and Soma Roy (2003) assume that final goods are horizontally differentiated and substitute each other with the degree of substitutability specified exogenously. He focused on the quality improving aspect of R&D in the following sense. An R&D activity improves the quality of the product or its component; this is reflected in the rightward shift of the demand for final goods. He showed that cooperative R&D is more profitable than non-cooperative R&D considering the degree of product differentiation and R&D output elasticity. Cooperative and Non-Cooperative R&D Policy in an Economic Union raised some questions. Should R&D policies within an economic union be centralized or decentralized to each individual country? Do non-cooperative policies - typically implying policy competition between countries - always give rise to too high R&D subsidies in a decentralized policy regime? Should small countries subsidize R&D more than larger countries? To address such questions, Haaland, Jan I. Kind, Hans Jarle (2004) constructed a simple model with horizontally differentiated consumer goods, where each firm may invest in quality-improving R&D. Assuming that the goods are produced in different countries within an economic union, he compared non-cooperative and cooperative R&D policies. They showed that non-cooperative policies imply too small R&D subsidies for horizontally differentiated goods and too high subsidies for goods that are close substitutes. Furthermore, small, net exporting countries of R&D intensive goods have fewer incentives to subsidize R&D than large countries, resulting in an unwarranted vertical product differentiation between goods produced in different countries. Coordination of R&D policies at the union level helps overcome some of these problems. If only a subset of countries cooperates, however, union welfare may be lower than if there is no R&D cooperation at all. Bastian Westbrock. 2004 discussed the horizontal integration in markets for complementary components and vertical product differentiation based on semiconductor industry. Observations of recent mergers and acquisitions (M&A) in the semiconductor and computer industry indicate that activities concentrate on the technology leaders in this market. He examined the influence of players' heterogeneous product technologies on their involvement in mergers and acquisitions (M&A). He provided a rationale for the influence with the help of a case study and a two-stage non cooperative game. The case is about an acquisition wave between suppliers in two semiconductor component markets. Exemplary for the whole industry, acquisition activities concentrated on the technology leader in one of the component markets. Technological heterogeneity is represented within a vertically differentiated product space in the model.

Cooperative versus Non-cooperative Research

To relate my work with the existing literature I note that works cited above assume differential product. I consider a partial equilibrium model of two firms without product differentiation i.e. homogeneous product, which have neither spillover nor uncertainty. Firms can do R&D either independently or cooperatively. In other papers the impact of welfare is, in general ambiguous. I have observed that co-operative research is strictly dominating non-cooperative research in terms of profitability and social welfare.

I have found the following results in this paper on the basis of mathematical models:

1. Co-operative research dominates non-cooperative research in terms of profitability.
2. The R&D investment level of each firm is larger under co-operative research for a relatively high R&D output elasticity.
3. Co-operative research dominates non-co-operative research in terms of social welfare

Conclusions

In this paper, I have considered a partial equilibrium model of two firms with homogeneous product without having any uncertainty or spillovers of R&D. I have constructed a three - stage game. In the beginning before the firms become involved in the R&D and quantity interaction, they decide about their R&D organization. Then conditional on the choice of R&D institution, firms play a two-stage game where in the first stage, they decide their R&D investment and, in the second stage they choose their quantities. I showed in my model, cooperative R&D strictly dominates non-cooperative R&D, both in terms of profits and social welfare. Thus my paper provides new evidence in favor of encouragement of a R&D cooperative agreement. R&D investment by each firm under cooperative research is larger for a relatively high R&D output elasticity which leads to the larger the increase in both quality and quantity of final goods under cooperative R&D compared to non-cooperative R&D.

References

1. John Hagedoorn, Albert N. Link, Nicholas S. Vonortas: Research Partnerships. *Research Policy* 29 (2000) pp.567 - 586.
2. Tarun Kabiraj and Soma Roy: Demand Shift Effect of R&D and the R&D Organization. *Journal of Economics*, Vol.83 (2004), No. 2, pp. 181 - 198.
3. Choi, J. P. (1993): Cooperative R&D with Product Market Competition. *International Journal of Industrial Organization* 11: pp 553 - 571.
4. D' Aspremont, C., and Jacquemin, A. (1988): Cooperative and Non-cooperative R&D in Duopoly with Spillovers. *American Economic Review* 78:pp.1133 -1137.
5. Kamien, M., Muller, E., and Zang, I. (1992): Research Joint Ventures and R&D Cartels. *American Economic Review* 82: pp.1293 – 1306.
6. Katz, M.L. (1986): An Analysis of Cooperative Research and Development. *Rand Journal of Economics* 17: pp. 527 - 543.
7. Marjit, S. (1991): Incentive for Cooperative and Non-cooperative R&D in Duopoly. *Economic Letters* 37: pp. 187 - 191.
8. Motta, M. (1992): Cooperative R&D and Vertical Product Differentiation. *International Journal of Industrial Organization* 10:pp. 643 - 661.
9. Suzumara, k. (1992): Cooperative and Non-cooperative R&D in an Oligopoly with Spillovers. *American Economic Review* 82: pp. 1307 - 1320.
10. Kabiraj, T., Mukherjee, A. (2000): Cooperation in R&D and Production: A
11. Three-Firm Analysis. *Journal of Economics* 71: pp. 281 - 304.

Comparative Study on Selected Physical Fitness Variables of Handball And Volleyball Players of Aurangabad University

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Abstract:

The aim of this investigation was to find out the Comparison on Selected Physical Fitness Variables of Handball and Volleyball Players of Aurangabad University. In the current investigation, forty female players were selected at random by purposive sampling technique, from affiliated colleges of Dr. Babasaheb Ambedkar Marathwada University, Aurangabad (M.S.). 20 female players were selected from Handball and another 20 female players were selected from Volleyball Players during the academic year 2017-2018. The age group was ranging from 18-25 years. The Physical Fitness variables selected for the research work like that Arm Strength and Explosive Leg Strength. The data of Arm Strength was collected by Pull-Ups and Leg Strength was collected by standing broad jump. After that collected data was put into Microsoft Excel to develop Master Chart and then 't' test was used for the statistical treatment. To test the hypothesis the level of significance was set at 0.05 level of confidence, after the statistical analysis of data related to the Selected Physical Fitness Variables of Handball and Volleyball Players, it is found that there is significant difference in Arm Strength and Explosive Leg Strength of Handball and Volleyball Players of Dr. Babasaheb Ambedkar Marathwada University, Aurangabad. Hence the researcher's pre-assumed hypothesis is accepted.

Keywords: Arm Strength, Leg Strength, Handball and Volleyball Players.

Introduction:

Muscular Strength: Maximal contraction power of the muscles is known as muscular strength. The muscular strength is usually measured with respect to different group of muscles acting together. Muscular strength is tested with the help of dynamometers and or densitometers which measure the amount of force exerted in a single effort by a particular group of muscles. Muscle strength mentions to the amount of force a muscle can produce with a single highest effort. Size of muscle cells and the capability of nerves to activate them are connected to muscle strength. Examples Building muscle strength helps with body position, makes performing daily actions easier, increases metabolism and relieves stress. You don't need to go to the gym to increase your muscle strength. Simple exercises can be done at home without equipment. Check out these workouts and resources to improve your muscle strength and boost your calorie burning potential.

Strength: Strength is the ability to overcome resistance or act against resistance. Strength should not be considered a creation of only muscular contraction. It is in fact a product of voluntary muscle contractions caused by the neuro-muscular system.

Arm Strength: Arm strength will be defined as the capacity of a person to exert muscular force of the arm.

Leg Strength: Leg strength will be defined as the capacity of a person to exert muscular force of the Leg.

Objectives: The main purpose of this study was to find out the Comparison on Selected Physical Fitness Variables of Handball and Volleyball Players of Aurangabad University.

Hypothesis: On the basis of literature searched and the researcher's own perception it was hypothesized that there would be significant difference in Selected Physical Fitness Variables of Handball and Volleyball Players of Dr. Babasaheb Ambedkar Marathwada University.

Methodology:

Source of Data: In the present study subjects were selected from affiliated colleges of Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, for the collection of data.

Selection of Subjects: Forty female subjects (20) from Handball and (20) from Volleyball were selected for the collection of data. The age group was ranging from 18-25 years.

Sampling Method: The subjects were being selected by using purposive sampling method.

Collection of Data: For the collection of data, the subjects were given full administration of the tests which was used for the collection of data in the study. The data of arm strength was collected by Pull-Ups

and the data of explosive leg strength was collected by standing broad jump. After that collected data was put into Microsoft Excel to develop Master Chart and then 't' test was used for the statistical treatment.

Criterion measures: Following are the criterion measures which were responsible for collection of data, to testing the hypothesis.

S. No	Variables	Equipment's
01	Arm Strength	Pull-Ups
02	Leg Strength	Standing Broad Jump

Level of Significance:

To test the hypothesis the level of significance was set at 0.05 level of confidence which was considered adequate and reliable for the purpose of this study.

Analysis of the Data: After the collection of data from Handball and Volleyball Players of Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, the raw data were converted into standard one by using a statistical technique 't' test for testing of hypothesis.

Table No. 1
Comparison of Arm Strength between Handball and Volleyball Players

Game	Mean	S.D.	S.E.	Mean Difference	Degree of freedom	O. 't'	Tabulated 't'
Handball	6.20	2.44	0.714	1.75	38	2..450*	2.021
Volleyball	4.45	1.93					

Table No. 1: indicates that the mean of Handball players is 6.20 which is greater than the mean of Volleyball Players which is 4.45. So this mean difference is found as 1.75. The calculated value of 't' is found as 2.45 which is greater than tabulated 't' which is 2.02 at 0.05 level of significance. Hence the hypothesis which was given by the researcher is accepted.

Graph-1
Graphical Representation of Mean difference of Arm Strength between Handball and Volleyball Players

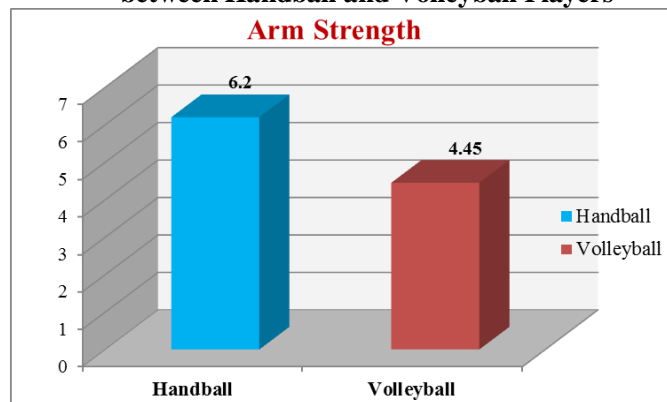
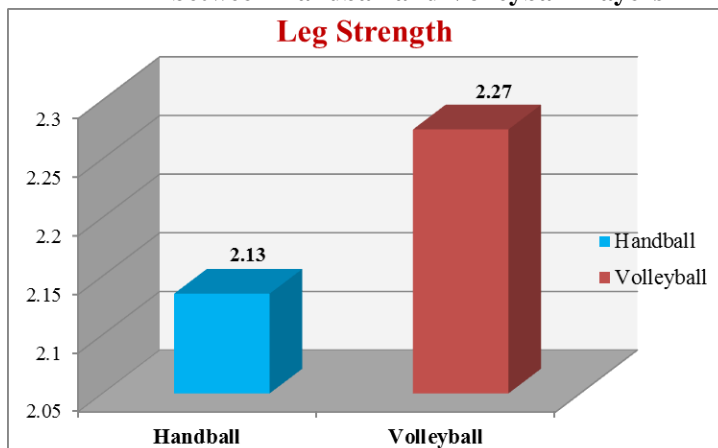


Table No. 2
Comparison of Leg Strength between Handball and Volleyball Players

Game	Mean	S.D.	S.E.	Mean Difference	Degree of freedom	O. 't'	Tabulated 't'
Handball	2.13	0.16	0.052	0.14	38	2.718*	2.021
Volleyball	2.27	0.15					

Table No. 2: indicates that the mean of Handball players is 2.13 which is less than the mean of Volleyball Players which is 2.27. So this mean difference is found as 0.14. The calculated value of 't' is found as 2.718 which is greater than tabulated 't' which is 2.02 at 0.05 level of significance. Hence the hypothesis which was given by the researcher is accepted.

Graph-2
Graphical Representation of Mean difference of Leg Strength
between Handball and Volleyball Players



Conclusion:

In the beginning of this study it was hypothesized that there would be a significant difference in Selected Physical Fitness Variables of Handball and Volleyball Players of Dr. Babasaheb Ambedkar Marathwada University, but after the statistical analysis of data related to the Arm Strength and Explosive Leg Strength of Handball and Volleyball Players, it is found that there is significant difference in Arm Strength and Explosive Leg Strength of Handball and Volleyball Players of Dr. Babasaheb Ambedkar Marathwada University, Aurangabad. Hence the researcher's pre-assumed hypothesis is accepted.

References:

1. Aspenes, S., et.al., "Combined Strength and Endurance Training in Competitive Swimmers", Journal of Sports Science & Medicine, Volume: 8, Issue: 3, Sep 2009.
2. Bucher, C. A., Foundation of Physical Education, (Saint Louis: The C. V. Mosby Company), 1983.
3. Jain, Piyush, et.al., History and Foundation of Physical Education and Educational Psychology, (New Delhi: Vivek Thani, Khel Sahitya Kendra), 2010.
4. Kahn, Mohd S., Educational Research, (New Delhi: Ashish Publishing House), 1990.
5. Kansal, Devinder K., Textbook of Applied Measurement, Evaluation and Sports Selection, (New Delhi: Sports and Spiritual Science Publications), 2008.
6. Singh, Ajmer, et.al., Essentials of Physical Education, (New Delhi: Kalyani Publishers, 3rd Edition), 2008.
7. Singh, Hardayal, Science of Sports Training, (New Delhi: D.V.S. Publication), 1991.

Major Changes in MRTP Act-1969

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The MRTP Act was introduced to provide that the operation of the economic system does not result in the concentration of economic power in hands of few. Through this article, an overview of the MRTP Act has been done including the salient features, the important provisions, the amendments which have been made over the years. It was later repealed and replaced by the Competition Act, 2002 but it still was the first legislation in India regulating the market. Monopolistic and Restrictive Trade Practice under MRTP Act, 1969. The Monopolistic and Restrictive Trade Practices Act, 1969, was enacted. **To ensure that the operation of the economic system does not result in the concentration of economic power in hands of few,** To provide for the control of monopolies.

Loopholes in the MRTP Act & Subsequent Amendments:

Up until 1984, MRTP act was successful in regulating the competition in the Indian market. However, by 1984 amendments were needed to update the act as per the needs of the economy. Following are the two major amendments made to the MRTP Act

- 1. 1984 Amendment** This amendment was brought on the recommendations of the Sachar Committee. The amendment ensured that section 36A was added to the Act to protect the consumer against unfair trade practices so that effective action can be taken against them. Claims against fake and misleading advertisement, wrong representation of goods, false guarantees come under this Act.
- 2. 1991 Amendment** This amendment permitted the MRTP Act to be extended to the public sector & government-owned companies. Post this amendment, private players who function in the market were no longer needed to take special permissions from the government before undergoing any reconstruction of the corporate nature. This amendment to the MRTP Act came to effect in the light of the New Economic Policy which led to the opening of the Indian economy. The License raj which restricted the growth of the Indian economy was thus abolished.

The Competition Act, 2002 is a law that governs commercial competition in India. It replaced the erstwhile Monopolies and Restrictive Trade Practices Act, 1969.

The Competition Act aims to prevent activities that have an adverse effect on competition in India.

History of the Competition Act, 2002

The Monopolies Inquiry Commission was established in April 1964 under Justice KC Das Gupta, a Supreme Court judge. The objective of the commission was to inquire about the effect and extent of monopolistic and restrictive trade practices in important sectors of the Indian economy. The Monopolies and Restrictive Practices Act of 1969 was enacted to limit the concentration of wealth in a few hands and limit monopolistic practices, but it was too archaic in its definitions of what is a 'monopolistic practice'. Thus, it was decided that a new law governing competition in India was required. Keeping the above purpose in mind the Competition Act was introduced in Lok Sabha on 6 August 2001.

Definitions under the Competition Act

The following are the definitions cited under the Competition Act

- 1. Acquisition:** Acquisition is defined as the direct or indirect agreement to acquire shares, voting rights or control of assets over any enterprise.
- 2. Cartel:** A cartel is defined as an association of producers, sellers who limit control distribution, sale or promotions on goods through an arrangement previously made.
- 3. Position:** A dominant position means a position of power held by an enterprise in the related market. It enables the enterprise to function freely and influence the market to its directions.
- 4. Predatory pricing:** Predatory pricing is where the price of goods and services is reduced to well below the cost of production in order to eliminate competition.
- 5. Rule of reason:** The interpretation of activity on the basis of business justification, market impact on competition and on the consumer.

Salient Features

The following are the features of the Competition Act:

- 1. Anti Agreements:** Any individual or enterprises shall not deal in production supply or distribution that may cause a negative impact regarding competition in India. Any existence of such agreements is considered illegal.

2. Abuse of dominant position: In the event, an enterprise or an associated individual, it is found to indulge in practices that are unfair or discriminatory in nature shall be considered an abuse of dominant position. If a party is found to be in abuse of its position, then they will be subjected to an investigation from the concerned authorities.

3. Combinations: As per the act a combination is defined as terms which lead to acquisitions or mergers. But should such combinations cross the limits as put forth by the Act, then the parties involved would be under the scrutiny of the Competition Commission of India.

4. Competition Commission of India: The Competition Commission of India is an independent body with the powers to enter into contracts and should the contracts be broken they can sue the parties involved. The Commission consists of a maximum of six members who are tasked with sustaining and promoting the interests of consumers in order to foster an ideal environment for economic competition.

The other function of the Commission is to advise the Government of India regarding competition in the economy and create public awareness on the same issue.

New Competition Act-2013:

Parliament has passed a new bill which is first major overhaul of company law in more than 50 years. The legislation strengthens accounting Standards & shareholder rights and make it mandatory for companies with market capitalization of more than Rs. 500 crore to spend 2 percent of their net profits on corporate social responsibility (CSR), such as social work or charity.

The salient features of the Act are following:

1. Companies are required to spend at least two percent of their net profit on Corporate Social Responsibility.
2. To help in curbing a major sources of corporate delinquency, introduce the punishment for falsely inducing a person to enter into any agreement with a bank or financial institution to obtain credit facilities.
3. The limit of the maximum number of companies in which a person may be appointed as auditor has been pegged at 20.
4. Appointment of auditors for 5 years shall be subject to ratification at every Annual General Meeting.
5. Independent directors to be excluded for the purpose of computing one-third of retiring directors.
6. Whole-time director has been included in the definition of the term key managerial personnel.
7. Maximum number of directors in a private company increased from 12 to 15 which can be further increased by the special resolution.
8. The term private placement has been defined or bring clarity.
9. Financial year of any company can only end of March 31. The only exception is for companies which are the holding/subsidiary of foreign entity requiring consolidation outside India.

Competition Commission of India Becomes Operational:

At last after a long wait, India's official anti-monopoly body, the Competition Commission of India has finally become operational w.e.f. May 20, 2009.

An independent body responsible for investigating mergers, market shares & conditions, beside regulating firms, CCI would ultimately replace of Monopolies & Restrictive Trade Practices Commission (MRTPC). CCI has been created under the Competition Act, 2002, later amended by Parliament in September 2007. MRTPC will continue to deal with pending cases for two years before being dissolved. However, it would not admit any new cases from May 20, 2009.

It is worth noting that sections three & four of the Competition Act were notified by the government a couple of days earlier to enable CCI to start its enforcement activities from May 20, 2009.

While section three deals with anti-competitive agreements, section four deals with abuse of dominant position. However, sections five and six dealing with mergers & acquisitions have yet to be notified, as the Commission has been asked to study the effects of these sections.

CCI will have seven Members in all but at the present, there are five CCI members, including the Chairman. Dhanendra Kumar, former executive director of World Bank, is the Chairman. The other four are Geeta Gauri, ex-Director (tariffs), Andhra Pradesh Electricity Regulatory Commission; P.N. Parashar, former judicial member of the Income Tax Appellate Tribunal; H.C. Gupta, former coal secretary & R. Prasad, former Chairman of the Central Board of Direct Taxes. Two more members are yet to be selected for CCI.

Conclusion:

The MRTP Act was enacted when the government was completely in the public interest. The law was enacted to ensure that there should be no monopoly, no restricted trade practices, and that they should be abolished. Its objectives are just as useful today. The commission was the first quasi-judicial system and

sought to prevent economic centralization. Attempted to control unfair trade practices. However, restrictions on consolidation, mergers, and expansion have hindered the growth of the private sector by preventing economic legislation in the private sector. Growing industry and entrepreneurs seemed to be socially unfair. The struggle for government favor began. Corruption is on the rise. Industries are no longer competitive. On the other hand, huge undertakings were started in the public sector and over time they failed and became inefficient. The Monopolies and Restrictive Trade Practices Commission has failed to curb business cartels. Due to the fact that the implementation of the decisions of the Commission was to be done through the courts, there was a lot of delay and hence the effectiveness of those orders was reduced. In 1991, India adopted a new economic policy. The entry of Indian and foreign industries into the Indian market was facilitated. Against this background, there was a need to change the MRTP Act. The law was amended in 1991. Emphasis was placed on creating a complementary atmosphere to the competition. Raghavan Samiti was established in 1999. The committee was expected to make recommendations for repealing anti-competitive provisions on trade and creating a conducive environment for competition. The committee suggested repealing the MRTP Act. Accordingly, the Act was repealed and the Competition Act 2002 was enacted. Even after that, it changed a lot. In other words, this law got twisted.

References :

1. <https://www.helpinelaw.com/civil-litigation-and-others/MRTP/mrtp-act-1969-monopolistic-and-restrictive-trade-practice-under-mrtp-act-1969.html>
2. <https://www.legalserviceindia.com/legal/article-7043-monopolistic-and-restrictive-trade-practices-act-1969-an-overview.html>
3. <https://www.economicdiscussion.net/acts/7-main-recommendations-of-mrtp-act/20245>
4. Indian Economy, Pratiyogita Darpan, 2015

The Influence of Social Media on Patricia Lockwood's Novel *no one is talking about this*

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Abstract

The present research article focuses on the details of the influence of social media on the literature. The paper closely studies Patricia Lockwood's debut novel 'no one is talking about this.' The paper largely looks at the influence of social media in our daily life and its reflection appeared in the novel. This novel is related to the social media world. It represents a story of love and grief in the times of social media. It is a scroll, the infinite scroll of love and grief. The never ending scroll can be seen as the pages and posts of social media or internet. The novel is a story of a woman. She is virally famous for the social media posts and therefore, it can be said that some of Patricia Lockwood's characters are, symbolically, like us who desperately seek the likes, comments and follows on the posts. The characters live in the times of social media, where life is largely governed by technological applications. The novel 'no one is talking about this' can additionally be seen as a cultural critique in the times of social media. The influence of social media on the language is quite evident in the novel. The influence of social media not only reflects in the life of her characters but also the language they speak in. However, the novel highly refers to the language and writing styles of social media. Thus, this becomes the novel's one of the fine attributions. The novel 'no one is talking about this,' a collection of social media posts, is our reality. This is indeed our political, cultural, social and most importantly digital reality.

Keywords Influence, Language, Literature, Social Media, Scroll, Portal and Digital. Etc.

Introduction

Considering the current trend of using social media, the main objective is to know the growing influence and trend of social media in the field of literature. The novel '*no one is talking about this*' is about the impact of social media on the lives of the present generation. There are several concepts that illustrate the novel and its plot. One such term is a 'portal.' This concept can be understood from several points of view. Over the period of digitization, the term has been painted differently. The novel is, indeed, a very long journey. It's about life. It reflects the life of present generation. This novel is related to the social media world. It represents a story of love and grief in the times of social media. It is a scroll, the infinite scroll of love and grief. The never ending scroll can be seen as the pages and posts of social media or internet. The Facebook, Twitter and Instagram pages are often scrolled. These pages are never ending. Similarly, Patricia Lockwood's novel is a scroll or a letter of love and grief. As a debut novelist, Patricia Lockwood effectively makes use of social media.

Objectives of the Study

The general objective of the study is to find out the impact of social media in the field of literature and language in today's world. Apart from that the general objectives, the basic and specific objectives of this study is much more emphasis to analyze, explain and discuss in detail with the special reference to the influence of social media on Patricia Lockwood's novel *No One Is Talking About This*. This means to study in details ways with the help of selected topic for examine the impact of the language of social media on literature in today's world and this is core objective of the present research work.

Methodology

The focus of the researcher is laid on a close reading of the primary and secondary data required for current research work. Analytical, interpretative and comparative research methodology is used for the present research work.

In Recent Erathe Language of Social Media is emerging in Literature

The present research article focuses on the influence of social media in the literature. Now a day's there is remarkable growth in the usage of Internet by the universal people they are using Face-book, Whats-up, Instragram twitter such sites which ultimately affects their human emotions and social behavior too. And its real impact is on maintaining our relationships that is personal life as well as social also. The language is a complex human expression. We express daily. In fact, the expression is our need. The expression, in modern societies, is a constitutional right of the people. And it is through the language, mostly, we express our feelings and emotions. The language is our quality. Over the period of time, the humans have developed the language. There are some languages that went extinct, like other species.

However, social media or technology has had and continued to have the impacts of language. It would be remarkable to understand the influence of social media over several languages. Literature is a reflection of life. The literature reflects the changes. The changes that take place in our culture and language can be seen in the contemporary literary works. The social media applications have had a kind of impacts on our language.

In today's world, looking at society from the point of view of social media, you can see that, the rapid advancement of media technology has had a great impact on the way people communicate on a daily basis. Today social media has become an integral part of our life, without which our work is not complete. The English language in social media is that the English language is a recognized and effective means of communication throughout the world. There is no difficulty in understanding the expressions of the related post sending through the use of any social media with the help of English language. The written thing reaches the reader in the same sense as it is written. It is a symbol of easiness, simplicity and richness of English language. In fact man does not use any language to speak to himself; language is a medium for more than one person to speak. That is why the influence of language has been and continues to be very pertinent when studying any literary work of art. Language, literature and culture are considered an integral part of society. And therefore, it keeps very beneficial to study the changing elements of the society along with the changing times from the point of view of literature. So, as a good example of this, the changes that have taken place in the society through the writings of author Patricia Lockwood can be seen in this selected novel *no one is talking about this*.

The Influence of Social Media on Patricia Lockwood's Novel '*no one is talking about this*'

Patricia Lockwood is an American novelist. She was born in 1982. She represents the latest trends in American English literature. Patricia Lockwood is the only debut novelist on the 2021 Booker Prize. Her novel '*no one is talking about this*' is shortlisted for Booker Prize. It was also shortlisted for the Women's Prize for Fiction. There are two poetry collections on her credits. Patricia Lockwood has previously written two poetry collections. These include: '*Balloon Pop Outlaw Black*' and '*Motherland Fatherland Homel and sexual*'. She has also published a memoir entitled as '*Priestdaddy*.' After the publicity of the debut novel, she is working on a short-story collection and a new novel. Furthermore, she is a contributing editor for the London Review of Books. The novel '*no one talings aboutthis*' shows the growing influence of social media applications on human life and literary texts.

The story is of an anonymous woman. She is widely known for social media posts. She is exactly like all of us. In the present era, the life is fully controlled by the technology. The Apps or applications are the things our generation uses daily. With the help of social media, the world has come closer. As a digital human being, who goes viral for her social media post, the principal character of the novel visits several parts of the first and third world. The gap between the first and third world has been drastically reduced. As a global citizen, the woman talks to the people from several countries. The social media applications make it possible for her, and even for all of us. Like us, she makes the comments on things happening around. The life is more or less ruled by these applications. The sudden texts from her mother disturb her virtual or portal world. When actually things go wrong in her life, she finds it difficult to make it home. When her real-life collides with the portal or real life, she understands the futility and absurdity of the portal. And therefore, the futility and the absurdity become the title. The novel tells a story of a girl who has become a social media sensation. The title of this novel is not capitalized. This is an effect of social media. It actually gives the reader a clue about the work. Unlike other titles of the novels short listed for the Man Booker prize, the novel '*no one is talking about this*' isn't capitalized its first letter of the words. Certainly, this could, and should, be seen as the influence of the social media applications. The social media applications make use of language differently. The media moulds the language. It dominates the language. The novel has to do with the effect and impact of social media in our day-to-day life. In the novel, Patricia Lockwood successfully captures the moment. She creatively voices the loneliness and virtual over loaded ness of the social media applications. The perfect example of the domination can be seen as '*P-p-p-perfect p-p-p-politics*.'ⁱ

The changing nature of language, in the times of social media, has always challenged the world. Especially, the academics have been disturbed. The students can often be seen using the social media lingua franca. The students often use the abbreviations in the conversations. Furthermore, they write the exams with the help of these abbreviations. The increasing short forms have always disturbed the older generations. Lockwood feels that the portal is forming a single voice. In the age of social media, people across the globe are sounding too similar. People have started to adopt the language of social media. Patricia Lockwood's anonymous protagonist received fame through the viral post. Let's look at the expression, "*Sup?*"ⁱⁱ It means 'What's up?' The expression '*hoor*'ⁱⁱⁱ means a whore. The character makes

use of such expressions. Rightfully, the other character complains about the speech act. The brother of the principal character says, '*why were we talking like this?*'^{iv}

There are a hundred examples appeared in the novel that can discussed here, but the given the limitation of the present paper, allow me to look at a couple of examples. The expression with emojis, giphy and stickers goes viral. And the novelist does not bother to put them as it is in the book. With the help of these tools, the characters, like us, communicate in the novel. These aspects show that the kind of impact and influence the social media applications have created on us. It can further be seen as the changing nature of the language in the times of social media. This is, indeed, a direct effect of social media. Social media has changed our language and political behavior too. It can be easily seen that our language is getting more and more offensive these days.

Conclusion

To sum up, it is clear that, the novel *no one is talking about this* shows the growing influence of social media applications on human lives and the literary texts. In the present paper, I have closely studied the various aspects of this novel. In the novel, it can be said; Patricia Lockwood has showed the reflection of social media in our lives. The novel deals with the social media and its world. It tells a story of love and grief under the influence of social media emojis and stickers. The world of social media is an infinite scroll. The social media posts, pages and comments are the best examples of it. The book is a story of an unnamed woman. The woman becomes popular for her social media post. The post seemingly has no value, no meaning, but still goes viral in the world of social media. Patricia Lockwood's characters are symbolic. They are types. These types can be seen around us. The characters live in the times of social media, where life is largely governed by technological applications. The novel 'no one is talking about this' can additionally be seen as a cultural critique in the times of social media. The influence of social media on the language is quite evident in the novel. The influence of social media not only reflects in the life of her characters but also the language they speak in. However, the novel highly refers to the language and writing styles of social media. Thus, this becomes the novel's one of the fine attributions. The novel 'no one is talking about this,' a collection of social media posts, is our reality. This is indeed our political, cultural, social and most importantly digital reality.

Work Cited

1. Patricia, Lockwood. '*no one is talking about this.*' London: Bloomsbury Publishing Plc. 2021. PP-51.
 2. Ibid PP-87
 3. Ibid PP-87
 4. Ibid PP-87
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Mobile Technology Changing Trends in Academic Libraries: An Overview

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Abstract:

Technology has fundamentally altered how we live and work as well as we learn together in the world of higher education. Mobile technology has been also influenced by the life style and culture of human being i.e. because of information Communication Technology (ITC) on each and every sector of life. Cell phone is used by million and billions of users Worldwide. In an environment where expenses continues to rise and profits continues to be stained, it's crucial for business that are investing heavily in new Mobile solutions and social media to clearly understand if/how each initiative will contribute to growth and create value for customer. Digital Technology has provided faster access to information and it is also challenging the libraries to rethink and remodels their services by adopting the technological Changes. Today mobile phones are becoming an integral part of everyday life and a recharging the way one connects and interacts with the world. In this changing scenario, Mobile Technology will be great help to libraries towards strong thinking their relationship and providing user of enhanced oriented services to existing users. Libraries may well reach out to their more users who were considered unlikely to connect because of absence of medium.

The purpose of this paper is to describe the changing trends of mobile technology from 0G to 5G. This article is mostly focused on 5G technology features and benefits. Mobile phone Library is a kind of digital library models, which can provide for mobile users to receive the provided library services by using mobile phone through wireless access at all times and places. This paper makes review of it sums up the concept of Mobile library and there development process, and does a further study of the phone application in the digital library and development trend.

Keywords: library, mobile technology, e-library services, SMS Services

Introduction:

This present cell phones have it all. Today phone have everything ranging from the smallest size, largest phone memory, speed dialing, video player, audio player and camera and so on. Recently with the development of Pico nets and Blue tooth technology data sharing has become a child's play. Mobile technology has now come up with "Libraries in hand" trend. Our librarians are in move to determine these devices are affecting information access and ensure that they are communicating with patrons and providing web content in the most appropriate and effective ways. Our librarians must be prepared to take this challenge to increase the market and demand for mobile access to personalized facts and information anytime, anywhere on one's own hand held device. Since mobile handled devices are truly personal devices, search has to rise and physical locations can be harnessed to produce individualized information and services. Users don't want to wait for list of web results, libraries today are covering most of the technologies given by mobile industry like PDAs, Blackberry, iPod, cell phones, UM PCs (Ultra Mobile PC) and mobilizing library contents in a portable form suitable for small screen and delivering short services in the form of contents/information with multiple searching features. Librarians will need to become proficient in using these devices to enable users to access them to any away and any places. Library consist intellectual capital it might be scholarly journals, books, reports, theses etc. For security purpose, the goal of the security system should be to provide a safe and secure facility for library employees, library resources and equipment and library patrons. At the same time due to application of security system, that promise to increase efficiency, productivity and enhance user satisfaction. Earlier with the infrared features you can share data within a line of single that means the two devices has to be aligned properly to transfer data, but in case of blue tooth you can transfer data even when you have the cell phone in your pocket up to a range of 50 meters. The creation and entry of 5G technology into the mobile market place will launch a new revolution in the way international cellular plans are offered. Wiki states that "a new generation of 5G standards may be introduced approximately in the early 2020s. However, still no transnational 5G development projects have officially been launched, and there is still a large extent of debate on what 5G is exactly about. Prior to 2012, some industry representatives have expressed skepticism towards 5G but the trends clearly changed since 2012" Libraries and museums are moving forward in providing access to digital collections via mobile devices. No longer

to visitors have a visit a library or museum to find a computer with internet access? Duke University now offers the most comprehensive digital image collection especially from attend for an iPhone or i-Touch device, I- phone, Android devices and windows phone.

Mobile Technology:

According to “Cambridge English Dictionary” Mobile technology is electronic equipment such as mobile phone or smart computers that you can use in different places and this technology connected with them. Mobile technology is exactly what the name indicated – technology that is portable; it refers to any device that you can carry with you to perform a wide variety of “task”. It is technology that allows those tasks to be performed via cellular phone PDA, vehicle, and laptop. A standard mobile device has gone from being no more than a simple two-way pager to being cellular phone, a GPS navigation system, a web browser, and instant messenger system, a video gaming system and much more. It includes the use of a variety of transmission media such as: radio wave, microwave, infra- red, GPS and Bluetooth to allow for the transfer of data via voice, text, video, 2- dimensional barcodes and more.

Mobile Based Library Services:

Libraries can provide a wide array of mobile services to interested users. Text message alerts in an entry-level mobile web service for to presents its user's news information, library events reminders and other requested information. The following mobile library services are truly remarkable to consider the kinds of activities. Mobile technology through web users are presently engaged have been identified into the following categories.

1. OPAC on mobile phone.
2. E-mail, sending and receiving email messaging.
3. Searching databases of scholarly information.
4. Reading or listening to books and articles.
5. Due-day reminder and renewal – rent services.
6. Library surveys.
7. Preview and reservation service of new titles.
8. New title preview and reservation service.
9. Subject guide, path finder’s etc.
10. Voice and video calling.
11. Multimedia messaging service. (MMS).
12. Feedback/ comments/ suggestions.
13. Online in- House library bulletins.
14. Helpdesk services/Ask-a-librarian.
15. Online textbooks, databases and useful resources links.
16. Frequently asked question (FAQ).
17. Providing links to internet resources.
18. Document delivery services information.
19. Online current awareness information.
20. Online reference tools.
21. Online list of new arrivals.
22. Alert services for new adding resources and ect.

Generation of Mobile technology:

First Generation (1G) mobile has only voice facility. These were replacing by second generation (2G) digital phones which added fax, data, and massaging Services. The third generation (3G) has added multimedia with highest speed. (4G), which is also known as”beyond3G “or “forth-generation” cell phone technology, refers to the entered new evaluation. Devisers are now going for 4G (OFDMA), which will provide internet up to the speed 1GBPS. 4G promises voice, data and high quality multimedia in real time from all the time anywhere. The gigantic array of innovation technology being built into new cell phones in stunning.5G technologies which are on hand held phone offering more power and features than at least 1000 lunar modules.

Different Standards Used in different generation of Mobile Technologies.

Technology/ Feature	1G	2G	3G	4G	5G
Start/ Deployment	1970/1984	1980/ 1999	1990/ 2002	2000/ 2002	Soon probably 2020
Data Bandwidth	2kbps	14.4-64kbps	2Mbps	200Mbps to 1Gbps for low	1Gbps and higher

				mobility	
Standards	AMPS	2G:TDMA,G SM 2.5G:GPRS,E DGE 1×RTT	WCDMA CDMA 2000	Single unified standard	Single unified standard
Technology	Analog Cellular technology	Digital Cellular Technology	Broad bandwidth CDMA,IP, Technology	Unified IP	Unified IP and seamless combination of broadband LAN/WAN/PAN/WLAN and www
Service	Mobile telephony (voice)	2G: Digital voice, Short massaging 2.5G: Higher capacity packetized data	Integrated high quality audio, video, and data	Dynamic Information Access Wearable devices.	Dynamic Information Access, Wearable devices with AI capabilities
Multiplexing	FDMA	TDMA,CDMA A	CDMA	CDMA	CDMA
Switching	Circuit	2G: Circuit 2.5G Circuit for access networks and air interface; Packed for core network and data	Packed except Circuit for air interface	All packet	All packet
Core network	PSTN	PSTN	Packet network	Internet	Internet
Handoff	Horizontal	Horizontal	Horizontal	Horizontal and vertical	Horizontal and vertical

(* Sources: Division of computer Engineering, SOE, CUSAT)

The first Generation: "1G" mobile phones were based on the analogue system. The introduction of analogue systems in late 1970 was (AMPS). Nordic Mobile Telephone (NMT) and total access communication System (TACS). These devices help to carry MHz frequency band.

The second Generation: The 2G Second Generation emerged in 90's in Europe. GSM provides voice limited data service and uses digital modulation for improved audio quality. Supplementary services such as fraud prevention and encryption of users' data become standard features, comparable to those in fixed network. It offers digital voice at a relatively low speed with very little bandwidth left over for data.

The Third Generation: The 3G was launched in 2000. It is the third generation of mobile and it is meant to be the newest multimedia technology for cell phone. The Third 3G technology adds multimedia facilities to 2G phones by allowing video-audio and graphic application. The idea 3G is to have a single network standard instead of the different types adopted in UK, Europe and Asia.

The Fourth Generation: The 4G provides mobile ultra broadband internet access through USB wireless to Smartphone's. This technology is supported cloud computing, mobile web access, IP telephony, high definition mobile TV, video conferencing and 3D television. It gives speed up to 1Gbps for low mobility.

The Fifth Generation: This technology is not officially announced but the sources said that this generation launched probably in 2020. The 5th wireless mobile multimedia internet networks can be completed wireless web (WWW).

5G is based on 4G technologies, which is to be a revolution to 5G. The 5th wireless mobile internet networks are real wireless world which shall be supported by LAS-CDMA, OFDM, MC-CDMA, UWB, Network-LMDS and IPv6.

Audio Books: Audio Books continue to grow in popularity. It is difficult to believe that the service was initially offered in Libraries only as recently as 2005. Audiobook vendors, such as Net library, online library using various licensing models. Until recently, most mobile device did not have the memory needed to house huge audiobook files. All mobile devices have increased storage and memory. The member of phones and other devices that can now accommodate audio files continues to incry. Audio book vendors now offer downloadable audio books compatible with the iPad. Playaway offers Libraries the opportunity to loan out audio books on a port able player so an individual does not have a computer or even own a mobile device.

World Cat Mobile Beta: OCLC World Cat Mobile allows users to search for library materials and Libraries, to call libraries and to map of route to libraries. WorldCatpartnered with mobile technology leaders to increase the number of search channels that allow users to access popular web applications. Users incited to [http:// world catboopsie.com/home/world Cat/to](http://worldcatboopsie.com/home/worldCat/to) test the application.

Mobile- Friendly Websites: In recent days the creation of website is not only web browser enabled but also people are thinking about the mobile view of site. This site helpful to reach the end user.

Library SMS Services:

An events reminders service: This services sends reminders to patrons about import news, exhibition, and instructions and so on.

Due-day reminder and renewal-request service: This service sends reminders to patrons when their borrowed items are coming due.

News title notification service: This service let's patrons get informed of newly acquired titles. This service accompanied the preview and reservation of new titles introduced in section.

Multimedia borrowing notification service: The OIT library stores her multimedia collection (Including CD, VCD, and DVD) in a CD/DVD management system. After entering his/her PIN ID and password, a patron can discover and check-out any discs they want from the CD/DVD management system. At the same time, an SMS alert will be sent to the patron so as to prevent from account compromise.

Request arrival notification service: This service reminds patrons about the availability of reserved items.

Overdue notification service: This service reminds patrons about overdue items. All the above SMS services are opt-in. Patrons only need to login to the library website and full their mobile phone numbers to avail of these services. Currently, patrons can use these services free of charge. This study aims at evaluating patron's acceptance of the first five services.

Quick response (QR) Codes on mobile QR Codes are two dimensional barcode which can be scanned by a cell phone camera prompting the cell phone to load a webpage or display text contained in the code. In order to make use of QR codes it requires.

1. A cell phone with a camera, QR code reading software.
2. Search for QR code readers by cell phone manufacturer and model.
3. Get the free QR app.

Advantages of mobile Access for Academics:

1. Time saving
2. It is personalized service
3. It is user friendly
4. Limitless access
5. Location Awareness
6. Ability to access information
7. Providing students with freedom of location and time
8. Student have access to campus information
9. Increasing space in teaching and learning.
10. Enabling one to one learning based on individual educational histories or test result.

Conclusion:

Mobile Technology has become a very important part of our lives nowadays. Mobile phones were developed primarily for communication purpose. Mobile phones have gained importance in both the developed and developing countries. The mobile phone is a device that enables users to communicate; contact, transactand innovate. Mobile devices and mobile technologies have potential to facilitate the teaching and learning process in a great way. Mobile applications can support learning by making library resources more omnipresent, by bringing new users to the library through increased accessibility to the library resources and by creating a new way to enhance connections between patrons and libraries. This

increased use of mobile phones provides an untapped resource for delivering library resources to patrons. The mobile web is the next step for libraries in providing universal access to resources and information.

References:

1. Aharony, N (2014), *Mobile Libraries: Librarian's and students perspectives. College & Research libraries*, 75(2), pp202-207.
2. Ament, P. (2014). *Mobile phone History- Invention of the Mobile phone. (Online)Ideafinder.com.Avalable at: <http://ideafinder.com/invention/. Mobile phone.htm>.*[Access 15 July 2021]
3. Chang, C.C. (2013), *Library mobile applications in university libraries Hi Tech*, 31(3), 478-492.
4. Saxena, A...& Yadav, R. (2013). *Impact of Mobile Technology On Libraries: Adescriptive Study.InternatioalJournal of Digital Library Services*,1-13.
5. A Walsh (2009). *'Text Massaging (SMS)and library Hi Tech News*, vol.26,No.8pp.9-11
6. Badoi, C.L., Prasad, N.Croituru, V...& Prasad (2011).*5Gbased on cognitive radio. Wireless personal communication*, 57(3), 441-464.
7. Rao.T. (2011).*5g technologies- an anecdote of network service for the future. Journal of Global Research in computer Science*,2(7),164-170)
8. Gohil, A., Modi H., &Patel, SK.*5G Technology of Mobile Communication: A Survey.*
9. Pachauri, A.K. & Singh, O.*5G Technology- Redefining wireless Communication in upcoming years.*
10. Sharma. (2013). *Evolution of Mobile wireless Communication Networks-1Gto5G as well as Future Prospective of Next Generation Communication Network*
11. Wang. (2005. April).*OFDM and application to 4G.InWireless and Optical Communication, 2005.14th annual WoCC 2005, International Conference on (p.69).IEEE*
12. Hart, J & Hannan, M. (2004), *The future of mobile technology and mobile wireless computing. Campus-Wide Information System*, 21(5), 201-204.
13. 13. Kukulska-Hulme, A...&Shield, L (2007), *An Overview of mobile assisted language learning: Can mobile devices support collaborative practice in speaking and listening. Euro CALL, 2007.*
14. Mellow (2005, December). *The media generation: Maximise learning by getting mobile.InAscilite (pp.470-476).*
15. 15. Lehr, W...& McKnight, L.W. (2003), *Wireless internet access: 3GvsWiFi? Telecommunications policy*, 27(5), 351-370.

Biodiversity – Importance, Threats and Conservation: A Review

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Abstract -

“Biological Diversity” means the variability among living organism from all sources including terrestrial and the aquatic ecosystems and the ecological complexes, this includes diversity within species, between species and of ecosystem. Bio-diversity as described in definition includes all forms of biological entities inhabiting the Earth-including prokaryotes and eukaryotes – wild plants and animals, micro-organisms domesticated animals and cultivated plants and even genetic material like seeds and germplasm. Indian society has realized the importance of its biodiversity. Agriculture, livestock, forestry, fisheries these ecosystems are rich in biodiversity. So far attention has been aid for the conservation of biodiversity through National Parks, sanctuaries, biosphere reserves and other protected areas. Threats to biodiversity came from many sources, most human but some natural. This review highlights importance, threats and conservation of Biodiversity for future sustainable development.

Key words – Biodiversity, Importance, Threats, Ecosystem, Conservation.

Introduction-

Biodiversity is the result of the evolutionary plasticity of living organisms, and increased geometrically, proliferating by trial and error, controlled by natural selection, filling almost every one of the habitable ecological niches created in a like wise evolving world environment.

Biodiversity comprises every form of life from the tiniest microbes to the mightiest beasts and the gigantic trees. The biodiversity exists at three different levels. These are :

- i) Species diversity, embraces the variety of living organisms on earth,
- ii) Genetic diversity, which is concerned with the variation in genes within a particular species
- iii) Ecosystem diversity, which is related to the variety of habitats.

Methodology-

Various reference books, Online Articles, Research paper were reviewed.

Importance of Biodiversity –

India occupies a unique position among global biodiversity as a megabiodiversity nation. A large number of species are native to India. About 5000 species of flowering plants belonging to 141 genera and 47 families had birth in India. We are equally rich in insect, amphibian, reptiles, bird and mammalian species of great economic potential. India ranks first amongst the 12 regions of diversity of crop plants and seventh in the contribution of agricultural species. India is rich in marine biodiversity among the coastline of 7500 km and supporting the most productive ecosystems such as mangroves, coral reefs, estuaries, lagoons and backwaters. Near about 45 species of mangrove plants among 342 species of coral reefs that belongs to 76 genera have been reported and about 50% of the global reef building corals are found in our India. Indian biodiversity is a Rich source of several life-saving drugs and chemicals. About 90% of all Indian medicines are obtained from plants. The flora and fauna including bacteria, algae, fungi, gymnosperms, flowering plants, protozoa, corals, sponges, anemones are being picked by companies, institutions for natural products to develop drugs.

Three main approaches have been used to determine the value of biological resources:

- 1) **Consumptive-use valuation** : Involve assessing the value of resources, such as firewood, fodder, and game meat, that are consumed directly, without passing through a market.
- 2) **Productive-use valuation** : Involves assessing the values of products that are commercially harvested and marketed, such as timber, fish, game meat, ivory and medicinal plants.
- 3) **Non-consumptive use valuation** : Involves assessing direct values of ecosystem function's, such as watershed protection, photosynthesis, climate regulation, soil production, along with the intangible values of keeping options open for the future and the pleasure of knowing that certain species exist.

Threats to Biodiversity-

The root causes of biodiversity loss are found in basic economic, demographic and political trends and these could be explained under two things : first, most organisms are highly adapted to their habitat; if the habitat is changed dramatically, most or all of the plants, animals and micro-organisms that once occupied it will depart and die out. Second, human demand for commodities such as hardwood, wildlife, fibre, agriculture products etc., for that he is changing the habitats by cutting them down. Ploughing them up, overgrazing them, building on them, damming them, spilling oil into them, changing their climates, exposing them to increased ultraviolet radiation, and so on. That the extinction rate is rapidly increasing can be seen simply from statistics on the destruction of tropical forests, the locus of at least half of the planet's biodiversity. Human beings have the capacity to alter the parts of the habitats with the invention of powerful machinery, large scale burning of fossil fuel combined with large scale production, use and abuse of chemicals. Human beings have greatly increased capacity to alter the rate and extent of habitat change. Number of species of animals and plants have no longer been able to cope with these changes and have become extinct. It has been estimated that 140 plants and animal species are lost every day in the world. The roots of biodiversity destruction does not lie so much in population increase, but in the relations between the communities within each nation, and between the nations themselves. This is responsible for cornering the huge biological resources for the advantages of a small minority within the poor nations, and for the wasteful consumption patterns of the North. Eighteen million hectares of the Amazonian forest has been cleared in Brazil to meet the greed of the European and American coffee demand. Germany causes the degradation for 200,000 hectares of rain forest a year for timber wood. Adverse terms of trade, protectionist policies of North, dumping of environmentally destructive technologies and materials in the South, and a host of other factors continue to cause severe widespread biodiversity destruction.

Conservation of Biodiversity -

conservation efforts towards plants and animals species have not been given adequate attention particularly of those which are of potential economic and scientific value. Global threat to biological diversity have been very recently recognized amongst scientists and environmentalist groups. Presently, biological diversity includes all life forms on the earth and is a life support system, which is essential for the normal functioning of ecosystems and the biosphere as a whole. It has a great significance for its ecological, social, economical, cultural and ethical values, that is why its conservation is being highlighted. Earlier, only small fractions of endangered species, especially mammals and birds were the subject of conservation, but now, in addition to various flora and fauna, varieties of species, are protected with the specific aim of promoting the conservation of biological diversity, because the survival of species are dependent on the existence of the biological diversity. In fact, for the first time, the Declaration at the Stockholm conference, in 1972 highlighted the universal basic legal principles relating to the conservation of biological diversity and subsequently the UN general assembly adopted and solemnly proclaimed the world charter for Nature for conservation of genetic variability of the earth and all life forms and their habitats on the earth. Furthermore, at the national level the India has adopted species protection laws as well as habitat protection or area designation laws for the conservation of biological diversity. Thus, the Forest Act of 1927, the wildlife (protection) Act of 1972, the forest (conservation) Act of 1980 and several other laws have been adapted by the state governments. These legislation's are passed with a view to preventing such deforestation and biological imbalance in eastern and western Ghat, silent valley, mangrove forests at the estuaries and seashores of India, and the temperate forests at the Himalayas range etc. which are the actual abode of biological diversity, quite rich in genetic diversity having global significance. In addition, the Environmental (Protection) Act of 1986, the Water (Prevention and Control of Pollution) Act of 1974, the Air (Prevention and Control of Pollution) Act of 1981 were adopted with a view to environmental protection.

Additionally, the successful conservation depends on public involvement. Indeed, initiatives that do not involve local communities generally are doomed to fail. Indigenous people in many parts of the world are especially reliant on natural resources for their cultural continuity and economic well-being. Their role in conservation should be given particular attention, and they should be given opportunities to participate as major players in the design of conservation programmes affecting their resources. Local people should be closely associated with the authorities

responsible for both the management of biological resources and the establishment and management of protected areas.

Developmental agencies should support national efforts to establish local, sectorial, and national information management systems by demonstrating methodologies, providing training opportunities for taxonomists and biologists, and subsidizing the publication of status reports. Universities, research institutions, and non governmental organizations need to be strengthened so that they can help governments assess their biological resources. Closer working relationships should be established between museums and other taxonomic oriented institutions and those concerned with conservation of biological diversity. The other important aspect to incorporate is rehabilitative strategy for rare, threatened and endangered plant and animal species. There is further need to develop facilities for long and short term conservation through:

1. Establishment of genetic enhancement centres for producing good quality of seeds.
2. Seed-gene banks.
3. Tissue culture gene banks.
4. Cryo-preservation.
5. Pollen storage.
6. Captive breeding.

Conclusion-

Biodiversity provides many important services to humanity and is also often considered to be valuable for its own sake. History shows that, there have been species extinctions, both because of human activities and other reasons. However, human activities are also active in protecting biodiversity, such as in projects to protect tracts of land for wildlife. But the overall threat to biodiversity loss is so great that conservationists face conservation triage, in which they must decide which species to protect. If biodiversity destruction is continue, ecosystems could be collapse, and there is extinction of one more species that is humans.

References-

1. P.D. Sharma, Environmental Biology and Toxicology, Rastogi Publication, Meerut – New Delhi.
2. Dr. Malhotra Nitasha, The importance of biodiversity. Kamala Nehru College, University of Delhi. Associate Professor
3. Manisha Minni, Biodiversity Significance – Definition, Functions online article.
4. Ankila J. Hiremath And Siddhartha Krishnans article named India knows its invasive species problem but this is why nobody can deal with it proper.
5. C. Sudhakar Reddy and G. Bagyanarayana Forestry & Ecology Division, National Remote Sensing Agency, Balanagar, Hyderabad - 500 037, India. Article Title -Invasion of Exotic Species: Threat to the Biodiversity.
6. The College of Earth and mineral science Website-e-education.psu.edu/geog30/node/394, Open education resources- Petra Tschakert, Assistant Professor of Geography; Karl Zimmerer, Professor of Geography; Brian King, Seth Baum.
7. Proceedings of the National Academy of Sciences, India, Biodiversity and Its Conservation.

A Study of Information Technology in Commerce & Business in India

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Abstract

While we talk about growth of Information technology (IT) is changing its role day by day. Today's best technology to manage and process data is the Information technology. IT Understood commerce sector of many things, whether it is the length of the transaction, transfer of business message from one place to another place with the help of Video Conferencing, E- mail, Skype and various advanced technology app because of development in IT. That's why IT is playing an important role to expand business globally. IT helps the manager to improve the efficiency and effectiveness of their business processes, managerial decision making, and workgroup collaboration, thus helping the managers to strengthen the positions of their company in a rapidly changing environment. This article reports on the importance, Impacts & use of IT in Commerce.

Key words - Information technology, business, management, transaction, Commerce

Introduction

In India information technology established in the year 1967 by Faqir Chand Kohli .He developed first IT based company in India is Tata consultancy. In India the use of technology is increase day by day. Because Information Technology refers to a creation, gathering, processing, storage and delivery of information and the processes and devices that make all that possible. It helps easily to understand business transaction ,data, methods and improving the quantity of information processed and in increasing the speed of presenting the information. IT has revolutionized the phase of business around the world local businesses have become international due to a simple website. I.T. has helped businesses in advertising and marketing.

Objectives Of The Study

- 1) To study the impact of IT in Commerce.
- 2) To study the Uses of IT Business.

Impact Of Information Technology In Commerce

Global Reach

IT permits commercial transactions to cross cultural and national boundaries far more conveniently and cost-effectively than is true in traditional commerce.

Easy information availability

The Internet provides easy availability of information to businessman, investor, trader, all market participants, consumers, and merchants etc.

Convenience

This is seen as one of the biggest advantages if information technology in commerce, in that customers have the access any data, information easy as per their Convenience.

Supply chain efficiencies

The use of IT in commerce can lead to a reduction in the inefficiencies relating to supply chain. Some of the benefits are reduced inventories ,reduced delivery delay, and efficient e-procurement.

Use Of Information Technology In Business

The uses of information technology in business provides flexibility,accuracy, understanding to run business into market and compete with their competitor. According to 2021 data their will be 9 best uses information technology in business which improves business quality into market.

9 Major Uses of Information Technology in Business
1) Digital Advertising & Marketing
2) Product Development
3) Security
4) Operational Efficiency
5) Online Payment Transfers
6) Relationship with Clients
7) Online Storage
8) Globalization
9) Global Communication

Conclusion

So here I am Concluding my article with utilising how information technology make an impact to business scenario. Whenever we talk about technology, a thought comes to our mind, technology makes everyone's work easy and in business it provides easily available data .So IT in the world of business exist to serve varied needs. This article examines the role of IT in business activity discusses how organizations can best use information systems on their day to day activities. This study provides managers and researchers with a framework for effective use of information systems for business purposes and offers an alternative approach to investigate the impact of new technology. The study recommends us that more attention we have to give on information systems technology, as it is key to better management and succeed in the field of Commerce.

References

- 1) <https://www.researchgate.net> .
- 2) <https://www.business2community.com>.
- 3) Reading book of Balbharati Information Technology (IT) (Commerce)HSC Maharashtra State Board
- 4) <http://www.emeralds.com>.
- 5) <https://jonasmuthoni.com>

Changing Scenario of Indian Economy: - “Impact of covid-19”

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Abstract:

The primary dairy cooperatives are positively influencing the development of villages in India especially in Maharashtra. This paper highlights the important position of dairy industry in India's rural economy. The primary dairy cooperatives are positively influencing the development of villages in India especially in Maharashtra. This paper highlights the important position of dairy industry in India's rural economy. The primary dairy cooperatives are positively influencing the development of villages in India especially in Maharashtra. This paper highlights the important position of dairy industry in India's rural economy. The COVID-19 pandemic, also known as the coronavirus pandemic, is an ongoing global pandemic of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The **covid-19** epidemic is the first and foremost human disaster in 2020. The World Health Organization (WHO) declared a Public Health Emergency of International Concern on 30 January 2020 and a pandemic on 11 March 2020. With an increasing number of corona virus cases, the government has locked down transport services, closed all public and private offices, factories and restricted mobilization. This paper aims at studying the COVID-19 impact on the Indian Economy as well as impact on various sectors such as tourism, education, health, lifestyle changes, hospitality, International trade, unemployment, manufacturing sector, issues related to agriculture and rural economy. The economic impact of the COVID-19 pandemic in India has been largely disruptive. India's growth in the fourth quarter of the fiscal year 2020 went down to 3.1% according to the Ministry of Statistics, GOI. Government revenue has been severely affected with tax collection going down, and as a result the government has been trying to find ways of reducing its own costs. The complete lockdown and currently the ongoing partial lockdowns have both demand-side and supply-side effects on the Indian economy. In India lockdown was induced from 20th March 2020 which resulted into huge economic shock. It started across the country and is still ongoing with restrictions in one form or other. The Indian economy contracted by 23.9% in the first quarter of 2020–21 and agriculture was the only sector to register a positive growth of 3.4% (ET, 2020) By 24/04/2020 the unemployment rate had increased nearly 19% within a month, reaching 26% unemployment across India. (Centre for Monitoring Indian Economy). The Indian economy was expected to lose over ₹32,000 crore (US\$4.2 billion) every day during the first 21 days of the lockdown. India's exports in April 2020 fell by -36.65% year-on-year and imports in April 2020 fell by -47.36% as compared to April 2019.

Keywords:- COVID-19 Pandemic, Indian Economy, Unemployment Rate, Lockdown, Revenue.

Introduction:

COVID-19, which was originated from Wuhan, China has eventually spread through the whole world and emerged into a pandemic. India became a hotspot for the virus, next to the USA, infecting 9.6 million (14.6% of global infection) as of December 6th, 2020 which resulted in a decline of 23.9% gross domestic product in quarter 1, FY 2020–21. The COVID-19 pandemic disrupted economic activity in India. The nationwide lockdown which was declared to hold the corona virus spread has affected industries and economical growth. The countrywide lockdown has brought an immediate end to almost all economic activities. The COVID-19 pandemic is the greatest global humanitarian challenge the world has faced since World War II. The virus has spread widely, and the number of cases is rising daily as governments work to slow its spread. India had moved swiftly, implementing a proactive, nationwide, 21-day lockdown, with the goal of flattening the curve and using the time to plan and resource responses adequately. India's effort to combat COVID-19 virus has been praised over the globe. The Covid-19 induced lockdown in India was a huge economic shock. It started across the country on 24 March 2020 and is still ongoing with restrictions in one form or other. It slowed down the economy with complete closure imposed on enterprises across all sectors. In India, the lockdown was enforced in four phases to prevent the spread of COVID-19. Phase 1 of lockdown started from March 24, 2020, until April 14, 2020 (21 days). Phase 2 of lockdown was from April 15, 2020, until May 03, 2020 (19 days). Phase 3 of Lockdown was from May 04, 2020, to May 17, 2020 (14 days). The last phase of lockdown was from May 18, 2020, to May 31, 2020 (14 days). The Government of India announced a variety of measures to tackle the pandemic situation,

which includes providing food security and extra funds for healthcare, to sector related incentives and tax deadline extensions. On 26 March a number of economic relief measures for the poor were announced totaling over ₹170,000 crore (US\$23 billion). The World Bank and Asian Development Bank approved support to India to tackle the corona virus pandemic situation. On 12th May 2020, the Prime Minister of India announced an overall economic stimulus package worth ₹20 lakh crore (US\$270 billion). Two days later the Cabinet cleared a number of proposals in the economic package including a free food grains package. The various schemes were launched by the Government which included a special economic and comprehensive package under AtmaNirbhar Bharat including measures taken by RBI amounting to about Rs. 27.1 lakh crore to combat the impact of the COVID-19 pandemic and to revive economic growth. The package included, cash transfer relief measures for households, employment provision measures under Pradhan Mantri Garib Kalyan Rojgar Abhiyaan and increased allocation under MGNREGS, credit guarantee and equity infusion-based relief measures for MSMEs and NBFCs as regulatory and compliance measures. On 25th March the Modi government announced the world's largest food security scheme for 800 million people across the country. Around 53% of industries and businesses are directly got affected by the COVID-19 shutdown as per the survey report of FICCI (Federation of Indian Chambers of Commerce & Industry). By December 2021, India was back to pre-COVID-19 growth.

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Objectives:

- 1) To Highlight the Changing Scenario of Indian economy.
- 2) To examine the COVID-19 impact on the Indian Economy as well as impact on various sectors such as tourism, education, health, lifestyle changes, hospitality, International trade, unemployment, manufacturing sector, issues related to agriculture and rural economy.

Results & Discussions:

To Highlight the Changing Scenario of Indian economy.

The economic impact of the COVID-19 pandemic in India has been largely disruptive. India's growth in the fourth quarter of the fiscal year 2020 went down to 3.1% according to the Ministry of Statistics. The Chief Economic Adviser to the Government of India said that this drop is mainly due to the corona virus pandemic effect on the Indian economy. The economy of India is a middle income developing mixed economy. It is the world's sixth-largest economy by nominal GDP and the third-largest by purchasing power parity. The long-term growth perspective of the Indian economy remains positive due to its young population and corresponding low dependency ratio, healthy savings, and investment rates, increasing globalization in India and integration into the global economy. Nearly 60% of India's GDP is driven by domestic private consumption & is the world's market. India has classified its economy and GDP in three sectors: agriculture, industry, and services. Agriculture and agriculture-related services are the major sources of livelihood of the peoples. Agriculture sector accounts for 23% of GDP, and employs about 54% of the country's total workforce. Agriculture sector includes crops, horticulture, milk and animal husbandry, aquaculture, fishing, sericulture, aviculture, forestry, and allied activities. Agriculture and allied activities contributes country's largest employment source and a significant piece of its overall socio-economic development. Industry includes various manufacturing sub-sectors. Industry accounts for 26% of GDP and employs about 22% of the total workforce. Services sector includes its construction, retail, software, IT, communications, hospitality, infrastructure operations, education, healthcare, banking and insurance, and many other economic activities. The services sector has the largest share of India's GDP, accounting for 57% .It is the seventh-largest services sector by nominal GDP, and third largest when purchasing power is taken into account. The services sector provides employment to 27% of the country's workforce. The Agriculture sector's contribution to the Indian economy is much higher than the world's average (6.4%). The industry and services sector's contribution is lower than the world's average 30% for the Industry sector and 63% for the Services sector.

B) To examine the COVID-19 impact on the Indian Economy as well as impact on various sectors such as tourism, education, health, lifestyle changes, hospitality, International trade, unemployment, manufacturing sector, issues related to agriculture and rural economy.

The novel Corona virus (COVID-19) pandemic has rapidly spread across the world and has adversely affected the lives and livelihoods of millions of people across the world. The impact of lockdown imposed in the entire country owing to COVID-19 on the overall production levels in the

agricultural and allied sector has been significant with overall production levels in the agriculture and allied sectors.

India had also been witnessing a pre-pandemic slowdown and its impact on various sectors.

Impact on International trade: -

The trade impact of the pandemic on India is estimated to be around 348 million dollars, as the country is among the top 15 economies which is the most affected as result slowdown of manufacturing in China that disrupts world trade, according to a UN report. India's exports in April 2020 fell by -36.65% year-on-year, while imports in April 2020 fell by -47.36% as compared to April 2019. The merchandise trade deficit for April 2020 was estimated at \$6.76 billion as against the deficit of \$15.33 billion in April 2019.

Impact on agriculture and rural economy: -

Agricultural growth reduces poverty directly, by raising farm incomes, and indirectly, through generating employment and reducing food prices. In other words, a thriving agricultural sector is a boon for most sectors of the Indian economy.

The potential negative impacts of Corona have been affected on agricultural production. Sudden imposition of the lockdown resulted in a massive and unexpected interruption to agricultural activities such as harvesting, sale of agricultural produce, and purchase of inputs. The post-harvest operations, such as threshing, winnowing, loading and storage were also very slow because of lack of workers in most of the places. The disruptions caused by the lockdown have been resulted in considerable and additional economic burden on farmers because of higher costs, increased debt burden, inability to sell the produce at reasonable prices and crop losses. A large number of farmers, in particular, producers of pulses, oilseeds, vegetables and fruits, have been forced to sell their produce at low prices to local traders because of disturbances and interruption in functioning of the markets. Due to the sudden announcement of lockdown resulted into disruption of agricultural supply chains. Due to travel restrictions Agriculture Produce Market Committees, Regulated Market Yards, Mandis, wholesale markets and weekly markets were shutdown in many parts of the country which resulted into massive disruption in the entire agricultural supply chain & marketing system causing impact on Farmers, local traders & Business Entities involved.

Impact on Manufacturing and Production industry: -

Industry accounts for 26% of GDP and employs 22% of the total workforce. The manufacturing & production sector of India is tremendously suffering due to the lockdown situation. Most of the Indian organizations work in sectors including industrial manufacturing, manufacturing services, IT, BPO, and logistics, and are much more concentrated in the eastern Parts of China. Some sectors of India have been negatively affected by the outbreak of corona virus in China, including shipping, electronics, pharmaceuticals, automobiles, textiles, etc The lockdown imposed by several state governments and union territories have major impact on corporate sector in India resulting into temporarily shutdown of factories, units, industries, offices, warehouses and retail stores. Sectors like automobiles manufacturing and pharmaceuticals were impacted severely due to shortage of imported components. A list of big companies which includes Cement Manufacturers (India Cements, Ultra Tech Cement, Ambuja Cement, Birla Cement, etc) , heavy engineering (BHEL, L&T Construction Equipment, Volvo Construction Equipment India, Mahindra & Mahindra Ltd, Caterpillar, etc) Automakers (Maruti Suzuki, Hyundai, Hero Moto Corp, Honda India, TATA Motors, Mahindra & Mahindra Ltd, etc), FMCG firms such as Hindustan Unilever, ITC and Dabur India Have announced temporary shutdowns and also shut manufacturing facilities. Which resulted into increase of unemployment rate, labour force participation, and affected the overall income of individuals and businesses.

Impact on employment & Income Levels:-

Due to the sudden announcement of nationwide lockdown Almost all the commercial establishments, industrial units, transport systems, school, colleges, government offices except establishments of emergency services, have been shutdown. During lockdown, labour intensive industries reported the highest rate of unemployment & complete lockdown followed by social distancing resulted in job losses. According to Mahesh Vyas, CEO, Centre for Monitoring Indian Economy (CMIE), unemployment rate will be around 12% at the end of May 2021 and income of 97% households have been declined. According to the report of Business Today in the month of April and May 2021, the poorest 20 per cent of households lost their entire income and the richer households suffered losses of less than a quarter of their pre-pandemic incomes. The Azim Premji University revealed in its study that the 1st wave of COVID 19 pandemic has pushed 23 crore people below the poverty line (below the national minimum wage threshold of Rs. 375.00 per day as recommended by the Anoop Satpathy committee). The report said that there has been a rise of 15% in poverty in rural India and a rise of 20% in urban India

during the last one pandemic year. Unemployment rose from 6.7% on 15 March to 26% on 19 April and then back down to pre-lockdown levels by mid-June.

Impact on Travel & Tourism Sector: -

The tourism industry in India plays a significant role in Indian economy. Travel & Tourism creates jobs, drives exports, and generates prosperity across the Nation. According to The World Travel and Tourism Council (WTTC), the tourism industry in India generated 6.8% of India's GDP in 2019 and supported 39.80 Million jobs. India serves as 8th largest tourism economy in the world. India's tourism industry is one of the significant areas of the Indian economy, which provides a wide range of employment and contributes approximately 10% of the GDP. India attracts a large number of foreign tourists every year. The percentage of foreign tourist arrivals (FTAs) is increasing since the last decade (Annual Report, 2019–20). The attraction for foreign tourists is heritage buildings, historical monuments & sites, temples, religious buildings, cultural heritage, coastal areas and beaches, yoga, Ayurveda and natural health resorts, spiritual and religious tourism destinations. The Indian tourism sector is adversely affected by Covid-19 due to suspension of Tourism and Aviation activities. In March 2020, government of India imposed a nationwide lockdown and suspended all. International flights and tourist visas. Due to travel restrictions, social distancing, lockdown there is a 66.4% decline in overseas tourists arrivals in India in March 2020 compared to last year (TAN, 2020). Hotel, aviation and tourism sector together incurred losses of about INR 8,500 crore due to travel restriction imposed on foreign tourists by India According to the Indian Association of Tour Operators (IATO)

Conclusion:

The coronavirus pandemic has great impact on the Indian economy, affecting almost all macro variables of the economy negatively. The impact of the COVID-19 pandemic in India has been largely disruptive which resulted into India's growth in the fourth quarter of the fiscal year 2020 went down to 3.1%. The government, through its various interventions specifically through the Prime Minister Garib Kalyan Yojana and MNRGA has provided timely relief to migrants in these difficult times. The Indian economy is expected to lose over ₹32,000 crore (US\$4.2 billion) every day during the first 21-days of complete lockdown. On 12 May the Prime Minister Hon. Narendra Modi announced economic package of ₹20 lakh crore (US\$270 billion), 10% of India's GDP With a prime focus on labourers, farmers, taxpayers, MSME, cottage industries, etc. The economic package also includes the sectors such as agriculture, taxation, infrastructure, human resource and the financial system which would attract investment and to give a boost to the economy. On 25 March the Modi government announced the world's largest food security scheme for 800 million people across the country. According to the reports of 'Centre for Monitoring Indian Economy' the unemployment rate had increased nearly 19% within a month, reaching 26% unemployment across India by April 2020.

Due to the sudden announcement of lockdown, travel restrictions, social distancing resulted into disruption of agricultural supply chains, decline in agricultural activities, lack of availability of labour and machines, and restrictions on free movement of men and machineries impacted on the overall production levels in the agricultural and allied sector. The outbreak of the pandemic has hit the various sectors such as tourism, education, health, lifestyle changes, hospitality, International trade, unemployment, manufacturing sector, issues related to agriculture and rural economy. The marketing of the harvested produce had been impacted adversely due to limitations of road transportation in many regions of India. India's exports in April 2020 fell by -36.65% year-on-year, while imports in April 2020 fell by -47.36% as compared to April 2019. The merchandise trade deficit for April 2020 was estimated at \$6.76 billion as against the deficit of \$15.33 billion in April 2019. Due to travel restrictions, social distancing, lockdown there is a 66.4% decline in overseas tourists arrivals in India in March 2020 compared to last year (TAN, 2020). Hotel, aviation and tourism sector together incurred losses of about INR 8,500 crore due to travel restriction imposed on foreign tourists by India According to the Indian Association of Tour Operators (IATO).

References:

1. International Monetary Fund (IMF). (April 2020). World economic outlook: The great lockdown. International Monetary Fund. <https://www.imf.org/en/Publications/WEO/Issues/2020/04/14/weo-april-2020>.
2. "Economic Impact of the COVID-19 Pandemic in India," July 22, 2020. https://en.m.wikipedia.org/wiki/Economic_impact_of_the_COVID-19_pandemic_in_India.
3. "Topic: Coronavirus COVID-19 - Economic Impact on India." Statista. Accessed July 23, 2020. <https://www.statista.com/topics/6304/covid-19-economic-impact-on-india/>

4. Patel, P., Sharma, J., Kharoliwal, S., & Khemariya, P. (2020). The Effects of Novel Corona Virus (Covid-19) in the Tourism Industry in India. *International Journal of Engineering Research & Technology (IJERT)*; 9(05)
5. <https://timesofindia.indiatimes.com/readersblog/small-thoughts/impact-of-covid-19-on-employment-in-india-33336/>
6. Vyas, Mahesh (21 April 2020). "Unemployment rate touches 26%". *Centre for Monitoring Indian Economy*. Retrieved 24 April 2020.
7. Vyas, Mahesh (2020), "Unemployment rate over 23%", Centre for Monitoring Indian Economy Pvt Ltd, <https://bit.ly/2XasvzW>.
8. Dogra, T. (2020). Impact of Covid-19 on The Tourism Industry in India. *International Journal of Advanced Research*, DOI: 10.21474/IJAR01/12006; DOI URL: <http://DX.doi.org/10.21474/IJAR01/12006>; November.
9. Sharma, Neetu Chandra (8 June 2020). "Amid rise in Covid-19 cases, India to open its economy further". *Livemint*. Retrieved 13 June 2020.
10. Azim Premji University (2020), COVID-19 Livelihoods Survey: Early Findings from Phone Surveys, https://cse.azimpremjiuniversity.edu.in/wp-content/uploads/2020/05/APU_COVID19_Survey_Webinar.pdf.

Rural Women Empowerment Through Self-Help Groups for Sustainable Development- An Overview Study in Kolar District

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Abstract:

The essential objective of this study provides a strategy for rural women empowerment for sustainable development. Empowerment can enable women to participate, as equal citizens in the planning, decision making, economic, political and socio-cultural sustainable development of the rural communities. Besides, involvement in SHGs has enabled women to have a voice in the community affairs. The study is situated at Kolar. Kolar is the district headquarters. Located in southern Karnataka, it is the state's easternmost district. The district is surrounded by the Bangalore Rural district on the west, Chikkaballapur district on the north, the Chittoor district of Andhra Pradesh on the east and the Krishnagiri district of Tamil Nadu on the south. The study uses the personal narrative method to give a voice to women's perspective describing the phenomenon of transition of women prior to joining SHGs to being empowered. The findings outlined in this paper suggest that, designed and implemented in ways that meet rural women's diverse needs, community participation processes that can be essential to facilitating economic, social, technological, political and psychological empowerment in terms of sustainable rural development. The findings of this study can assist rural policy makers and developers in the implementation of community development programs and women reservation for the empowerment of women's.

Key words: Sustainable Development, Rural Women, Self Help Groups, Empowerment

Introduction:

Empowerment means the process of becoming stronger and more confident, especially in controlling one's life and claiming one's rights. In the field of development economics women's empowerment is defined as the process through which women acquire the ability to make strategic life choices in a context where this ability was previously denied to them (Kabeer, 1999). September, 28, 2017.

Sustainable Development:

Sustainable development can be defined as the practice of maintaining productivity by replacing used resources with resources of equal or greater value without degrading or endangering natural biotic systems. Sustainable development binds together concern for the carrying capacity of natural systems with the social, political and economic challenges faced by humanity. There is an emphasis on the present generations' responsibility to regenerate, maintain and improve planetary resources for use by future generations.

Self Help Groups (SHGs):

Self Help Groups (SHGs) are small groups of poor people. The members of an SHG face similar problems. They help each other, to solve their problems. SHGs promote small savings among their members. The savings are kept with the bank. This is the common fund in the name of the SHG. The SHG gives small loans to its members from its common fund. SHG is an informal group and registration under any Societies Act, State cooperative Act or a partnership firm is not mandatory vide Circular RPCD.No. Plan BC.13/PL -09.22/90- 91 dated July 24th, 1991.

Objectives:

1. To analyze the women empowerment through Self Help Groups
2. To study the Self Help Groups performance in Kolar district
3. To analyze the Sustainable Development through social progress and equality, environmental protection, conservation of natural resources and stable economic growth
4. To know the Self Help Groups member's socio-economic conditions
5. To inculcate the savings and banking habits among members.

Need of the study: The Self Help Groups playing very vital role in women empowerment in various respects. As the researcher is from Kolar district, also interested to study the role of Self Help Groups in women empowerment regarding sustainable rural development

Methodology: Present study is done in Kolar district. Self Help Groups members from rural women are chosen by applying random sampling technique. The data are collected from 400 Self Help Groups members from rural women by using questionnaire method.

Analysis and data analysis:

Profile of women members of SHGs:

Table-1. Age and percentage wise distribution of respondents:

Sl. No	Age groups based on years	Number of respondents	percentage
1	18-30	30	7.5
2	31-40	94	23.5
3	41-50	140	35.0
4	51-60	136	34.0
		400	100

In the above table No.1, the data shows the distribution of respondents in different age groups. 7.5% of the respondents were in age group of 18-30 years. 23.5% of the respondents were in age group of 31-40 years. 35.0% of the respondents were in age group of 41-50 years, and 34.0% of the respondents were in age group of 51-60 years.

Table-2. Educational Status of respondents in percentage:

Sl. No	Educational status	Number of respondents	percentage
1	Illiteracy	82	20.5
2	Primary	118	29.5
3	Secondary	94	23.5
4	Higher Secondary	70	17.5
5	Graduation	36	9.0
	Total	400	100

In the above table No.2, the data shows the educational Status of respondents. 20.5% of respondents were illiterates and 79.5% were educated. Among educated 29.5% of respondents having primary education, 23.5% of respondents having secondary education, 17.5% of respondents having higher secondary and 9.0% of respondents having Graduation.

Table-3. Reasons for joining of women members to SHGs:

Reasons for joining to SHGs	No. of Women Members	percentage
To Cultivate savings Habits	100	25.0
To improve Family Income	204	51.0
To avail loans for economic activities	35	8.75
To improve socio-economic conditions of family	61	15.25
Total	400	100

In the above table No.3, the data shows the reasons for joining of women respondents to SHGs. The aim of 25.0% of respondents to cultivate savings habits, the aim of 51.0% of respondents to improve their Family Income, the aim of 8.75% of respondents to avail loans for their economic activities, and the aim of 15.25% of respondents to improve socio-economic conditions of their family.

Table-4. Status of economic empowerment of women through SHGs:

Monthly Income	Before joining to SHGs		After joining to SHGs	
	Number of Women Members	percentage	Number of Women Members	percentage
Less than Rs.5000	175	43.75	125	31.25
Rs.5001-Rs.7000	86	21.5	110	27.5
Rs.7001-Rs.10000	67	16.75	73	18.25
Above Rs.10000	72	18.0	92	23.0
Total	400	100	400	100

In the above table No.3, the data explains the Status of economic empowerment of respondents before joining and after joining to SHGs. 43.75% of women respondents having monthly income of less than Rs.5000, 21.5% of women respondents having monthly income between Rs.5001-Rs.7000, 16.75% of women respondents having monthly income between Rs.7001-Rs.10000 and 18.0% of women respondents having monthly income above Rs.10000.

Conclusions:

Self Help Groups plays very vital role in changing status of women in rural areas in each and every respect of their life. The Self Help Groups which create a silent revolution in rural areas like 'changing agents'. This study reveals that most of the rural women respondents of SHGs are illiterate, below income groups and middle aged. By the development of Self Help Groups, now women are involving business activities, social activities, educational activities and so on. The Self-Help Group (SHG) model is the dominant form of microfinance and in recent years they have grown explosively in Kolar district. This development is playing dominant role in women empowerment especially in rural and also for sustainable development.

Reference:

1. Sharma M L and T. M. Dak (1987), Ageing in India- Challenge for the society, Ajanta Publications, New Delhi.
2. Singh Parduman (1997), Social security system in developing countries: Asia, Africa and South America, Friedrich Ebert Stiftung, New Delhi.
3. Neeta Tapan "Need for empowerment", Rawat Publications 2000.
4. Razia Parvin "Empowerment of women", Dominant Publishers and distributors 2005.
5. Leelavathy. K, (2014), Empowerment of women through Self- Help Groups in Tiruvannamalai International Journal of Scientific research and management (IJSRM), 2(10): pp.1488-1493
6. Sahu, Tripathy, Self Help Groups and Women Empowerment, Anmol Publications Pvt. Ltd, New Delhi 2005

Impact of COVID-19 on Indian Manufacturing Industry

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Abstract:

The present paper show that the impact of COVID-19 the largest decline of Net Value Added is basic metals and electric equipment percentages of 21, textiles percentage of 18; refined petroleum products and motor vehicles percentage of 15 and rubber and plastic products and other non-metallic products percentage of 11 as well as the performance is decline in manufacturing to factory shutdown and lockdown.

Keywords: Covid-19, Indian Manufacturing Industry, Net Value Added, Lockdown, ASI.

Introduction:

Indian manufacturing sector is an important part of the economy as it accounts for nearly Sixteen percent of the global GDP in 2018. It is indicates that the government across the countries starting focuses on encouraging the manufacturing sector. The initiative in emerging economies to promote the manufacturing sector includes Make in India 2025. The initiative seeks to remove China products the manufacturing value chain by utilizing innovative manufacturing technologies or smart manufacturing. In this connection, Make in India is an initiative was launched in 2015 to encourage the production of goods in India. The COVID-19 outbreak could cause global Foreign Direct Investment to shrink by Five percent to Fifteen percent, due to the decline in manufacturing sector coupled with factory shutdown. In this connection the negative impacts of COVID-19 on Foreign Direct Investment investments are expected to be high in the power, automotive, and airlines industries.

Objective of the Study:

The present paper focuses in Impact of COVID-19 on Indian Manufacturing Industry.

Methodology:

The data for the present study has been collected from existing secondary literature, such as books, journals, published and unpublished annual reports, Govt. Manuals/Orders, websites etc.

Impact of COVID-19 on Indian Manufacturing Industry:

The study indicates that the economic loss is calculated by adding the wages cost and fixed cost—interest and rent expenses—to the Net Value Added of respective industries using Annual Survey of Industries data for registered manufacturing sector of impact of COVID-19 on Indian manufacturing industry.

Growth of Percentage of Net Value Added in across Industries:

The Annual Survey Industries (ASI) Data indicates that the manufacturing industries will be the growth rate of around 4.7 per cent in terms of Net Value Added in the period of 2014-2017 without COVID-19. It was forecast that the basic metal industries will be increase 19 percent, non metallic mineral products in 13 percent, machinery and equipment in 9 percent and textiles in 5 percent.

Decline Percentage of Manufacturing Sector in Net Value Added:

The Annual Survey Industries (ASI) Data indicates that the conditions of economic cost to the Net Value Added of total industries in the base and worst case scenario are 5.5 percent and 19.8 percent. It is observed that the Net Value Added of total industries is 10.2 per cent under scenario as compared to the loss of Net Value added is 13.5 per cent to 27.8 per cent for base and worst case scenario.

Loss Percentage of Net Value Added for Top 10 Industries:

The Annual Survey Industries (ASI) Data indicates that the higher Ten industries which share the total industrial Net Value Added accept the loss in Net Value Added in 1 to 19.6 per cent of the total Net Value Added of base year higher 10 industries share 65 per cent of total industrial sector Net Value Added, absorb 55 per cent of all industrial workers significant fixed cost, the total interest and rent cost around the percentage of 70 in all industries as compared to the loss across higher 10 industries under scenario as per ASI data is refined petroleum products percentage of 2.4, basic metals and chemical products percentage of 2.1, motor vehicles percentage of 1.5, machinery and equipment percentage of 1.3, and textile percentage of 1.2. Therefore, these industries require attention immediately.

Decline Percentage of Base in Net Value Added:

The Annual Survey Industries (ASI) Data indicates that the impact of COVID-19 the largest decline of Net Value Added is basic metals and electric equipment percentages of 21, textiles percentage of 18; refined

petroleum products and motor vehicles percentage of 15 and rubber and plastic products and other non-metallic products percentage of 11 as well as the performance is decline in manufacturing to factory shutdown and lockdown.

Conclusion:

It is observed that the impact of COVID-19 the largest decline of Net Value Added is basic metals and electric equipment percentages of 21, textiles percentage of 18; refined petroleum products and motor vehicles percentage of 15 and rubber and plastic products and other non-metallic products percentage of 11 as well as the performance is decline in manufacturing to factory shutdown and lockdown.

References:

1. Mc Kibbin, W., & Fernando, R. (2020, March 2). The global macroeconomic impacts of COVID-19: Seven scenarios. Brookings. <https://www.brookings.edu/research/the-global-macroeconomic-impacts-of-covid-19-seven-scenarios/>
2. Mishra, B. R. (2019). Role of external and domestic demand in economic growth: A study of BRICS countries. *Global Business Review*, 21(2), 547–566.
3. Sahoo, P. (2020). The policy response to minimize the fallout of COVID-19 on trade and MSMEs. In the volume “COVID-19: Challenges for Indian Economy.” Prepared by EEPC, ASEAN-India Center. https://www.eepcindia.org/eepc-download/617-Covid19_Report.pdf

Management Audit

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Abstract

Management audit is the research of a business, management audit is the systematic examination of management's decisions and actions to evaluate performance. Management audit involves the management of organizational aspects such as organizational goals, policies, procedures, structure, controls and systems to examine the efficiency or performance of management over the activities of the organization. Management audits focus on results, evaluating the effectiveness and appropriateness of controls by challenging the underlying rules, procedures and methods. Management auditing is the assessment of employee and organizational improvements in an organization's management practices and policies and resources utilization, strategic and strategic planning and administration. Management audits are usually conducted by a company employee or independent consultant and focus on a critical evaluation of management as a team rather than an individual evaluation. This paper illustrates the need for management audits of companies. Objectives, benefits and limitations of companies conducting management audits.

Keywords - Management, audit, requirement, objectives, management audit, benefits, limitations.

Objectives of study- The purpose of this chapter is to make you understand

- 1) Study the concept of Management Audit
- 2) To study the objectives and scope of management audit
- 3) To study the benefits and limitations of management audit
- 4) To study the scope of management audit

Research methodology

Basic data: Basic data is the first piece of information collected by a researcher. It is customized according to the need of the researcher and focuses exclusively on the current research problem.

- 1) Personal interview of clients
- 2) Creating a questionnaire

Secondary data: Secondary data can be defined as pre-collected data for some purpose in the present study. Any data available before the start of a research project is secondary data so secondary data is called historical data. This study is based on secondary data collected by the researcher from the following sources-

Secondary data collected from -

- 1) Company manuals and brochures
- 2) Reference books and websites

It should be noted here that the World Wide Web is the source of information. Although there are many books available on green marketing, it is worthwhile to get a basic idea of the project. This research paper is based entirely on secondary data from which all the sources used to complete the prophecy can be classified as:

- 1) Internet
- 2) Textbooks
- 3) Newspapers and commercial magazines,
- 4) Academic Journals and Research Papers.

Introduction

Management audit is an evolving concept of audit. It originated in America. Management audit is the activity of evaluating the activities of all departments, providing appropriate instructions for management to assist in their work. In other words, management audit is a forward-looking function that performs timely evaluation at all levels of management, such as production management, sales management, etc. The main objective of management audit is to improve profitability, functions of management, program objectives. Social goals and human resource development so that organizational goals can be easily achieved. It refers to the existence of a control system, compliance with rules and regulations, the process of administrative decision making, etc.

Management Audit Concept

Management audit is the audit of management. It is similar to an activity audit in many respects. However, management audits focus more on the inefficiencies and weaknesses of management.

Management audit is an independent and systematic evaluation methodology of management activities at all levels of management to ensure that functions, efficiency and management (i.e. policies) are achieved compared to the standards set by the organization. Ale. R. According to Howard, "Management audit is the research of a business from the highest level to determine if sound management is practiced throughout the business, thereby creating the most effective relationship with the outside world and the smooth functioning of the internal organization. Provides. "

Maintenance audit required:

Management is implemented and its ability to execute policy. Therefore, as all aspects of management are examined, the scope is much broader than financial audit. The need for a management audit is discussed below:

1. Capacity Verification: The objective of a management audit is to assess efficiency at all levels of management and policy implementation.
2. Provides suggestions for capacity building: Management audit highlights inefficiencies in various areas of management and provides valuable suggestions and ways to improve efficiency.
3. * Impact of Plans and Policies: The Management Audit examines and evaluates plans and policies and makes judgments on whether the plans and policies are properly implemented.
4. Helps to increase profitability: Management audit helps management to increase profitability by taking steps to increase the resources of the organization efficiently.
5. Assists in coordinating activities: Management audit finds interrelationships between activities, assesses authority and responsibility and provides valuable suggestions for improving coordination between activities and employees.
6. Provides valuable advice: By scanning management capabilities and finding vulnerabilities in management at various levels.

Scope of the Management Audit

The scope of management audit is much broader than financial audit because management audit assesses not only financial audit but also other aspects of the business. It is a method of estimating the overall efficiency of management from the top to the bottom. Therefore, the main scope of a management audit is:

1. Evaluate management efficiency: Management audit assesses and evaluates management efficiency at all levels.
2. Implementation of Management Principles and Policies: Management audit reviews whether the principles and policies designed by management have been successfully implemented.
3. Find the difference: It identifies the difference in efficiency with the criteria set by management.
4. Analyze the reasons for the discrepancies: The management audit analyzes the reasons for the inefficiency of the management to reach the targets.
5. Pointing for improvement: It provides suggestions for improvement in the areas of production, sales, procurement, finance, human resources, administration, etc.

Objectives Management Audit

1. Identify weaknesses and inefficiencies of management in various functional areas such as production, sales, finance etc.
2. Analyze different ways to address inefficiencies or vulnerabilities.
3. To critically review the structure of the organization.
4. Some objectives of management audit are to evaluate and select the best ways to improve management efficiency.
5. Formulation of the goals of an organization.
6. Ensuring the fulfillment of goals.
7. Assisting management to improve operations and processes.
8. To assist all members of management in performing their duties effectively.
9. To help improve profits.

Benefits or Importance of Management Audit:

1. Assess management efficiency: Management audit is a method of independent and 'systematic evaluation of management activities at all levels of management, to ensure management's functions, efficiency and practices (i.e. policies) with set criteria. Compared with. Company.
2. Examination of Plans, Policies and Processes: The management audit helps in determining how management has implemented its plans, policies and policies to achieve the objectives of the organization.
3. Assistance in improving plans, policies and processes: Through a management audit, it is possible to change or modify plans, policies and policies to suit the needs of the company.

4. Assistance in decision making: Management audit in Ability of managers to assist them in making critical decisions and correcting errors.
5. Helps in getting credit: Financial institutions that give huge loans to companies are interested in learning the efficiency and profitability of management. The management audit will definitely give them guidance.
6. Assistance in obtaining subsidy: Before the government grants subsidy, they are interested to know the efficiency and performance of the management of any organization. Management audit can help in this regard.

Limitations Management Auditing

1. Management audit is an audit of management by and for management. Management auditors are selected by the management itself. Such auditors may or may not perform the work assigned to them.
2. Management auditors are generally familiar with the company and its employees and employees. Personal matters are not ignored in this type of audit. Some may use this audit to equate someone, while others may use it in favor of another.
3. They are likely to take the facts lightly and may not investigate the matter further.
4. Time and expense limits may limit the scope, conduct and scope of such audits.
5. Management The selected management audit team may not appear as a team, may not work and may not work. Conflicting interests, attitudes and inclinations undermine the overall purpose of the audit.
6. Management audit is high cost and is suitable only for a large firms.
7. Management audit can create fear in the minds of executives and reduce their initiative and innovations.

Summery

Management audit is important to every business. Management audit identifies the goals of the organization if such objectives are not established. The management audit assigns the overall objectives of the organization into smaller parts. The management audit reviews the structure of the firm and the assets of the firm and determines whether the objectives can be achieved. Management audit examines all scope of work and responsibility centers. After evaluating all the above facts the management will provide valuable instructions for the audit management.

References

1. R.S.N. Pillai (Author), V. Bagavathi (second author) (2010) Management Accounting by S. Chand Publication, New Delhi
2. Parashar Banerjee (Author) Management Accounting by Palmview Publication, Chennai
3. Atrill, P., & McLaney, E (2009). Management Accounting for Decision Makers (6th ed.). Essex, Pearson Education Ltd.
4. Bhimani, A, Horngren, C.T, Datar, S.M. (2013), Management and Cost Accounting. Financial Times Prentice Hall, Harlow.
5. Internet , Magazines, Journals, Newspapers, Online Research Papers.

Importance of market based on local needs in Rural Development

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Introduction:-

Rural markets have become an important part of the Indian marketing system. As rural areas are the backbone of the Indian economy, rural areas are also of paramount importance. But the development of these markets is a recent feature. The developments of the last three to six decades have given rise to rural marketing has lost face look changed.

Keywords: - Stability, Services, Innovation, Productive. Etc.

Aims and Objectives :-

- 1) Understanding the sale of agriculture marketing.
- 2) Local study to agriculture market.
- 3) Study of rural people and development.

The importance of marketing in terms of different sections of the society can be explained as follows:-

Significance of manufacturing organization :-

Marketing is one of the most important parts of any productive organization because many factors like Profit, Scales, Success, Stability, Reputation etc. of the organization depends on the marketing work. The importance of marketing can be explained as follows:-

Way to income: - Marketing is very important business venture manufacturers of goods or services. Marketing is a very important part of the marketing process.

- 1) **Sales growth:** - The role of marketing is very important in driving sales growth. Marketing eliminates the problem of sales by reconciling the nature of the product and the effect of the product. The leads to increased sales of the organization marketing enable the organization to capture and capture new markets for its products.
 - 2) **Non-manufacturing:-** In today's changing world marketing is a very important part of innovation. Innovation makes it possible to adapt to a competitive environment by adapting to changing productions conditions and increasing the competitiveness of the organization. Innovation makes it possible to find and develop new products.
- A) Important from customer's point of view :-**
- 1) **Meeting needs:** - Efficient marketing method allows customers of meet their various needs. Manufacturers modify their products based on the preferences of the customer and thus give the customer the opportunity to meet all their needs.
 - 2) **Job creation:** - The continuous development of marketing has provided employment opportunities to the society. The task of marketing is becoming very important in providing employment opportunities to many who have specialized knowledge of marketing.
 - 3) **Market knowledge:** - Marketing can help consumers gain market knowledge. This allows the consumers to know about the manufacturers in the market, their products, their quality, price etc. So that they can buy the right product at a lower price.
- B) Significance in term of economy :-**
- 1) **Product simulation:** - The efficient marketing system in the country stimulates and drives the product. Due to the current Pre-order Production System, marketing is important in generating demand for this product; which leads to an increase in production in the country.
 - 2) **Demand-Supply balance:** - Marketing helps to balance supply and demand in the country. Equilibrium between supply and demand helps in controlling price fluctuations and keeping prices stable. Such a balance is important for industrial development.
 - 3) **Development of Industries:** - The development of marketing has given impetus to the emergence and growth of new industries in the country. The development of industries leads to the growth of the economy and helps the industries to achieve stability.

Conclusion :-

India is an agriculture country, so the design of rural market plays a very important role in considering the rural areas of India. Because, the productive traders in the rural areas have a chain connected with their daily life, the development of the markets is essential for the development of the rural areas.

References :-

1. Agriculture Marketing and Finance - Prof. Arun Manerikar.
2. Marketing and Financing - Prof. Babanrao Khamkar.
3. Rural Marketing - Pradeep Kashyap.
4. Rural Marketing - Dr. Kavita G. Kalkoti.

Function of Human Resource Management In Private Hospitals

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ABSTRACT

Health care is to beautify first-class of lifestyles through enhancing fitness. It is one in all world's biggest industry. Commercial groups consciousness on growing monetary earnings to guide their valuation and continue to be possible. Health care ought to consciousness on growing social earnings to satisfy its promise to society. Before few years, the health center management was controlled through a unmarried doctor. Today, Commercial groups consciousness on growing monetary earnings to guide their valuation and continue to be possible in addition to it is well recognized that the system requires at a l professionalization to achieve equality and cost- effectiveness. The foremost goal of this paper is to enhance and broaden a framework for development of fitness care offerings through an effective in addition to green human aid control system. The look at consciousness on a want to research human aid control strategies that present fitness care area and courses pleasant approaches to achieve better stages of worker delight has results in excessive first-class of affected person care. The look at layout entailed structured Questionnaire & interviews with Administrators, Managers, docs and nurses from personal hospitals in Yeola region.170questionnaires had been circulated out of which 70Questionnaire had been obtained well filled. The look at recommends that managers and control must consciousness on enhancing the functioning of right HR managements structures in healthcare agencies as one critical way to enhance affected person care.

KEYWORDS: Human Resource Management, Hospitals, Employees, Patient Care, Organization.

Introduction

Health care is the world's biggest industry. As such, India needs to be organized to meet the fitness care demanding situations of the new millennium. Like different organizations, hospitals are involved with maximum effectiveness via the adoption of right control regulations and hr practices. Unlike maximum different organizations, however, 'effectiveness' in hospitals can be measured in part via way of means of their achievement in treating infection, supplying offerings and avoiding deaths. Also in contrast to many different sectors, little studies has tested and identified the control HR regulations and practices that sell effectiveness in clinic settings. Hospitals in now days ought to be aggressive and additionally fee effective. In order to continue to exist state-of-the-art competition, Patients i.e. Customers are the principle source of decisive pressure at the clinic control. From clinic control factor of view, patient's delight as well as curing infection and delight is the principle concern. In order to satisfy patient's needs at some stage in their hospitals stay, clinic staff, hospitals infrastructure aid and clinic offerings are on paramedical take a look at all the time. Very critical useful resource in a clinic is human useful resource. Human useful resource control in hospitals applies the capabilities of general control- planning, organizing, directing, and controlling toeach of 1 the duties of human useful resource control- Procurement, development, compensation, integration, preservation and separation. The large goal of HR to contribute closer to cognizance of the hospitals goal.

The specific goals are to-
• To acquire and hold suitable human members of the family in the health center.
• To examine and permit every worker to make his/her most personal contribution to the powerful operating of the health center.
• To make certain recognize and the health of the person worker.
• To examine the most improvement of the person, and to help him/her contribute his / her best to the hospit al.

Human useful resource control in hospitals has now grow to be a need and it has to acquire (a) powerful usage of human resources; (b)ideal operating relationships amongst all personnel, (c) most personnel improvement; (d) high morale withinside the organization; and (e) non-stop improvement and appreciation of human assets. The HR branch is liable for the recruitment of the targeted body of workers. All the associated appointment processes are satisfied as in keeping with the coverage of the specific authorities. A exact verification of the candidate's instructional qualifications, experience, and history etc. is carried out previous to their real activity placement. All the personnel recruited through HR Department are required to go through a obligatory pre- employment medical checkup. They also are required to sub mit call in addition to identification evidence and contact character who may be contacted for reference. It is likewise the coverage of the branch to behavior police verification of the candidate in case required. Only after satisfactorily clearing all of the recruited associated formalities alongside the medical check, the appointments letters are issued to them. In case of body of workers out sourced, the health center conducts pre-employment checkup precedence the activity placement of the group of workers. The personnel

concerning folks who are positioned on deputation to acquaint them with the hospital, its mission and vision, its policies, its organization structure, control personals, worker rights and responsibilities etc. sanatorium will behavior induction programme for the all newly joined. Training might be given as according to norms of hospitals.

Review of Literature

According to Michael A. West, Carol Borrill, Jeremy Dawson, Judy Scully, Matthew Carter, Stephen Anelay, Malcolm Patterson & Justin Waring (2002). The courting among human aid control practices and organizational performance (together with high-satisfactory of care in healthcare organizations) is an important subject matter within the organizational sciences however little studies has been conducted analyzing this relationship in hospital settings. Human resource (HR) directors from sixty-one acute hospitals in England (Hospital Trusts) finished questionnaires or interviews exploring HR practices and procedures. The interviews probed for information approximately the extensiveness and sophistication of appraisal for personnel, the quantity and sophistication of schooling for personnel and the proportion of group of workers operating in teams. Data on affected person mortality have been additionally gathered. The findings discovered strong institutions among HR practices and affected person mortality generally. The quantity and sophistication of appraisal within the hospitals turned into specially strongly related, however there have been hyperlinks too with the sophistication of schooling for group of workers, and additionally with the chances of staff working in teams. According to Susan C. Eaton (2006) this look at examines the hyperlink among human aid control, (HRM), work organization, and affected person care high-satisfactory in U.S. long-time period care settings, featuring a key function for each control philosophy and progressed the front line staffing preparations in handing over consistently better first-class care, defined to include each bodily and psychological outcomes. Using the "excessive performance" version from commercial family members as a lens, the paper identifies 3 awesome systems of HR and nursing domestic control: conventional low-carrier first-class, excessive carrier first-class scientific rehabilitative, and 'new paradigm regenerative.' According to Stefane M Kabene, Carole Orchard, John M Howard, Mark A Soriano and Raymond Leduc (2006). This paper addresses the fitness care device from a worldwide attitude and the significance of human sources control (HRM) in enhancing common affected person fitness outcomes and shipping of fitness care services. We explored the posted literature and accrued statistics via secondary sources. Various key fulfillment elements emerge that surely have an effect on fitness care practices and human sources control. This paper will screen how human sources control is vital to any fitness care system and how it can improve health care models. Challenges in Canada's fitness care systems, the United States of America and numerous growing international locations are examined, with guidelines for methods to triumph over those troubles via the right implementation of human sources control practices. Comparing and contrasting selected international locations allowed a deeper understanding of human sources control's sensible and essential function in healthcare. Proper control of human sources is essential in supplying a excessive first-class of fitness care. Are awareness on human sources control in fitness care and more studies are had to expand new policies. Effective human sources control techniques are significantly needed to obtain higher effects from and access to health care around the world. three.

Objectives Of The Study:

- 1) To discover the Human Resource Management practices in hospitals
- 2) To propose Human Resource Management policy & practices for growing employees' quality & delight operating in hospitals.
- 3) To discover the delight of the numerous wishes of sufferers to reap their most contribution to obtain the hospitals goal.

4) Research Methodology

The researcher has selected 10 hospitals having greater than 50 mattress electricity for the study. The records has been amassed from the hospitals with the assist of structured Questionnaire. The representatives of hospitals have been decided on from the region of Yeola region. As predicted now no longer all hospitals answered positively, few clinic refused to take part with in side the study. 170 questionnaires have been circulated and out of that 70 have been well filled with the aid of using clinic administrators, Managers, Doctors, nurses and forty have been incomplete and 30 now no longer returned. 15 hospitals have answered, 12 hospitals have now no longer answered for one or every other motive ultimate three hospitals questionnaire filled incomplete Questionnaire. The nature of the records is each number one and secondary records. The number one records amassed thru structured Questionnaire and researcher personally visited to chose hospitals in Yeola region. The secondary records amassed from data and files to be had in hospitals, website, journals etc. Data accrued thru Questionnaire have been

analyzed with the assist of Statistical Package for Social Sciences (SPSS)Software. Analysis supplied with the help of pie chart and bar graph sand chi-square take a look at have been applied. five.

5)Area of Research:

The region of studies is Yeola taluka of Nashik District of Maharashtra for the studies projects. Questionnaire turned into gathered from those hospitals which are as follows:

1. Shah Hospital & Critical Care Centre
2. Panacea Hospital
3. Radheya Hospital
4. Shantipushpa Accident Hospital.
5. Sai Siddhi Mutispecialist Hospital.
6. Santoshi Mata Hospital

6. Data Analysis & Interpretation:

6.1 Interpretations 1

The above tables indicates the frequency distribution for communique and Disposal of grievance. Out of eighty questionnaires of 15 hospitals, 40 respondent have been correctly doing communique & Disposal of grievance "To complete extent", 10 respondent have been reasonably doing communique & Disposal of grievance "To high-quality extent", 20 respondent have been reasonably doing communique & Disposal of grievance "To partial extent", five respondent have been reasonably doing communique & Disposal of grievance "To some extent", five respondent have been not communique and Disposal of grievances to employees in the hospitals.

6.2 Interpretations 2:

The above pie-chart indicates the frequency distribution for Employees Performance Appraisal. Out of eighty questionnaires of 15 hospitals, forty five respondent turned into correctly doing Employees Performance Appraisal "To the total extent", nine respondent have been doing communique & Disposal of grievance, "To a high-quality extent", 24 respondent have been doing communique & Disposal of grievance "To the partial Extent", 7 respondent had been doing communication & Disposal of grievance "To a few extent", 15 respondent had been not doing personnel performance appraisal.

6.3 Interpretations 3:

The above graph indicates a couple of responses analysis (frequencies) for the sorts of staff worker straining packages finished by hospitals. Out of 80 "Yes" responses, 45% stated education application turned into process knowledge, 15% stated sufferers hassle solving, 20% stated fire safety, 12.5% stated greeting guest & Courtesy remaining 7.5percentsaidothers.

le 1: Grievance redressed comparison

		Frequency	Percentage
Communication	To Full Extent	40	50
	& Disposal of		
Grievance	To great Extent	10	12.5
	To partial Extent	20	25
	To Some Extent	5	6.25
	Not at all	5	6.25
	Total	80	100

Communication & Disposal of Grievance

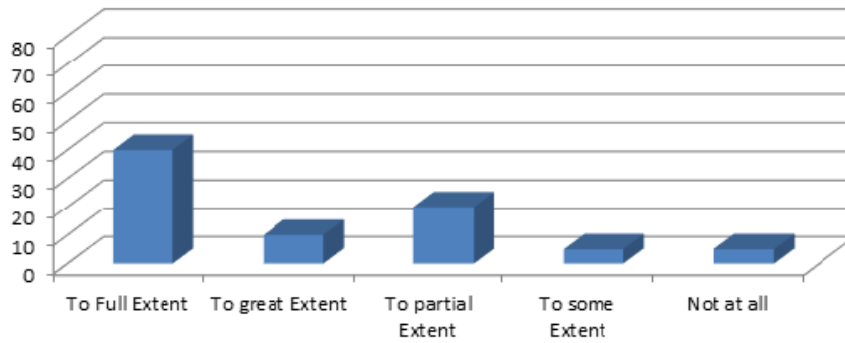


Figure 1: Grievance redressed

TABLE 2: Appraisal Statistics

		Frequency	Percentage
Employees	To Full Extent	45	56.2
Performance	To great Extent	9	11.2
Appraisal	To partial Extent To some Extent	24	30
		7	8.75
	Not at all	15	18.75
	Total	80	100

Employees Performance Appraisal

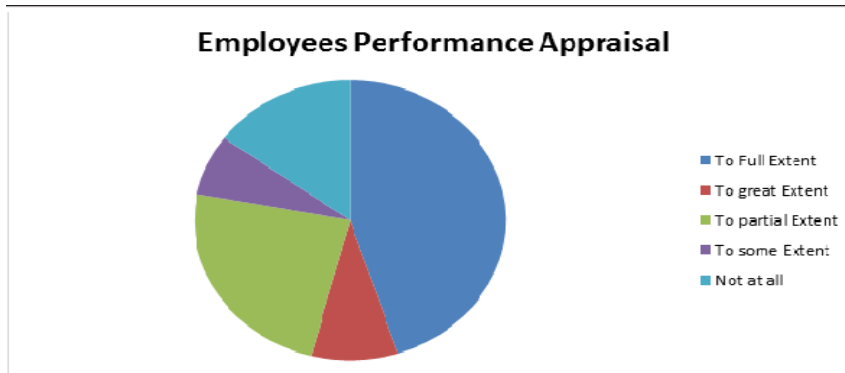


Figure 2: Appraisal Pi Chart

TABLE 3: Employee training program

		Frequency	Percentage
Employee training programme	Job Knowledge	36	45
	Patients Problem	12	15
	Solving Fire Safety	16	20
	Greeting Guest & Courtesy	10	12.5
	Others	6	7.5
	Total		80

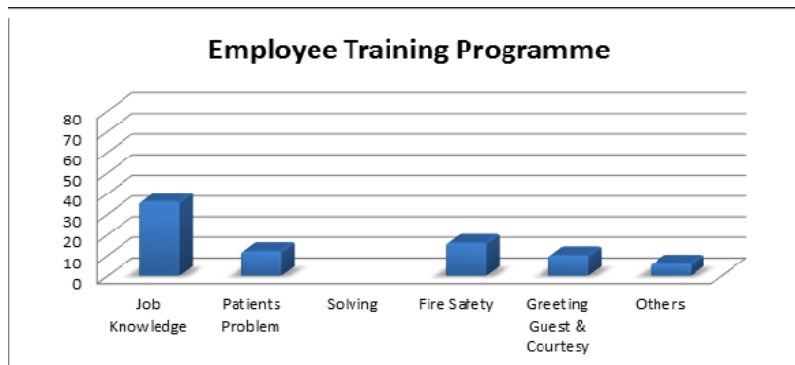


Figure 3: Employee training parameters

Limitations of the Study:

- The take a look at became specially confined to Yeola Region.
- It does now no longer cowl different regions.
- The take a look at became time-ingesting as quantitative take a look at requires extensive statistical analysis. **CONCLUSION**

The maximum crucial and applicable skill required for the healthcare workforce to implement incredible care to patients is human aid development. The conclusions drawn beneath are primarily based totally on data furnished via way of means of the Hospitals. The conclusions, derived from the present studies work, throw mild on numerous vital elements of Human Resource Management practices withinside the health facility Human Resource Planning: Most of the hospitals understand the significance of HRP & they do HRP to a first-rate extent. By setting the proper person at the proper job, the hospitals try to gain efficiency of The employees & pleasure of the patients. In this respect, 70% hospitals area the proper humans at the proper job regardless of hospitals' size, whether small, medium, or large. It can be concluded that employees' performance appraisal is extraordinarily taken into consideration while upgrading the human sources choice technique. There are fewer responses in the direction of critiques evaluation approximately the choice technique and tenure of human sources as spoke back via way of means of hospitals concerning the up-gradation of choice technique from time to time. According to 80% of hospitals respondents that induction training (orientation program) is provided to newly recruited & selected human sources.

Recommendations:-

All the hospitals have now no longer a separate schooling branch. The schooling needs are identified primarily based totally on overall performance appraisal reports, overall performance review conferences and adjustments because of growth, diversification etc. Sometimes the personnel themselves imply the schooling needs. In maximum of the hospitals the effectiveness of schooling is now no longer evaluated.

It is recommended to set up human useful resource / employees branch in hospitals as to make all of the activities powerful associated with company and human resources.

The sanatorium HR control should employ lengthy variety estimate of vacancies fixed minimal specific requirements, specific positions, and estimates as techniques for human useful resource making plans.

It is suggested to hospitals HR control to recollect balance ofcurrent deliver of personnel & to expand sensible forecast of employee deliver & call for as a consequence as functions of HR making plans.

There is a want to recollect recruitment plan, age distribution of employee's ,total quantity of employees to be had as well as revenue variety because the standards for human useful resource making plans for hospitals

References:-

1. Eaton,S.C.(2000).Beyond 'unloving care': Linking human resource management and affected person care excellent in nursing homes. International magazine of human useful resource control, 11(3), 591-616.
2. Kabene, S. M., Orchard, C., Howard, J. M., Soriano, M. A., & Leduc, R. (2006). The significance of human resources control in fitness care: a global context. Human resourcesforhealth,4(1),20.
3. West,M.A.,Guthrie,J. P., Dawson,J.F.,Borrill, C.S.,&Carter,M.(2006).R Educing affected person mortality in hospitals: the function of human useful resource management. Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior, 27(7),983- 1002.
4. West, M. A., Borrill, C., Dawson, J., Scully, J., Carter, M., Anelay, S., & Waring, J. (2002).The link between the management of employees and patient mortality in acute hospitals. International Journal of Human Res useful resource Management,

The Global Economic Crisis in India – Problems and Prospects

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Abstract : India's financial sector is not deeply integrated with the global financial system, which spared it the first round adverse effects of the global financial crisis and left Indian banks mostly unaffected. However, as the financial crisis morphed in to a full-blown global economic downturn, India could not escape the second round effects. The global crisis has affected India through three distinct channels: financial markets, trade flows, and exchange rates. The reversal in capital inflows, which created a credit crunch in domestic markets along with a severe deterioration in export demand, contributed to the decline of gross domestic product by more than 2 percentage points in the fiscal year 2018–2019. In line with efforts taken by governments and central banks all over the world, the Government and the Reserve Bank of India took aggressive countercyclical measures, sharply relaxing monetary policy and introducing a fiscal stimulus to boost domestic demand. However, this paper argues that with very limited fiscal maneuverability and the limited traction of monetary policy, policy measures to restore the Indian gross domestic product growth back to its potential rate of 8–9% must focus on addressing the structural constraints that are holding down private investment demand. The financial crisis soon morphed in to a full-fledged global economic downturn as credits markets froze, aggregate demand in all advanced economies fell, and commodity prices crashed, forcing exporters to shelve expenditure and lay off workers in large numbers. Consequently, industrial production collapsed worldwide. In the last quarter of the calendar year 2008, advanced economies and large economies like India and the PRC witnessed a contraction in their industrial production. In some of the major export-oriented countries like Japan, Germany, and Brazil, industrial output contracted more than 10% during the third and fourth quarters of fiscal year (FY) 2018. The decline in industrial output made labor retrenchment and surging unemployment almost inevitable. This research paper to be discussed “**The Global Economic Crisis in India – Problems and Prospects**”.

Key Words: Global Economy, External credits, Period of transmission, Banking Sector, unorganized Sector, Minority Policy, Finance Development

Statement of Problem

“A Strong economy begins with a strong well – educated Work force”.

Prof. Bill Owns

The Indian economy looked to be relatively insulated from the global financial crisis that started in August 2007 when the sub-prime mortgage crisis first surfaced in the United States (US). In fact, the Reserve Bank of India (RBI) was raising interest rates until August 2008 with the explicit objective of cooling the economy and bringing down the gross domestic product (GDP) growth rate, which visibly had moved above the rate of potential output growth and was contributing to the buildup of inflationary pressures in the economy.¹ But when the collapse of Lehman Brothers on 23 September 2008 morphed the US financial meltdown into a global economic downturn, the impact on the Indian economy was almost immediate. External credit flows suddenly dried up and the overnight money market interest rate spiked to above 20% and remained high for the next month. It is perhaps judicious to assume that the impacts of the global economic downturn on the Indian economy are still unfolding. Against this backdrop, this paper attempts an analysis of the impact of the global financial crisis on the Indian economy and suggests some policy measures to put the economy back on track. Broadly, the paper has been divided into six sections. After summarizing the severity of the current crisis in Section 2, Section 3 deals with the impact of the crisis on the Indian economy. Section 4 discusses the monetary and fiscal policy responses to the crisis, while Section 5 provides a critical assessment of the policy responses. In the final section we recommend some policy measures that are needed to reverse the downturn.

Global Indian Economy : In response to its balance of payments (BOP) crisis in the early 1990s, India implemented a series of trade, industry, and investment reforms. These reforms effectively liberalized the economy, ending a long period of relative isolation from global markets and financial and technology flows. Since then the Indian economy has become increasingly integrated with the world economy. As a result, two-way flows of portfolio and direct foreign capital have gone up from a mere 12% of GDP in

FY2010–2012, to 64% of the GDP in FY2017–2018, registering a fivefold increase. Interestingly, these ratios are significantly higher than those in the US, for which trade in goods and services constituted only 41% of GDP in 2017 and capital flows another 25% in the same year.

Transmission of the Crisis to the Indian Economy

With India's increased linkage with the world economy, India could not be expected to remain immune to the global crisis or be decoupled from the global economy. While it is true that the Indian banking sector remained largely unaffected because of its very limited operations outside India or exposure to sub-prime lending by foreign investment banks, the global crisis has affected India through three distinct channels. These channels are financial markets, trade flows, and exchange rates. The financial sector includes the banking sector, equity markets (which are directly affected by foreign institutional investment [FII] flows), external commercial borrowings (ECBs) that drive corporate investments, FDI, and remittances. The global crisis had a differentiated impact on these various sub-sectors of the financial sector. Given prudent regulations and a proactive regulator,⁷ the Indian banking sector has remained more or less unaffected, at least directly, by the global crisis. The imposition by the RBI of a higher provisioning requirement on commercial bank lending to the real estate sector helped to curb the growth of a real estate price bubble. This is one of the few global examples of a countercyclical capital provisioning requirement by any central bank. In general, Indian banks were not overly exposed to sub-prime lending. Only one of the larger private sector banks, ICICI Bank, was partly exposed but it managed to thwart a crisis because of its strong balance sheet and timely action by the government, which virtually guaranteed its deposits. The banking sector as a whole has maintained a healthy balance sheet. In fact, during the third quarter of FY2018, which was a nightmare for many big financial institutions around the world, banks in India announced encouraging results. Against an absolute decline in the profitability of non-financial corporate enterprises, the banking sector witnessed a jump of 43% in its profitability. A ban on complex structures like synthetic securitization coupled with a close monitoring of appropriate lending norms by RBI also ensured a better quality of banking assets. The non-performing assets as a ratio to gross advances have remained well within prudential norms. Further, with an average capital risk weighted assets ratio (CRAR) of 13%, Indian banks are well capitalized and better placed to weather the economic downturn.

This large volume of government borrowing is bound to exert a significant upward pressure on market interest rates and also result in inflationary pressures, especially if agriculture output is adversely affected by deficient monsoons. Monetary policy will therefore face tough questions in the coming months. On the one hand it will be trying to hold interest rates down to stimulate private investment demand. On the other hand, it will have to keep a very careful eye on any inflationary tendencies and act quickly to restrain them. With very limited fiscal maneuverability and the monetary policy constrained by the tradeoff between holding down interest rates and preventing inflationary tendencies, the focus of policy measures must be to further raise India's potential output growth rate. Various agencies have set the target growth rate between 8.5–9.0%, as shown in the chart below. Raising the potential growth rate requires another round of structural reforms that will improve the investment climate, especially for small and medium enterprises (SMEs) that have suffered the most with the collapse of external demand and employ the majority of the work force. SMEs currently suffer from having to face a plethora of official procedures and licensing and regulatory requirements that raise their transactions costs significantly, making them uncompetitive in global markets and unable to withstand import competition in domestic markets. The government will do well to review all the policies that have an impact on "doing business" in India with the clear objective of improving the investment climate. The evidence for this will be best reflected in an improvement in India's rankings in the World Bank surveys in the coming year

Role of Finance in Development:

While on one side global forums like the G-20 and international regulatory bodies continued to deliberate on issues relating to financial regulation, the year 2011 was also marked by rising concern across the world that 'finance' had somehow got de-linked from serving the interests of the real economy and that various regulatory and compensation practices are out of sync with the needs of the rest of the economy.

The issue of compensation in the financial sector has been a major area of debate not just in the G-20 but also in the media in general. Similarly, the issue of financialization of commodities and speculation leading to volatility in commodity prices and the idea of implementing a tax on financial transactions has been contentious issues on which no clear consensus has emerged. Of late, an area of concern even among serious academic researchers has been whether the financial sector has become just too big in some advanced economies and whether its value addition is really genuine and correctly measured.

What need to be done

Regardless of whether these views and perceptions are correct or misplaced, these debates and the ongoing work need to be taken note of in policy. Fortunately, the Indian financial sector and its banks have thus far been well regulated and to ensure that it serves the real sector has been an abiding policy concern. Nevertheless, given the criticality of the role of finance in development, the Indian regulatory system would also need to maintain and strengthen its vigil to ensure that growth in the financial sector and the intermediation process

go towards furthering economic development and financial inclusion.

It has been argued that the IMS has no mechanism to prevent a build-up of imbalances on the external account and the burden of adjustment falls on deficit nations. In the run up to the crisis of 2008, it was felt that countries like the US could somehow sustain fiscal and current account deficits by virtue of the privilege of issuing a reserve currency. But this trend instead accentuated the so called external imbalances, even if it was not the primary cause of the crisis that turned global.

The French Presidency constituted a G 20 Working group on reform of the IMS which focused, among others, on capital flows and their management (CFM), the measurement of global liquidity, holding of international reserves, and future role and composition of the special drawing rights (SDR). While the latter two issues remain areas of continuing work, drawing on the work of the IMS group, the Cannes Summit communiqué mentions that the 'Coherent Conclusions for the Management of Capital Flows' would guide the G-20 in order to reap the benefits of financial globalization, while preventing and managing risks that could undermine financial stability and sustainable growth at national and global levels.

References:

1. Bhalla, S. 2008. Surjit S. Bhalla: Inflation Control Chokes Growth. *Business Standard*. 17 October.
2. Brunnermeir, M. K. 2009. Deciphering the Liquidity and Credit Crunch 2007–2008. *Journal of Economic Perspectives* 23(1): 77–100.
3. Central Statistical Organization (CSO). 2009. National Account Statistics. New Delhi: CSO.
4. Economic Advisory Council. 2009. Economic Outlook for 2008-09. New Delhi. Economic Advisory Council to Prime Minister.
5. Eichengreen, B., and K. H. O'Rourke. 2009. The Tail of Two Depressions. *VOX*. 6 April. roni E., and R. Newfarmer. 2009. Trade Protection: I *Trade Notes* 37.

Related Websites and Internet Resources

1. http://www.pib.nic.in/archieve/others/2009/jan/eco_20092301.pdf
2. http://www.wto.org/english/news_e/pres09_e/pr554_e.htm

Per Farm Assets- Comparative Study of Shrigonda Tahsil (MS)

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Abstract:

In India with more than 75% of the total population is in rural areas. It is imperative to develop the villages. Agricultural activity is not only a means of earning livelihood about a way of life in the Indian context. In India, agricultural sector is predominant. So obviously agricultural planning will be the core of the overall planning. The basic production unit is the individual's farm. Out of the National Income gross agricultures share is 42% (Directorate of Economics and Statistics, New Delhi 1980). Hence the level of efficiency and productivity in agriculture to a great extent determine the efficiency of Indian economy. Thus indirectly rural development is depends on the agricultural development of the nation. When once the population is self-sufficient in the food grains, oil seeds, pulses etc. the surplus income generated can be used for other necessary infrastructure development.

Study Area:

Shrigonda Tahsil forms to the southern part of Ahmednagar District (18° 27' N to 18° 51' North latitudes and 74° 23' E to 74° 52' East longitudes). Total geographical area of the Tahsil is 1519.89 Sq. Km. and stand fourth largest Tahsil in Ahmednagar district. Shrigonda Tahsil is situated between Pune District to the southwest and Beed District to the northwest. Parner and Nagar Tahsil to north and Karjat to southwest. Agro climatologically, Shrigonda Tahsil is affected by drought prone area, and average annual rainfall is 522 mm. and the rainfall is 77% in June to September, which is reflected on cropping pattern of the Tahsil. The average maximum temperature is 38.9°C.

The development of irrigation effects agriculture in several ways:

1. It makes the outcome of the crop more certain than in its absence. Instability of yields should decline with the advent of irrigation ;
2. the immediate impact is on crop pattern leading to a shift from less to more remunerative crops; and
3. Irrigation is also expected to increase the overall productivity.

Per Farm Assets- Comparative Study:

The average asset value per house hold in irrigated sample village is observed be Rs. 13,285 as against Rs. 6,878 for un- irrigated villages. Overall LHS, the share of land in the total asset is 93% in irrigated villages while for un- irrigated villages while for un- irrigated villages is 89 %. Livestock (as an asset) seems to be not that important in irrigated villages (4%), while it is 8 % in un- irrigated villages. The share importance of agricultural implements in asset formations seems to be equal (each 3 %) for both the villages.

As the number of farms is not the same in sample villages. The total fixed assets, per hectare, in irrigated villages are observed to be Rs. 5,733 as against Rs. 2668 for un- irrigated villages. The livestock value, as a fixed asset (per hectare) is observed to be more in un- irrigated villages (Rs. 434) as against (Rs. 330) for irrigated villages. Thus cultivators of un- irrigated villages seem to invest more on livestock (both working and milk animals) which is a source of income. This income is regular and assured coupled with lesser risk. So far as agricultural implements are concerned, the figures are almost the same for both the villages. Thus the overall figure seems to be deceptive, but for the land value differentials.

**Table- 1 Fixed Assets Position (Rs.) Composition – LHS wise
 Irrigated Villages**

LHS	Per farm land %	Live Stock %	Agri. Implements %	Total	Per hectare Land	Livestock %	Agri. Implements %	Total
I	3070 83	50 13	154 4	3274	400000	771 12	238 4	401009
II	8850 88	860 9	349 3	10059	380000	448 8	102 2	380550
III	17770 90	1268 6	777 4	19815	390000	313 6	107 2	390420
IV	23450 89	1908 7	1178 4	26536	410000	304 6	130 2	410434

Overall	41510 93	1862 4	1014 3	44386	400000	330 6	119 2	395603
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Un- Irrigated Villages

LHS	Per farm land %	Live Stock %	Agri. Implements %	Total	Per hectare Land	Livestock %	Agri. Implements %	Total
I	1890 79	478 20	35 1	2403	80000	528 20	39 1	80567
II	3957 73	1279 24	167 3	5403	90000	650 23	85 3	90735
III	7583 80	1525 16	341 4	9449	100000	552 21	123 5	100675
IV	14080 84	1948 12	738 4	16766	110000	483 17	183 6	110666
Overall	21618 89	1898 8	662 3	24178	100000	398 15	145 6	95661

Debt Position and Assets:

In the lowest LHS, only 38 % of the farmers are debtors. (Table 4.22). The percentage has gone up (exception being the 4th LHS) with LHS and touched 74%. The main purpose for many farmers to go in for loan is agriculture; followed by private reasons like religious and social functions. Similarly the source popular is co-operative society followed by bank, and private agencies. For agricultural purpose (inputs, well digging etc) 87% farmers borrowed money, while 13% took money for private to be the most popular agency as 55% of the cultivators took loans from the society. The private lender seems to be equally important.

The role of private money lender seems to be more LHS, both in number and amount borrowed, though average amount borrowed (per farm) is minimum in the lowest LHS. It is on increase with land size. The range is Rs. 629 to Rs. 3406 (average of Rs. 2126). For agricultural purposes 19 farmers reported to have approached private parties. Out of the 21 cultivators approached private parties, 42 % are for agricultural purpose only. This figure shows the distressing situation still prevailing in the rural side in spite of a nationalized bank present in the sample villages.

Table- 2 Debt Position and Assets

LHS	Effective HH	Percentage	Purpose (n)	Source (n)	Amount borrowed (Rs.)	Assets (Rs.)	Ratio (D/A)
< 1.5 hect.	03	38	Agl (3)	Society (3)	629	3727	(0.17)
1.5 to 3 hect.	08	50	Pvt (4) Agl (4)	Pvt (4) Bk / Society (2)	420 3075	10058	(0.35)
3.1 to 7 hect.	19	40	Pvt. (3) Agl. (16)	Pvt (3) Society (13) Bk (3)	600 949	19814	(0.08)
> 7 hect.	15	48	Pvt (2) Agl (13)	Pvt (2) Bk (1) Society (7) Pvt (5)	875 868	26336	(0.06)

The ratio of debts to assets, for each LHS has given the nature extent of indebtedness for each land size. It is maximum (0.17) in the lowest land size. The irony is even though the effective borrowers are 38 % of the total, the ratio is high. This artifact is due to the low asset value, but not due to large money borrowed. In 2nd land size also the ratio is observed to be very high (0.35). But then onwards the value has decreased to 0.08 and 0.03. This shows that “per farm debt” is not much in irrigated villages, as they have got more assets.

In un- irrigated villages, effective number of farmers, who borrowed money for various purposes, is more (59%) than in irrigated villages (43%). The purpose is for agriculture and crop (agricultural purpose covers land leveling, farm house construction, repair, bullock cart etc.). No private purpose is reported as a reason for borrowing. The source is mainly co- operative society(92%) followed by an

insignificant role by bank (8%). Though private lender is completely absent, bank's role is also equally discouraging. The technical repayment by farmers every year and again raising loans from the society show how poor the farmers are and the extent to which they depend on borrowings to cultivate their lands. On an average per farm borrowings are observed to be Rs. 4096 as against Rs. 2126 from irrigated villages. As they have relatively lesser assets, the ratio of "debt asset" is blown up, in each land size. In comparison to that of irrigated villages, the ratios are as high as 0.83 in the lowest land size. It came down to 0.07 and 0.05 in the higher land holding size, (through 0.61, 0.42, and 0.24). This is mainly due to higher borrowing and lesser assets.

Household Income Composition:

So far the assets a position is discussed, LHS wise for both the villages. The average household income, for each village is calculated and compared. It is found to be higher in irrigated villages (Rs. 3790) than in un- irrigated villages (Rs. 2052) (Table 4.23). The household income is observed to be on increase with increasing farm size. It would also be interesting to know the composition of income i.e., the source of income, contribute to the total income, in each LHS. The major source identified is 1. Agriculture, 2. Livestock, 3. Agriculture or non- agricultural labour, 4. Hiring out of cart and or bullock, 5. Trade, 8 Cash receipts (Sometime kind receipts in lieu of cash payments in agricultural labour).

Table- 3 Source of Income – LHS wise per Farm Income, Per Hectare Income (Rs.)

Irrigated Villages

LHS	Agriculture %	Live Stock %	AL %	Cart	Trade %	Cash receipts %	Total
I 29	2174 (54)	911 (23)	891 (22)	64 (2)	-	-	4040
II 34	2361 (52)	1137 (26)	658 (14)	232 (5)	-	153 (3)	4577
III 24	2539 (59)	800 (18)	304 (7)	106 (2)	167 (4)	407 (9)	4323
IV 19	2005 (40.4)	1450 (29)	316 (10)	417 (95)	363 (7.3)	163 (3.2)	4968

Un-Irrigated Villages

LHS	Agriculture %	Live Stock %	AL %	Cart	Trade %	Cash receipts %	Total
I	501 (27)	552 (30)	755 (41)	50	-	-	1858
II	778 (28)	790 (28)	900 (32)	192	83	67 (2)	2810
III	1467 (37)	608 (15)	583 (15)	1000 (26)	267	-	3926
IV	-79(4)	600 (41)	433 (30)	300 (21)	-	200 (14)	1454

For the lowest LHS (< 1.5 hectare) per household income per annum is observed to be very small viz., Rs. 1,442; and for highest LHS (> 7 hectare) Rs. 4,968. In the lowest LHS, maximum income (per farm) is coming from agricultural labour (80%), whereas agriculture and livestock contributes as small as (9%) and (7%) to the total income. From 1st LHS onwards, the share of livestock in the total income appears to be increasing and it is more than that of agriculture labour the latter being reduced to a minimum of 7 % in 4th LHS. Here agriculture contributes a maximum of 59 %, followed by livestock (18%). Hiring out cart / bullocks, trade and cash receipts also contribute to total household income to some extent in 4th LHS.

For un- irrigated villages the household income has increased with increasing farm size. Contribution from (non) agricultural labour is high in the lowest land holding size (80%) and it came down to 55% in 2nd LHS; In 3rd land size, the share of livestock has increased and that of (non) agricultural labour has decreased. In 4th LHS agriculture labours, contribution has gone up and income from non-agricultural labour has come down. In the higher LHS, income from agriculture is actually negative; they have to depend on livestock and to some extent (none) agricultural labour also.

Thus in irrigated and un- irrigated villages the average values of the household income (per annum) not only differed in magnitude but also in composition. In dry cultivation, agricultural labour dose not play a predominant role as it does under irrigation. The villages show the pursuit by the dry farmers of different occupations for their livelihood / survival.

Household Expenditure:

So far the discussions are around the income, asset, and debt aspect of the cultivators belonging to the 22 sample villages. To measure the standard of living at the house holds level. There is no other

variable, more relevant than the expenditure, per capita or per household. The important and common non-food items covered are; clothing, doctor, medicines, education, entertainment, post, religious functions and travel. One more index of per household' is also calculated for comparison purposes. The other items are purchased once in a month. Expenditure on the non- food items are reported to have been incurred once in six months, one year depending on the item. Thus all the items are finally brought to "annual consumption", (by suitable multiplication factors). For comparison purpose, all items are converted to the common deflator money (rupee).

Un- irrigated villages expenditure pattern differs from that of irrigated villages in that respect that proportion of expenditure on non -food items is more. But in absolute terms, the values are less. The ratio is big because the expenditure on food items is relatively less and expenditure on non- food items is minimum. The overall (averages) value of per consumption unit expenditure, per annum is Rs. 1121 (932 on food items and the remaining 189 on non-food items) in un-irrigated villages, while the corresponding figure of irrigated villages is Rs. 1716 (Rs. 1476 + Rs. 240 NF). Wheat replaces jowar to some extent in irrigated villages, that too in higher LHS. Intake of pulses is low and intake of egg, ghee, condiments is conspicuously absent in un-irrigated villages. Tea intake appears to be more in un- irrigated villages.

Living Conditions:

Data revealed that maximum number of families have two rooms (36%), closely followed by three rooms (35%) tenements. These houses include one living room. None of the houses have got latrine. All of them go out to the fields to attend to the natural calls as there are no public latrines constructed by panchayats. There are also 9 % of the sample households with single room.

Average is 2.40 rooms per family (irrespective of the size of the family). It can be observed that households with a family size of 'up to 4' are having just the average values. Thus the line of demarcation is drawn between families with 8 and above 8 members, for having the average (2.40) number of rooms of living accommodation. So far as the material used for constructing of roof of the houses, majority of the houses (16%) have used mud. Flooring is also done for majority of houses (35%) with mud. The walls, for majority of houses, are constructed by mud as they are strong and the maintenance cost is low. 18% households have reported wooden furniture like chairs, tables and benches.

References:

1. Rane, A.A., 1981, Poverty and Irrigation 77 pp. Productivity Journal, Vol. 7 –9, New Delhi.
2. Rao, V.M., 1979, Farming with Irrigation and Irrigated farming: A comparative study in impact of Irrigation by Tank, Well, Canal, Himalaya pub. Co., Bombay.
3. Rudra Ashok, 1968, Farm size and yield per acre, E.P.W. (Spl. No.) 3 (26-28), 1041 p.
4. Misra, G.P., Vivekananda, M., 1979, Impact of canal Irrigation in Rural Areas (Case of Bellary District) in Impact of Irrigation, Tank, Well, Canal, Himalaya Publishing Company, Bombay.
5. Narayan B.K., Vasudeva, Rao, D., Narayana Rao, D.K. 1978, Integrated Development Programme for M.P., G.P. Command Area (Memeograph), ISEC, Bangalore.

Study on Role of E-Commerce in Business

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Abstract: Information technology has the power to develop the industry and transform how business is run. Internet in business is used for information exchange, media promotion, electronic mail, mailing lists, dialogue, discussions, consulting with consumers online. There are two electronic commerce applications, namely: business-to-consumer and business-to-business commerce. Information technology has the power to develop the industry and transform how business is run. The main obstacle in the use of information technology is the enormous cost of making an online network and supplying devices the use of information technology plays an important role in trade and national economic growth to achieve public welfare.

Keywords: Information Technology, Commerce, Role, E-Commerce, E-Business, E-Business Transaction, Decision Making

Introduction

The Information Technology has developed dramatically during the recent decades. The use of microprocessors has led to the increasing computing power for teaching, learning, decreasing cost, etc. Laser disc technology, fiber optics, packet switching for the transfer of electronic data has all become a reality. The proliferation of large databases available for access over telephone lines and the increased use of computers and communication media as tools for management of information is a fact of life in the developed countries. This technology provides better services to users by means of transmitting data or messages in the various forms of written or printed records, electronic, audio or video signals and also plays an important role in information handling, i.e. reduction in computing time, capabilities of resource sharing, economic storage capabilities of the files on digital discs, use of TV for displaying information, telecommunication and satellite communication, facilities for networking, etc.

Trade through Electronic Networks

Some people define electronic commerce narrowly, namely trade, which only covers business transactions that relate to customers and suppliers. If a transaction remains within the company boundary, these people will call it an electronic business transaction. Limiting internal versus external transactions will not offer much help, because most people consider electronic business and electronic commerce to be the same thing.

Key Success Factors in E-Commerce

In many cases, an e-commerce company can survive not only on the strength of the product, but with a reliable management team, timely delivery, good service, good business organization structure, network infrastructure and security, website design good, several factors include:

Providing competitive prices Providing Feedback, fast and friendly purchasing services provide the complete and clear information about product and service Provide many bonuses point such as coupons, special offers, and discounts Give special attention such as the proposed purchase providing a sense of community for discussion,

Benefits of trading via electronic networks, namely:

Companies do e-commerce to achieve overall organizational improvement. This improvement is expected to be the result of the three main benefits that will contribute to the company's financial stability and enable it to compete better in the business world that applies computer technology. Online trading an act of buying & selling financial product thought an online trading platform this platform are normally provide by internet based brokers & are available to each & every person who wishes to try & make money from the market.

Benefits for the company

Job benefits are extra perks or incentive offered by a company over & above your salary. They can have a significant impact on employee engagement and retention. Company benefits very vast move to advance technology development business organization.

Benefits for consumers

Consumers can obtain information about products or services needed and transact in a fast and inexpensive way physically safe Consumers do not need to go to the store where the company sells its goods and this allows consumers to trade safely because in certain areas it may be very dangerous to drive and carry very large amounts of cash. Both from home, office, internet cafe or other places Student must know how IT careers are built and use effective career growth methods. The increasing number of products and services available for digital shipping and the increasing number of customers are able to overcome their reluctance to make purchases using the web. The faster speed of communication from home computers has also made the delivery of digital products more practical.

1. Digital Products

Certain products and services can be sent to consumers directly through the internet. Examples of digital products such as songs, movies, software Products and services can be directly consumed after downloading.

Ex. eBooks, software, web base application fonts, graphics & digital arts, design app template music, video, tickets

2. Physical Products

Certain products and services that cannot be directly consumed via the internet, Sales and payment orders can be received through the internet, after which they are sent to the buyer. All physical items such as game cartages whether or not currently in inventory that has ever been or was even sell physical product to goods.

4. Electronic Governance

The government can also benefit from e-commerce. Electronic government or e-government is the use of information technology by the government to provide information and E-government can be applied to the legislature, judiciary, or public administration, to improve efficiency internal, deliver public services, or democratic governance processes. The main delivery model is government-to-citizen or government to customer. Government to business (G2B) and government to government (G2G) the most expected advantage of e- government is increasing efficiency, comfort, and better accessibility of public services. The challenge for e-commerce is more than just the type of goods offered. Many customers are more comfortable using cellular phones than using computer keyboards.

5. Mobile Trade

Mobile trading to the referee trading in the stock market uses a Smartphone it is more advanced than traditional trading which don was thought a computer system. A user can buy & cell stock as manage his mobile phone.

DISCUSSION

Information technology has follow with the progress & development support of e-commerce technology Mobile banking online shopping.

Conclusion

The next e-commerce step is to run business-class wireless and mobile trading everywhere. The business to consumer strategy is a strategy that refers to transactions that occur between a business and the final consumer of the product. The basic difference between e-commerce and e-business is that the purpose of e- commerce is oriented to how to get profits, while e-business is oriented to long-term interests and abstract characteristics such as consumer trust, service to consumers, work rules, relations between business partners and handling other social problems. Aside from the differences between the two, it turns out that both of them also have the same goal of advancing the company into a larger company than before.

ACKNOWLEDGMENT

At last I thanks My PhD Guide for special helps to me this project without their helps this paper would not have been successful & discusses in related topic very deep & guideline for me new think advance level

REFERENCES

1. O'Connor, G., O'Keefe, B. Viewing the Web as a Marketplace: The Case of Small Companies, forthcoming in Decision Support Systems, 1997.
2. Jones, D., Nain-Chandra, D. Industry Net: a model for commerce on the World Wide Web, IEEE EXPERT, 1990, 10, No. 5, 54-59.
3. Loebbecke C. Content Providers Benefiting from Commerce on the Internet: Current Deficiencies, Proposed Solutions, and Foreseeable Business Trends, Fourth Strategic Information Systems Network (SISnet) Conference Proceedings, Lisbon, 1996.
4. cumitkillerz.blogspot.co.id/2011/03/menggunakan-teknologi-informasi-dalam-html?m=1
5. <http://journalakuntansi.petra.ac.id/index.php/aku/article/download/15673/15665>.
6. <https://kelompok32017.wordpress.com/2017/01/23/menggunakan-teknologi-informasi-dalam-menjalankan-perdagangan-elektronik-e-commerce/>
7. <http://download.portalgaruda.org/article.php?article=114863&val=5258>
8. <http://journalakuntansi.petra.ac.id/index.php/aku/article/download/15666/15658>

An Evaluation of Tourism Potential: A Case Study of Parner Tahsil, Ahmednagar Dist (MS)

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Abstract

Tourism has evolved into a popular worldwide pastime. If properly organised, tourism may make a significant contribution to long-term development, economic growth, and social benefits. It has been a significant thrust area in India over the past decade to address the aforementioned difficulties, to leverage its diverse range of destination resources, and to optimise the level of financial engagement for creating tourism infrastructure in a constrained economic domain. Given the availability of basic infrastructure and the variety of tourist themes offered by diverse Maharashtra sites, the tourism industry in Maharashtra has significant growth potential. Parner is a well-known city in Ahmednagar's southern region. Parner, near Ahmednagar, is around 40 to 42 kilometres from Ahmednagar and 70 kilometres from Pune. The purpose of this study is to uncover numerous determinants of the Parner Tahsil's tourist potential. Secondary data was collected as well as personal interviews with tourists who visited the Parner tahsil tourist attraction. Good accessibility, dining facilities, road and infrastructure amenities, and other entertainment facilities, among other things, have been found to draw a big number of tourists to Parner. Parner Tahsil has had potential tourism and economic growth in recent years.

Keywords: WTO, Tourism, Sustainable development, potential of growth.

Introduction

The Vedic Indians had a deep respect for nature and animal life, as well as the preservation of what nature had given us. The following Sanskrit mantra from the Atharvaveda is a perfect example of this love.' 1 Natural tourist destinations are rich in natural scenery and geological elements. It is characterised as a "ethical excursion to natural regions that conserves the environment while also improving the well-being of local people." As a result, ecotourism necessitates responsible travel in order to reduce ecological footprints and pass on the advantages of the trip to the locals. In its National Tourism Policy of 2002, the Indian government recognised the importance of eco-tourism. The Maharashtra government's forest department has followed suit. Bhandardara, Mula Dam, Kalsubai Pick, Nizarneshwar, Randha fall, Harishchandragad, Ratangad, Shri Hari Hareshwar Devastan, Vrudheshwar, Pengari, Nighoj, and Pravara Sangam-Toka are the natural tourism destinations chosen by the researcher.

India is a big country with a diverse range of villages, providing great opportunities for rural tourism. According to the 2001 Census, 74 percent of Indians live in 638,365 villages. The size of these settlements varies greatly. Most villages have their own temple, mosque, or church, demonstrating diversity while remaining united. Tourists are defined by the World Tourism Organization (WTO) as people who "travel to and remain in areas beyond their surroundings for not more than one year for leisure, business, or other objectives." Tourism is the world's fastest-growing sector and most popular leisure activity, creating job opportunities for locals. Tourism also boosts the economy and raises people's living standards (Shrivastava, 2011). There isn't much of a difference between tourism and travel; in fact, both terms are frequently used interchangeably. (Nanthakumar and colleagues, 2008) Maharashtra's tourism industry has enormous growth potential. The presence of basic infrastructure and the range of tourist schemes offered by various Maharashtra locations boosted tourism activity. (2003 Tourism Department Report) Tourism potential is a widely used and accepted term in the tourism industry, however it can lead to misunderstandings because potential refers to territorial capacities, which has a smaller scope. (2012, Mamun) The term "potential" can be substituted with "attractiveness," which clearly demonstrates the relationship between tourism demand and supply (Formica, 2000). However, some other studies use the term Potential, which might be interpreted as a synonym for Attractiveness. The Tahsil is crossed by the rivers Mula and Kukadi. The Malganga temple, which was built on the banks of the Kukadi, has made Nighoj and Takali Haji Village one of India's holiest destinations for Hindus.

2. MATERIALS AND METHODS

The current study focuses on identifying several determinants of Nighoj Village's tourism potential as well as evaluating the various facilities.

2.1 Study Area

The Parner Tahsil is located between 19°00'18" North latitude and 74°26'34" East longitude in the Ahmednagar District of western Maharashtra. Ahmednagar (40 km) and Pune (80 km) are both accessible by road (70 km). Onion and pomegranate farming are highly popular in Parner tahsil. Because of its

magnificent surroundings and cool, peaceful, agreeable temperature, the tahsil has become a popular tourist destination. Because of its mythical, historical, social, and cultural significance, Parner has its own individuality. On the industrial, political, social, and cultural fronts, the village is alive and well. Many renowned individuals, including Maharshi Parashar, Semapati Bapat, and Anna Hazare, were born in Parner Tahsil.

2.2 Methodology

One of the most crucial aspects of analysis is methodology. The methodology that will be employed for data processing or analysis will have a significant impact on the output or result of the analysis. The following approach will be used:-

Step -I Primary data will be gathered, as well as an extensive literature review of the research issue. Various libraries, institutes, and government offices will be contacted for published material and reports. Aside from this, pertinent literature such as reference books, bulletins, and reviews will be received over the Internet.

Step –II Several locations were identified as having determinants of the Nighoj's tourism potential. Accessibility, health facilities, road and infrastructural amenities, and other leisure facilities are only a few examples.

Step –II The tourism potential of Nighoj Village was assessed using health, education, and entertainment facilities, among other things.

Results And Discussion

The tourism potential of Nighoj is in excellent shape.

3.1 Tourist Place in the Parner Tahsil

Shiddheshwar, Korthan Khandoba, Ralegan Shiddhi, Nighoj Pot Holes, Chincholi, Karandi, Ganesh Khind, Jamgaon, Takali Dhokeshawar (Dhoki), Palashi, Vadgaon Darya, and other well-known tourist destinations were located throughout the Parner Tahsil.

3.2 Special Events and Festivals

The four-day Malaganga yatra in Nighoj is by far the most stunning of all the festivities. The goddess Malganga's famed Rath Yatra, This Rath Yatra attracts a large number of hindus who pull the Rath by hand. In the month of Navratri, a fair is held near the Ambika Devi Temple in Devbhyore. People assemble to worship the goddess Ambika and commemorate Maa Durga's victory over Maheshasur, as well as God Ram's victory over Ravana. During the month of February, on the celebration of Shivratri, a similar type of cuisine occurs near Siddheswar temple.

3.3 Nearest Tourist Place of Parner

Near Parner city, there were numerous well-known tourist destinations. Shiddheshwar is a Hindu shrine located around 2 kilometres from Parner. Ganesh Khind is located 65 kilometres from Nashik and is known for its Ganesh Mandir. Renuka Mata Mandir, located 5 kilometres outside of Chandvad city, is well-known. The well-known Ralegan Shidhi was located 10 kilometres outside of Parner. Korthan is a well-known hill station, with Parner having the maximum rainfall. Parner city⁷ is approximately 35 kilometres distant from Korthan. To the west, Nighoj is 25 kilometres away, and to the north, Shirur is 24 kilometres. The naturally formed potholes on the road in this area are famous. The naturally formed potholes on the riverbed of the Kukadi are notable in this village. Every year, scientists from all around the world come to examine the phenomenon of their development. It is reported that many years ago, there was a lot of rain in this area, and the River Ghod flooded with such power from the gorge-like structure that erosion of the rocks took place, resulting in the construction of these potholes.

3.4 Accessibility

Parner is well connected to Maharashtra's major cities, including Mumbai, Pune, and Ahmednagar, by state highways such as Parner – Supa, Bhalawani, Shirur, and Alkuti. Ahmednagar Railway Station is the closest railway station to Parner, while the nearest airport is Pune's Chhatrapati Sambhaji Maharaj International Airport, which is 70 kilometres distant.

3.5 Education Facility

The Bombay Provincial Municipal Corporation Act 1949 mandates the provision of basic education for the welfare of the poor. In the tahsil, there are 450 primary schools and 82 secondary schools, with a total student population of 34367 in primary schools and 8685 in high schools. In addition, the education department operates 171 "Anganwadi" pre-primary education centres for children under the age of five. Apart from that, the tahsil of Parner had senior colleges, engineering institutions, agricultural colleges, and so forth.

3.6 Health Facility

Our health department has 7 primary health facilities, 41 sub centres, and 114 private hospitals to provide health services to the impoverished areas. These hospitals are equipped with the ability to treat significant illnesses among low-income citizens. In addition, the government operates primary health centres in 49 different places around the tahsil. Aside from that, there were a number of private hospitals scattered around the tahsil.

3.7 Social Infrastructure (Entertainment Facility)

3.7.1 Sport Complex

In the Parner area, the Parner Tahsil Sport Department has built a sports complex including an indoor stadium, cricket pitch, football, badminton, and volleyball courts.

3.7.2 Recreational Park

A full-fledged leisure park in the name of Vadgaon Darya, Nighoj, has been established for the enjoyment of inhabitants and tourists. A large garden is available for use at this recreation complex. Two large exposition halls, a little auditorium, and a food mall have been built in these settlements.

3.7.3 Drama Theater / Town Hall

Various trusts in Nighoj, Korthan, and Ralegaon Shiddhi have built a full-fledged hall with a seating capacity of 1000. These make it easier for citizens to participate in cultural, social, and recreational activities. There are two other Town Halls, one in the Korthan region with a seating capacity of 5000 and the other in the Palashi district with a seating capacity of 500. In the Ralegaon Shiddhi neighbourhood, a mini auditorium with a seating capacity of 250 has also been built.

3.7.4 Community Centers, Gymnasiums, Jogging Tracks

The local trust has built 10 Community Centers, 7 Gymnasiums, and 3 Jogging Tracks for day-to-day cultural and social activities in various parts of the city.

3.7.5 Library & Study Rooms

A local trust has built a number of study rooms to help students from the underprivileged neighbourhood, as well as the lower and middle classes of society. The Malganga Trust in Nighoj, the Hind Seva Trust in Ralegaon Shiddhi, and three other locations have built such libraries. The library is available in these study rooms. In the entire tahsil, there are a total of 9 study rooms.

3.7.6 Gardens

There are a total of 5 tiny gardens built in various locations throughout the tahsil. There are also large gardens for recreational activities, such as the ones listed below — 1) Nageshwar Garden, Parner, 2) Korthan Kandoba, Pimpalgaon Rotha, 3) Ralegaon Shiddhi, 4) Vaogaon Darya, 5) Nageshwar Garden, Pimpalgaon Rotha

3.7.7 Sanitation and Toilet Facilities

The tahsil local trust has built public toilets and urinals for the benefit of some residents and the urban poor.

- 1) Total No. of toilets sheets constructed by trust – 50 no.
- 2) Sulabh Type Toilets on non-payment basis – 10 blocks
- 3) Urinals – 40 seat.

3.7.8 Other Local Infrastructure

Entertainment, Telephone, Internet, Post Office, Civic Amenities, Eating Joints, Medical, Travel Agents, Taxi Operators, ATMs, and other services are available in the Parner tahsil.

Conclusion

Kanhhya Milk Pvt. Ltd. Co. Nighoj, Dere Farm, Alkuti, Supa MIDC, and other industrial giants are located in Parner tahsil, as are many other significant tahsils in Ahmednagar. Parner is also a good educational centre, having institutions in the arts, commerce, science, pharmaceuticals, and agriculture. In addition, PARner is well-known for its pomegranate and onion production. As a result, employment is not overly reliant on tourism, particularly in Parner Tahsil. Apart from the busy industrial and tourism activity, PARner will remain a tranquil, clean, green, and aesthetic cultural hub.

References

1. Abdulla Al Mamun, Soumen Mitra. "A Methodology for Assessing Tourism Potential: Case Study Murshidabad District, West Bengal, India", *International Journal of Scientific and Research Publications*, 2:9 (2012) 1-8.
2. H. Effat and M.N.Hegazy, "Cartographic Modeling and Multi Criteria Evaluation for Exploring the Potentials for Tourism Development in the Suez Governorate, Egypt", *Environmental Issues, Sustainable Development, Millennium Development Goals*, pp-11-18

3. M. Constantin, C. Daniela-Luminia, G. Mihaela, "Tourism Potential and the Diminishing of Regional Disparities in Romania", *economy-and-business-administration* volume /2009 /v2- pp-151-155.
4. S. Formica "Destination Attractiveness as a Function of Supply And Demand Interaction", A PhD Dissertation submitted to the Faculty of the Virginia Polytechnic Institute (2000),
5. Surabhi Shrivastava (2011) Economic potential of tourism: A case study of Agra, *Tourismos*, Vol. 6, No. 2, pp 139-158.
6. Nanthakumar, L., Ibrahim, Y. & Harun, M.(2008). Tourism development policy, strategic alliances and impact of consumer price index on tourist arrivals: The case of Malaysia. *Tourismos*, Vol. 3, No.1,pp.83-98.
7. <file:///C:/Users/Geography/Downloads/2.pdf>
8. https://www.researchgate.net/publication/306373046_An_Assessment_of_Tourism_Potential_A_Case_Study_of_Nashik_City_Maharashtra

Protection of Carbosulfan Induced Changes in the Ascorbic Acid Content of Freshwater Bivalve, *Lamellidens marginalis* by L-Ascorbic Acid

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Abstract: *Lamellidens marginalis*, freshwater bivalves, were exposed to chronic dose of carbosulfan with and without ascorbic acid. The amount of ascorbic acid in the gills, gonads, digestive glands, mantle, and whole-body mass was calculated. In carbosulfanexposed bivalves, the content of ascorbic acid was found to be much lower than in control bivalves. Pesticide plus ascorbic acid exposed groups had higher levels of ascorbic acid in selected tissues than pesticide exposed groups. Bivalves that had been pre-exposed to pesticide recovered quickly and had higher ascorbic acid levels than those that were allowed to cure naturally.

Key Words: Carbosulfan, *Lamellidens marginalis*, ascorbic acid, chronic exposure.

Introduction:

The use of chemicals of high biological activity been increased for pest control. Pesticides have benefited humanity much by raising food production and decreasing disease vectors in humans and animals. At the same time, the usage of these pesticides has the potential to harm health of aquatic species. Because of their toxicity, persistence, and tendency to accumulate in organisms, pesticides are a major cause of concern for the aquatic environment (Olea and Fernandez, 2007; Joseph and Raj, 2010). Many pesticides are known oxidative stress inducers because they directly produce reactive oxygen species (ROS) and obstruct the natural antioxidants or oxygen free radical scavenging enzyme system (Geter et al., 2008; El-Gendy et al., 2010). The ROS have a strong reactivity and can potentially interact with all other cellular components (lipids, proteins, DNA) and disable them (Manduzio et al., 2005; Gwozdziński et al., 2010). To counteract oxidative damage, all aerobic organisms have a network of antioxidants and enzymes that minimize the effects of ROS. The creation and elimination of oxygen radicals coexist in a weak balance. When this balance shifts in favour of the ROS, oxidative stress occurs. By catalysing the generation of reactive oxygen species (ROS), xenobiotics may be able to affect this balance. ROS create new radical species thus, causing oxidations in chain. Such an effect may be at cellular or molecular level but ultimately it would lead to physiological, pathological and biochemical disorders that may prove fatal to the organism (Jain and Kulshrtha, 2000). The present study investigates the propensity of carbosulfan induced variation in ascorbic acid level and its possible mitigation by vitamin C in a convenient model, the fresh water bivalve, *Lamellidens marginalis* after chronic exposure. On these model animals, several basic processes of pesticide mode of action can be examined, which can be applied to other higher species. Vital organs like gills, gonads, digestive glands, mantle and whole-body mass are used to determine the changes in ascorbic acid content on exposure to carbosulfan and its subsequent recovery in presence of ascorbic acid.

The water-soluble vitamin L-ascorbic acid (C₆H₈O₆) is essential for the production of collagen, carnitine, and neurotransmitters. Antioxidant, anti-atherogenic, anti-carcinogenic, immunomodulator, and cold prevention are just a few of the health benefits of ascorbic acid (Naidu, 2003). Ascorbic acid is involved in the creation of collagen and bone, as well as wound healing (Gould, 1963). According to Chinoy and Seethalakshmi (1977), ascorbic acid plays an important function in steroidogenesis in molluscs. Free radical scavengers like glutathione, ascorbic acid, and -tocopherol, as well as antioxidant enzymes, can help to reduce ROS toxicity (Gwozdziński et al., 2010). These antioxidant mechanisms allow chain reactions to be halted and free radicals to be destroyed. The recovery of ascorbic acid contents by ascorbic acid protects the freshwater bivalve *Lamellidens marginalis* from carbosulfan toxicity. Many researchers had studied the effect of L-ascorbic acid supplementation on toxicant induced alterations in biochemical constituents of aquatic animals (Chinoy et al., 1995; Mahajan and Zambare, 2006; Mahanada et al., 2010; Kamble et al., 2011; Deshmukh, 2012; Waykar and Pulate, 2012)

Materials and Methods:

Medium sized, healthy, fresh water bivalve, *Lamellidens marginalis* were collected from Girna dam, 48 km away from Chalisgaon Dist. Jalgaon (M.S.). Animals were brought into the lab and acclimatised to dechlorinated tap water for a week. For the experiment, medium-sized animals were chosen.

Experimental design:

Set – I

For experimental studies the animals were divided into three groups–

- a) Group ‘A’ was maintained as control.
- b) Group ‘B’ animals were exposed to chronic dose of carbosulfan (0.5564 ppm, LC_{50/10} of 96 hours) upto 21 days.
- c) Group ‘C’ animals were exposed to chronic dose of carbosulfan (0.5564 ppm, LC_{50/10} of 96 hours) along with 50 mg/l of L-ascorbic acid.

Experimental design for recovery studies:

Set – II

Group ‘B’ animals from set-I after 21 days exposure to carbosulfan were divided into two groups for recovery studies.

Animals pre-exposed to chronic dose of carbosulfan (0.5564 ppm) were allowed to self-cure in normal fresh water upto 21 days.

Animals pre-exposed to chronic dose of carbosulfan (0.5564 ppm) were allowed to cure in 50 mg/l of L-ascorbic acid added fresh water upto 21 days.

Freshwater algae were provided to the animals during the trial. Animals from sets I and II were dissected and tissues such as digestive glands, gills, gonads, and mantle were separated and complete body mass was dried at 80⁰ C in an oven until constant weights were achieved and blended into dry powder after every 7th, 14th, and 21st days interval. These powders were used for the estimation of ascorbic acid contents. Ascorbic acid estimation was carried out by the method of Roe (1967) by using hydrazine reagent.

Table No. 1. Total ascorbic acid content in different soft body tissues of *Lamellidens marginalis* after chronic exposure to carbosulfan without and with ascorbic acid.

Sr. No	Tissue	Control (A)			Carbosulfan (B)			Carbosulfan + A.A. (50 mg/l) (C)		
		7 days	14 days	21 days	7 days	14 days	21 days	7 days	14 days	21 days
	Mantle	0.924 5 ±1.8 4	0.9228 ±1.28	0.9180 ±1.52	0.6675* * ±0.89 (-27.80)	0.6327* ±1.15 (-31.44)	0.5042** ±1.27 (-45.08)	0.7289* * ±1.47 (-21.16)	0.6735* ±0.94 (-27.01)	0.5916** ±1.55 (-35.56)
	Gills	1.168 6 ±1.6 5	1.1536 ±1.82	1.1477 ±1.25	0.8477* ±1.16 (-27.46)	0.7124** ±1.51 (-38.24)	0.5645** * ±1.31 (-50.81)	0.8944* ** ±1.21 (-23.46)	0.8377* ±1.83 (-27.38)	0.7722** ±1.66 (-37.94)
	Digestive glands	1.481 7 ±1.5 9	1.4284 ±1.93	1.4268 ±1.55	0.9841* * ±1.44 (-33.58)	0.7816** * ±1.84 (-45.28)	0.5833** * ±1.42 (-59.12)	1.0925* * ±1.75 (-26.27)	0.9122** * ±1.78 (-36.14)	0.7911* ±1.04 (-44.55)
	Gonad	1.325 6 ±1.2 7	1.3245 ±1.61	1.3159 ±1.76	0.9477* ±1.79 (-28.51)	0.7864** ±1.92 (-40.63)	0.7582** ±1.13 (-42.38)	0.9843* ** ±1.25 (-25.75)	0.8915** ±1.63 (-32.69)	0.8651** * ±1.17 (-34.26)
	Whole soft body	0.968 8 ±1.0 7	0.9450 ±1.18	0.9385 ±1.46	0.7324* ** ±1.08 (-24.40)	0.6125* ±1.77 (-35.18)	0.4865** * ±1.31 (-48.16)	0.7763* ±1.98 (-19.87)	0.6458** ±1.74 (-31.66)	0.5766** ±1.65 (-38.56)

1. Values expressed as mg/100mg dry wt. of tissue
2. (+) or (-) indicate percent variation over control
3. ± indicate S.D. of three observation
4. Values are significant at *P<0.001, **P<0.01, ***P<0.05
5. NS (Not significant)

Table No. 2. Total ascorbic acid content in different soft body tissues of *Lamellidens marginalis* after chronic exposure to Carbosulfan and its subsequent recovery.

Sr. No.	Tissue	Carbosulfan	Recovery in normal water			Recovery in A.A. (50 mg/l)		
			21 days	7 days	14 days	21 days	7 days	14 days
1	Mantle	0.5042 (-45.08)	0.5407* ±1.73 (+7.24)	0.5579* * ±1.48 (+10.65)	0.6145** ±1.61 (+21.88)	0.6078*** ±1.13 (+20.55)	0.7195** ±1.51 (+42.70)	0.8512*** ±1.55 (+68.82)
3	Gills	0.5645 (-50.81)	0.6495* * ±1.35 (+15.06)	0.6854* * ±1.87 (+21.42)	0.7659*** ±1.91 (+35.68)	0.7579** ±1.53 (+34.26)	0.8419*** ±1.81 (+49.14)	1.0945*** ±1.41 (+93.89)
4	Digestive glands	0.5833 (-59.12)	0.6494* ±1.29 (+11.33)	0.6835* * ±1.19 (+17.18)	0.7412* ±1.68 (+27.07)	0.7385** ±1.35 (+26.61)	0.8365** ±1.73 (+43.41)	1.0687*** ±1.99 (+83.22)
5	Gonad	0.7582 (-42.38)	0.8016* * ±1.21 (+5.72)	0.8456* * ±1.88 (+11.53)	0.8973*** ±1.72 (+18.35)	0.8879*** ±1.78 (+17.11)	1.0574*** ±1.95 (+39.46)	1.2454* ±0.96 (+64.26)
6	Whole soft body	0.4865 (-48.16)	0.5274* ±2.01 (+8.41)	0.5913* ±1.12 (+21.54)	0.6773** ±1.43 (+39.22)	0.6671*** ±1.88 (+37.12)	0.7125** ±1.59 (+46.45)	0.8526* ±1.17 (+75.25)

1. Values expressed as mg/100mg dry wt. of tissue
2. (+) or (-) indicate percent variation over control
3. ± indicate S.D. of three observations
4. Values are significant at * $P < 0.001$, ** $P < 0.01$, *** $P < 0.05$
5. NS (Not significant)

Fig. 1. Profiles of ascorbic acid content in different tissues after chronic exposure to carbosulfan without and with ascorbic acid.

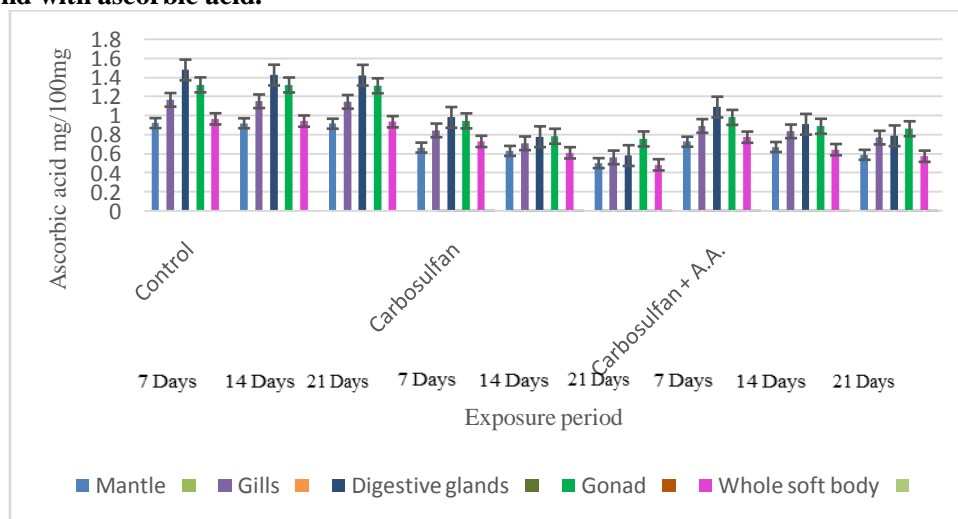
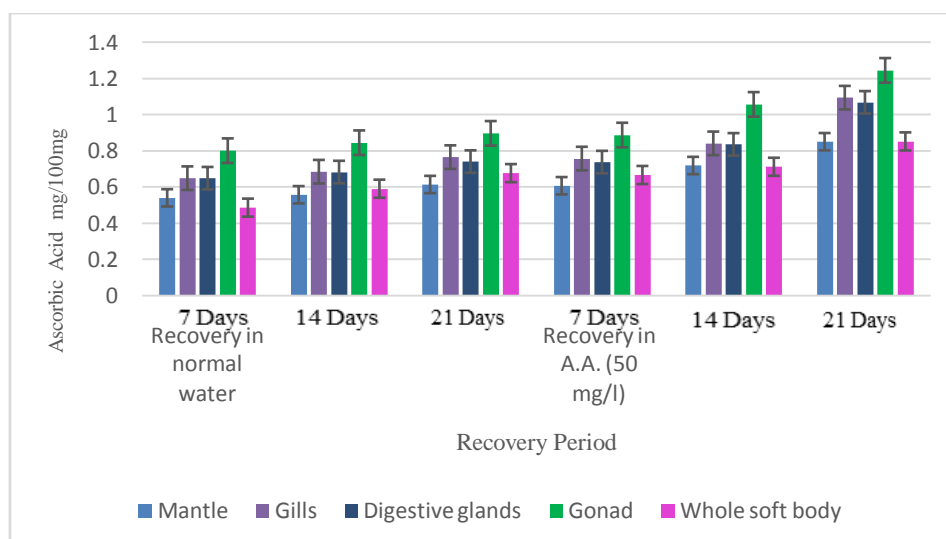


Fig. 2. Profiles of ascorbic acid content in different tissues after chronic exposure to Carbosulfan and its subsequent recovery.



Results and Discussion:

Biochemical estimation of ascorbic acid contents was determined from the different tissues i.e. mantle, gills, digestive glands, gonads and whole soft body tissues of experimental model, the freshwater bivalve *Lamellidens marginalis* from control and experimental groups and obtained results are presented in table nos. 1 and 2.

Table No. 1 and 2 indicates changes in ascorbic acid levels of mantle, gills, digestive glands, gonads and whole soft body of *Lamellidens marginalis* on chronic exposure to carbosulfan (0.5564 ppm) without and with ascorbic acid and during recovery. It is noticed that ascorbic acid contents were significantly reduced after carbosulfan exposure in all tissues of the bivalves as compared to control. Bivalves exposed to carbosulfan with ascorbic acid showed fewer alterations in the ascorbic acid contents showing the protective role of the ascorbic acid. The results also demonstrate that there was progressive decrease in the ascorbic acid contents as exposure period was increased.

When the bivalves exposed for 21 days to carbosulfan were allowed to recover, ascorbic acid recovery was at a very slow rate in naturally curing bivalves. Ascorbic acid contents recovered faster during 21 days in all tissues in ascorbic acid and the comparative rate of recovery was better in ascorbic acid. The comparative tabulated results represent increased or decreased levels of Ascorbic acid in respective tissues during treatment and recovery period.

After chronic exposure to carbosulfan, depletion of ascorbic acid levels was detected in the mantle, gills, digestive glands, gonads, and whole soft body tissues of the experimental freshwater bivalve, as compared to bivalves maintained as controls. The findings of Jadhav et al. (1996), Padmaja and Reddy (1998), Waykar and Lomte (2001 and 2004) and Borane (2006) are in agreement with this.

There was a decrease in the content of ascorbic acid in various soft body tissues of the experimental bivalve species, which could be due to its role in detoxification or impairment in its synthesis (Waykar et al., 2001), repairing tissue injuries, and coping with pesticide-induced toxic stress. This also shows that the use of ascorbic acid in response to pesticide stress increases the demand for energy. The decrease in ascorbic acid content indicated that it was involved in oxidative damage prevention. As far as present work is concerned, decrease in ascorbic acid content in different tissues of *Lamellidens marginalis* might be due to its involvement in detoxification and repairing of injuries in tissues which occurred due to pesticide stress.

In this study, it was observed that when pesticide was coupled with 50mg/l of L-ascorbic acid, the ascorbic acid level was higher than when pesticides were used alone. Thus, use of L-ascorbic acid protects tissues from oxidative damage caused by pesticides. Several other researchers observed the effect of ascorbic acid in protecting against pesticide-induced ascorbic acid depletion (Mahajan and Zambare, 2006 and Mahajan, 2007).

Vitamin ascorbic acid is an antioxidant. It has a critical role as an antioxidant in tissues, protecting them from oxidative damage. Ascorbic acid's antioxidant properties aid in the prevention of free radical production from water soluble compounds, which can lead to cellular damage and illnesses. Vitamin C has been demonstrated to play a critical role in corticosteroid hydroxylation, oxygenation, and oxidation (Chatterjee, 1967). Ascorbic acid's role in illness and tissue repair is well understood (Halver 1972). Ascorbic acid is therefore perfect for the detoxification of pesticides from animal bodies.

References:

1. **Borane, Vijay R. (2006):** Protective role of Ascorbic acid on the lead chloride induced alterations in the Ascorbic Acid contents of the fresh water fish, *Channa orientalis* (Schneider). Central European Journal of Experimental Biology, 2013, 2 (4):34-37.
2. **Chatterjee, G.G. (1967):** Effect of ascorbic acid deficiency in animals. In: The vitamins. Eds Sebrell, W.H. Jr. and Harris, R.S. Vol. I, Chemistry, Physiology, Pathology methods, Academic Press, New York. Pp. 407-485.
3. **Chinoy, N.J. and Seethalakshmi, L. (1977):** Biochemical evidence for the occurrence of a possible steroidal mechanism in the reproductive organs of slugs (*Laevicaulisalte*). In : Advances in invertebrate reproduction, Vol. 1 eds. K.G. Adiyodi and R.G. Adiyodi, Peralam. Kanoth, Kerala, India., 356-366.
4. **Chinoy, N.J., Narayana, M.V., Dalal, V., Rawat, M. and Patel, D. (1995):** Amelioration of fluoride toxicity in some accessory reproductive glands and spermatozoa of rat. Fluoride, Vol.28 (2);75-86.
5. **Deshmukh, Shrikant (2012):** Effect of L- ascorbic acid on copper induced alterations in protein, ascorbic acid and DNA content of freshwater bivalve, *Indonaia caeruleus*. National Journal of Life Sciences, 9(11); 37-41.
6. **El-Gendy, K.S., Aly, N.M., Mahmoud, F.H., Kenawy, A. and El- Sebae, A.K.H. (2010):** The role of vitamin C as antioxidant in protection against endogenous oxidative DNA damage in human sperm. Proc. Natl. Acad. Sci. USA., 88; 11003-11006.
7. **Geter, D.R., Kan, H.L., Lowe, E.R., Rick, D.L., Charles, G.D., Gollapudi, B.B. and Mattsson, J.L. (2008):** Investigations of oxidative stress, antioxidant response and protein binding in chlorpyrifos exposed rat neuronal PC12 cells. Toxicol. Mech. Methods. 18; 17-23.
8. **Gould, B.S. (1963):** In: Directed Biosynthesis, Nauka, Moscow.
9. **Gwozdziński, Krzysztof, Gonciarz, M., Kilanczyk, E. Kowalczyk, A., Pieniązek, A. and Brichon, G. (2010):** Antioxidant enzyme activities and lipid peroxidation in *Mytilus galloprovincialis* from the French Mediterranean coast. International Journal of Oceanography and hydrobiology, 34(4); 33-43.
10. **Halver, J.E. (1972):** The role of ascorbic acid in fish disease and tissue repair. Bull. Jap. Soc. Sci. Fisheries. 35(1); 79-92.
11. **Jadhav, S., Sontakke, Y.B. and Lomte, V.S. (1996):** Effect of carbaryl on ascorbic acid content in the selected tissues of *Corbicula striatella*. J. Ecotoxicology. Env. Monit. 6(2): 109-112.
12. **Jain, M. and Kulshrestha, K. (2000):** Effect of pesticides on fishes. A review of recent studies in India J. National. 7(2); 14-1188.
13. **Joseph, B. and Raj S.J. (2010):** Effect of curacron toxicity on the total serum protein content of *Cyprinus carpio*. Toxicol. Environ. Chem., 92; 1889-1893.
14. **Mahajan, S. S. (2007):** Ascorbate effect on certain Heavy metal induced physiological alteration in the freshwater bivalve, *Lamellidens marginalis* (Lamarck). Ph. D. Thesis submitted to North Maharashtra University, Jalgon. (M. S.), India.
15. **Mahajan, S.S. and Zambare, S.P. (2006):** Effect of L-ascorbic acid supplementation on arsenic induced alterations in the ascorbic acid levels of an experimental model, *Lamellidens marginalis* (Lamarck). J. Aqua. Biol., 21(2); 222-227.
16. **Mahananda, M.R., Behera, N.R. and Mohanty, B.P. (2010):** Protective efficacy of L-ascorbic acid against the toxicity of mercury in *Labeorohita* (Hamilton). The Bioscan, 3; 681-690.
17. **Manduzio, H., Rocher, B., Durand, F., Galap, C. and Leboulenger, F. (2005):** The point about oxidative stress in mollusks. ISJ., 2; 91-104.
18. **Naidu, K.A. (2003):** Vitamin C in human health and disease is still a mystery? An overview. Nutrition journal, 2; 7.
19. **Olea, N and Fernandez, M.F. (2007):** Chemicals in the environment and human male fertility. Occup. Environ. Med., 64; 430-431.
20. **Padmaja, N.C. and Reddy, P.U.M. (1998):** Ascorbic acid status in certain selective tissues of a fresh water fish, *Anabas testudineus* during exposure and recovery to chromium toxicity. J. Ecotoxic. Environ. Monit., 8; 225-228.
21. Roe (1967)
22. **Waykar Bhalchandra and Lomte, V.S. (2004):** Carbaryl induced changes in the ascorbic acid content in different tissues of fresh water bivalve, *Parreysia cylindrica*. Asian Jr. of Microbiol. Biotech. Env. Sci., 6(3);181-189.

Multicomponent Approach in Synthesis of Cinnamamides using Boric Acid as a Versatile Catalyst

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Abstract: The synthesis of amide derivatives of cinnamic acid has been described using a simple multi-component reaction (MCR) involving aldehydes, amines and Meldrum's acid using boric acid as catalyst. The reaction takes place under simple operating conditions. The reaction is simple and there is no requirement of other reagent, which are required for the preparation of amides by conventional procedures. The present reaction is more affordable also there is no generation of unwanted chemical by-products that are generally resulting of the use of coupling reagents, oxidants, or catalysts.

Keywords: Multi-component reaction (MCR), catalysts, simple operating conditions, conventional procedures etc.

Introduction:

A functional group with a carbonyl group attached to a nitrogen atom is known as an amides. Amides are generally prepared by the reaction of carboxylic acid with an amine. Amides can be utilised to make structural materials that are both strong and durable (e.g., nylon, Kevlar). An important organic solvent is dimethylformamide. Amido acids are produced by plants for a variety of reasons. Amide derivatives of cinnamic acid which are also called as cinnamamides are a vital class of compounds that has wide range of biological potentials (**Figure. 1., Compounds A-H**)¹⁻⁹. Piper amide and other diversified natural compounds are found to contain cinnamamides as a important core¹⁰. In the field of medicinal chemistry, a great number of cinnamamides with a wide structural variety have been synthesised to investigate the structure-activity relationship⁹.

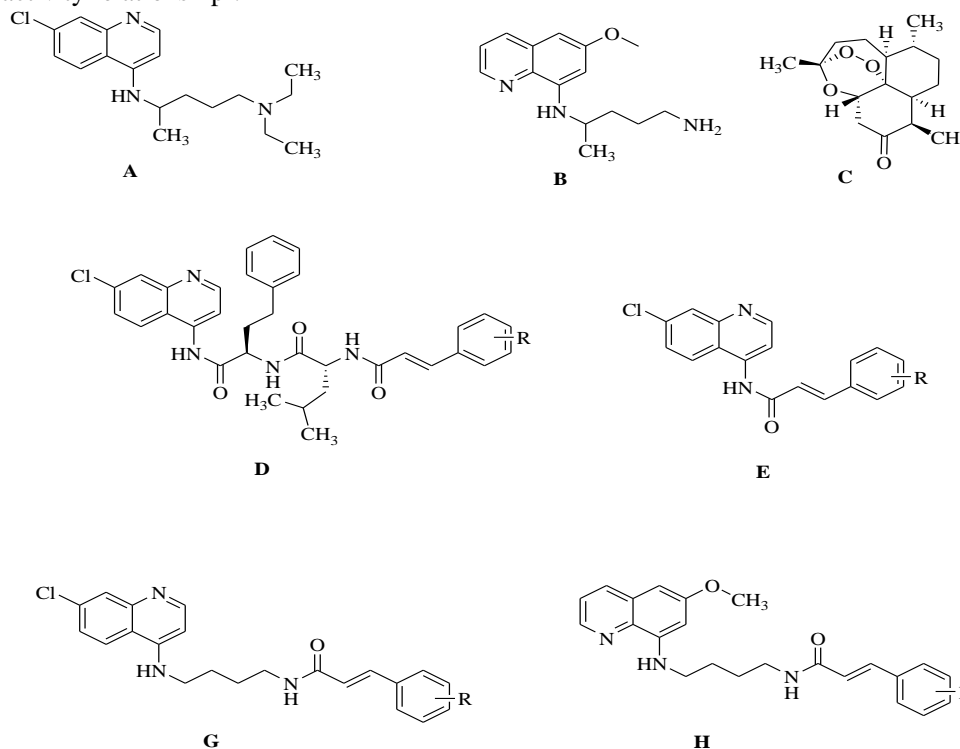
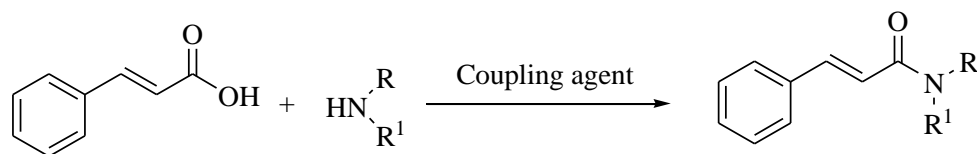


Figure.1. Structures of biologically potential cinnamamide derivatives chloroquine (A), primaquine (B), artemisinin (C), first- (D and E) and second- (G and H) generation heterocycle-cinnamic acids.

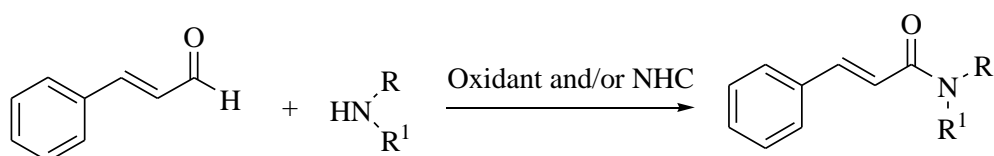
The coupling reaction of cinnamic acid derivatives, which are generated via the Knoevenagel condensation of aromatic aldehydes and malonic acid, is used to make cinnamamides (Scheme 1)¹¹⁻¹⁵



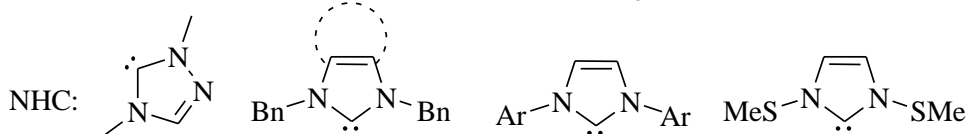
Coupling agent-SOCl₂, (COCl)₂, HOBT, EDC,
BOP, BBDI, PPh₃/NCBT etc.

Scheme 1. Knoevenagel condensation of aromatic aldehydes and malonic acid for the synthesis of cinnamamides.

Another method for making cinnamamides is oxidative amidation of cinnamaldehydes (Scheme 2)¹⁶⁻²².

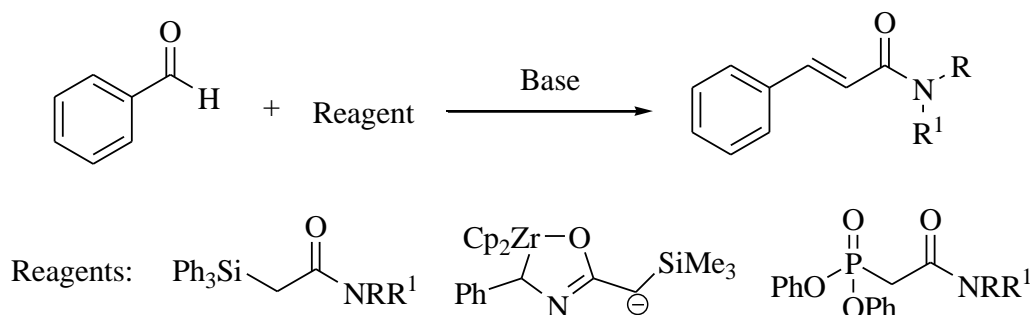


Oxidant: Ph(OAc)₂/NaHSO₄, TEMPO, FeCl₃, I₂, O₂ etc.



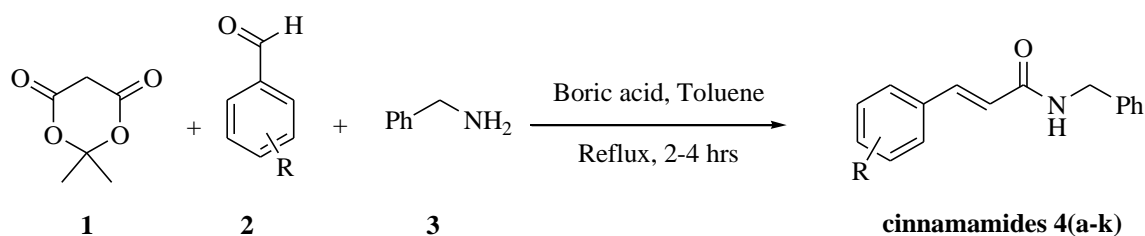
Scheme 2. Synthesis of cinnamamides by oxidative amidation of cinnamaldehydes.

For the synthesis of cinnamamides from aromatic aldehydes, Wittig or Horner–Wadsworth–Emmons reactions were also utilised (Scheme 3)²³⁻²⁶.



Scheme 3. Synthesis of cinnamamides from aromatic aldehydes

Considering the approaches revealed by the literature survey, it is concluded that the mainstream of the approaches for the synthesis of cinnamamides, deal with multistep which result into several unwanted side products. The coupling agents, oxidants, and phosphine-based reagents have many disadvantages like use of hazardous reagents, harsh reaction condition, elevated temperature etc. Hence there is need to develop new strategy for the synthesis of cinnamamides. The present study describes boric acid as simple catalyst for the synthesis of cinnamamides by the multi-component reaction of Meldrum's acid (1) with aldehyde (2) and amines (3) (Scheme 4). We are surprised for the activity of boric acid as catalyst and hence it is applied for the synthesis of various amide derivatives of cinnamic acids using diversified aldehydes and amines.



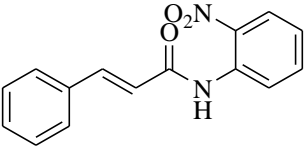
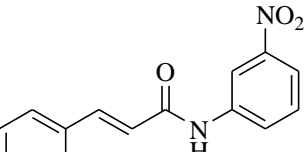
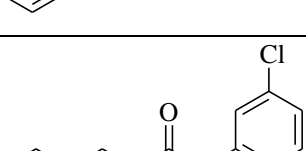
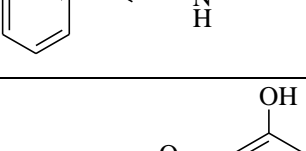
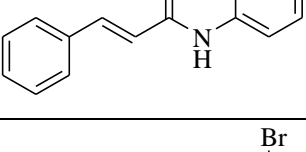
Scheme 3. Synthesis of cinnamamides from aromatic aldehydes, amines and Meldrum's acid.

Result and Discussion:

Different reactions were performed using different aldehydes (2) and amines (3) using Meldrum's acid and our current catalyst (**Scheme 3**). Boric acid was initially applied as catalyst in toluene as a solvent and reflux condition. The time required for reaction to complete was stated in Table 1.

Table 1. Synthesis of different cinnamamides

Entry	Product	Reaction time (h)	Yield (%)
4a		2.2	88
4b		3	92
4c		3.2	78
4d		3.6	83
4e		4	80
4f		2.7	85

4g		2.5	87
4h		3	90
4i		3.6	84
4j		3.1	82
4k		3.4	78

Conclusion:

We are able to create an innovative multi-component reaction using aldehydes, amines, and Meldrum's acid to produce a wide range of cinnamamides with extremely excellent yields that outperform most other approaches. The process allows the production of cinnamamides without the need of unwanted chemical waste-producing coupling reagents, oxidants, or catalysts. The process is atom-efficient, admirable yielding and no by-products. We anticipate that this process will have a wide range of applications, including the quick synthesis of a library of significant cinnamamides.

Experimental:

Materials and methods:

Merck provided high-purity chemical reagents, which were employed without additional purification. Open capillaries were employed to determine melting points, which were utilised without correction. Thin-layer chromatography was used to monitor the reactions, which was done with commercially manufactured 60-mesh silica gel plates and visualised with short wavelength UV light.

General procedure for the synthesis of cinnamamides (4a-k):

To a solution of aldehydes (2 mmol) and amines (2 mmol), Meldrum's acid (2 mmol) was added with constant stirring. Then to it 5 ml toluene and catalytic amount of boric acid was added and reaction was refluxed for prescribed time to get cinnamamides. The reaction mixture was then further extracted twice by 5 ml ethyl acetate and dried to yield cinnamamides.

Spectral data of representative compound:

(4a) N-Phenylcinnamamide-

88% yield

¹H NMR (CDCl₃, 300 MHz, 298 K) δ (ppm): 10.05 (s, 1H, -NH), 7.88 (m, 10H, Ar-H), 7.75 (d, 1H, J = 15.6 Hz, CH=CH), 6.85 (d, 1H, J = 15.6 Hz, CH=CH).

¹³C NMR (300 MHz, CDCl₃): 165.86 (C=O), 141.54 (Ar-CH=CH), 140.77, 135.77, 131.42, 129.53, 129.45, 129.02, 123.45 (Ar), 121.02 (CH=CH-C=O). Mass- *m/z* = 223 [M]⁺, 224 [M + H]⁺.

References:

- (1) Dothager, R. S.; Putt, K. S.; Allen, B. J.; Leslie, B. J.; Nesterenko, V.; Hergenrother, P. J. Synthesis and Identification of Small Molecules That Potently Induce Apoptosis in Melanoma Cells through G1 Cell Cycle Arrest. *J. Am. Chem. Soc.* **2005**, *127* (5), 8686–8696.
- (2) Peerez, B. C.; Teixeira, C.; Albuquerque, I. S.; Gut, J.; Rosenthal, P. J.; Gomes, J. R. B.; Prudeencio, M.; Gomes, P. N - Cinnamoylated Chloroquine Analogues as Dual-Stage Antimalarial Leads. *J. Med. Chem.* **2012**, *56*, 556–567.
- (3) Maiwald, F.; Ben, D.; Charquero, D.; Abad, M.; Erdmann, H.; Preu, L.; Koch, O.; Christoph, H.; Meijer, L.; Comini, M. A.; Kunick, C. 9- and 11-Substituted 4-Azapauones Are Potent and Selective Inhibitors of African Trypanosoma. *Eur. J. Med. Chem.* **2014**, *83* (2014), 274–283. <https://doi.org/10.1016/j.ejmech.2014.06.020>.
- (4) Sova, M. Antioxidant and Antimicrobial Activities of Cinnamic Acid Derivatives. *Mini-Reviews Med. Chem.* **2012**, *12*, 749–767.
- (5) Phuwapraisirisan, P.; Puksasook, T.; Jong-aramruang, J.; Kokpol, U. Phenylethyl Cinnamides : A New Series of a -Glucosidase Inhibitors from the Leaves of Aegle Marmelos. *Bioorg. Med. Chem. Lett.* **2008**, *18*, 4956–4958. <https://doi.org/10.1016/j.bmcl.2008.08.024>.
- (6) Narasimhan, B.; Belsare, D.; Pharande, D.; Mourya, V.; Dhake, A. Esters , Amides and Substituted Derivatives of Cinnamic Acid: Synthesis , Antimicrobial Activity and QSAR Investig ... *Eur. J. Med. Chem.* **2004**, *39*, 827–834. <https://doi.org/10.1016/j.ejmech.2004.06.013>.
- (7) Michalet, S.; Cartier, G.; David, B.; Mariotte, A.; Kaatz, G. W.; Gibbons, S. N - Caffeoylphenalkylamide Derivatives as Bacterial Efflux Pump Inhibitors. *Bioorg. Med. Chem. Lett.* **2007**, *17*, 1755–1758. <https://doi.org/10.1016/j.bmcl.2006.12.059>.
- (8) Waszkielewicz, A. M.; Marona, H. Cinnamide Derivatives for Central and Peripheral Nervous System Disorders — A Review of Structure – Activity Relationships. *ChemMedChem* **2015**, *10*, 1302–1325. <https://doi.org/10.1002/cmcd.201500153>.
- (9) Gaikwad, N.; Nanduri, S.; Madhavi, Y. V. An Insight into the Pharmacological Advances and Structure e Activity Relationships. *Eur. J. Med. Chem.* **2019**, *181*, 111561. <https://doi.org/10.1016/j.ejmech.2019.07.064>.
- (10) Yankep, E.; Fomunt, Z. T.; Dagne, E. An O-Geranylated Isoflavone from Millettia. *Phytochemistry* **1997**, *46* (3), 591–593.
- (11) Shi, Z.; Li, N.; Shi, Q.; Tang, H.; Tang, Y.; Li, W.; Yin, L.; Yang, J.; Duan, J. Synthesis and Structure – Activity Relationship Analysis of Caffeic Acid Amides as Selective Matrix Metalloproteinase Inhibitors. *Bioorg. Med. Chem. Lett.* **2013**, *23* (5), 1206–1211. <https://doi.org/10.1016/j.bmcl.2013.01.027>.
- (12) Sangshetti, J. Sodium Bisulfite as an Efficient and Inexpensive Catalyst for the One-Pot Synthesis of 2 , 4 , 5-Triaryl-1 H - Imidaz ... *Monatshefte fur Chemie* **2008**, *139*, 125–127. <https://doi.org/10.1007/s00706-007-0766-3>.
- (13) Maki, T.; Ishihara, K.; Yamamoto, H. N-Alkyl-4-Boronopyridinium Salts as Thermally Stable and Reusable Amide Condensation Catalysts. *Org. Lett.* **2005**, *7* (22), 5043–5046.
- (14) Li, N.; Wang, L.; Zhang, L.; Zhao, W.; Qiao, J.; Xu, X.; Liang, Z. Air-Stable Bis(Pentamethylcyclopentadienyl) Zirconium Perfluorooctanesulfonate as an Efficient and Recyclable Catalyst for the Synthesis of N-Substituted Amides. *ChemCatChem* **2018**, *10* (16), 3532–3538. <https://doi.org/10.1002/cctc.201800590>.
- (15) Ruan, Z.; Lawrence, R. M.; Cooper, C. B. Phenylsilane as an Active Amidation Reagent for the Preparation of Carboxamides and Peptides. *Tetrahedron Lett.* **2006**, *47*, 7649–7651. <https://doi.org/10.1016/j.tetlet.2006.08.024>.
- (16) Wu, Y.; He, H.; Sun, L.; Heureux, A. L.; Chen, J.; Dextraze, P.; Starrett, J. E.; Boissard, C. G.; Gribkoff, V. K.; Natale, J.; Dworetzky, S. I. Synthesis and Structure - Activity Relationship of Acrylamides as KCNQ2 Potassium Channel Openers. *J. Med. Chem.* **2004**, *47*, 2887–2896.
- (17) Kumar, T.; Mal, P. Transformation of Contact-Explosives Primary Amines and Iodine (III) into a Successful Chemical Reaction under Solvent-Free Ball Milling Conditions. *Adv. Synth. Catal.* **2015**, *357*, 3977–3985. <https://doi.org/10.1002/adsc.201500914>.
- (18) Hazarika, N.; Baishya, G.; Phukan, P. Practical Synthesis of N - (Diphenylmethyl) - and N - (1-Adaman- Tyl) Amides Directly from Aldehydes via a One-Pot Schmidt and Ritter Reaction Sequence. *Synthesis (Stuttg.)* **2015**, *47*, 2851–2859. <https://doi.org/10.1055/s-0034-1380754>.

- (19) Singh, G.; Dada, R.; Yaragorla, S. TfOH Catalyzed One-Pot Schmidt-Ritter Reaction for the Synthesis of Amides through N-Acylimides. *Tetrahedron Lett.* **2016**, *57* (39), 4424–4427. <https://doi.org/10.1016/j.tetlet.2016.08.069>.
- (20) Kulkarni, S. S.; Hu, X.; Manetsch, R. A Simple Base-Mediated Amidation of Aldehydes with Azides. *Chem. Commun.* **2013**, *49*, 1193–1195. <https://doi.org/10.1039/c2cc37289d>.
- (21) Prasad, V.; Kale, R. R.; Mishra, B. B.; Kumar, D.; Tiwari, V. K. Diacetoxyiodobenzene Mediated One-Pot Synthesis of Diverse Carboxamides from Aldehydes. *Org. Lett.* **2012**, *14* (12), 2936–2939.
- (22) Yao, H.; Tang, Y.; Yamamoto, K. Metal-Free Oxidative Amide Formation with N - Hydroxysuccinimide and Hypervalent Iodine Reagents. *Tetrahedron Lett.* **2012**, *53* (38), 5094–5098. <https://doi.org/10.1016/j.tetlet.2012.07.024>.
- (23) Ullaha, S.; Kanga, D.; Leea, S.; Ikramb, M.; Parka, C.; Parka, Y.; Yoona, S.; Chund, P.; Moon, H. R. Synthesis of Cinnamic Amide Derivatives and Their Anti-Melanogenic Effect in α -MSH-Stimulated B16F10 Melanoma Cells. *Eur. J. Med. Chem.* **2019**, *161*, 78–92. <https://doi.org/10.1016/j.ejmech.2018.10.025>.
- (24) Bautista, R.; Herna, E.; Ferna, M.; Bustos, P. A Convenient Method for the Preparation of Chiral Phosphonoacetamides and Their Horner – Wadsworth – Emmons Reaction. *Tetrahedron Asymmetry* **2007**, *18*, 2427–2436. <https://doi.org/10.1016/j.tetasy.2007.09.033>.
- (25) Gandon, V.; Bertus, P.; Szymoniak, J. New Transformations from a 3-Silyloxy 2-Aza-1, 3-Diene : Consecutive Zr-Mediated Retro-Brook Rearrangement and Reactions with Electrophiles. *Tetrahedron* **2000**, *56*, 4467–4472.
- (26) Kim, S.; Lim, C.; Lee, S.; Lee, S.; Cho, H.; Lee, J.; Shim, D. S.; Park, H. D.; Kim, S. Column Chromatography-Free Solution-Phase Synthesis of a Natural Piper-Amide-like Compound Library. *ACS Comb. Sci.* **2013**, *15* (4), 208–215.

Studies on the effect of algal aqueous extract on seed germination & seedling growth in *Cucumis sativus* L

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Abstract- This research deals with the study the effect of fresh water algal extract of two species i.e. *Lyngbya* spp. & *Chara zeylanica* on seed germination & seedling growth of *Cucumis sativus* L Experiment carried out by soaking the seeds overnight in different concentrations (1%, 5%, 10%, 15%, 20%, 25%, & control) of algal extract. The maximum growth of the *Cucumis sativus* L plant was recorded at the concentration 15 % and 20 % for *Lyngbya* spp. and *Chara zeylanica* respectively. However, *Chara zeylanica* extracts reported maximum growth of *Cucumis sativus* L as compared to *Lyngbya* spp. extract.

Key Words- *Lyngbya* spp., *Chara zeylanica*, Seed germination, seedling growth

Introduction

To meet the increased hunger and to boost the yield of the agricultural crop chemicals are considered as a suitable option since decades. Green revolution has added huge quantity of chemicals in the agriculture in term of pesticides and fertilizers. But in recent days of sustainable development, various chemicals in the agriculture have been replaced by the bio-fertilizers. The bio-fertilizer, organic manuring and bio-control of agricultural have emerged as a promising component of integrating nutrient supply system in agriculture. Bio-fertilizers include mainly the nitrogen fixing, phosphate solubilizing and plant growth- promoting microorganisms (Goel *et al.*, 1999). Among bio-fertilizers benefiting the crop production are *Azotobacter*, *Azospirillum*, blue green algae, *Azolla*, P-solubilizing micro organisms, mycorrhizae and Sinorhizobium (Hegde *et al.*, 1987). Green manures were also found to stimulate root growth and produce good yields. Dry green algae contain high percentage of macronutrients, considerable amount of micronutrients and amino acids.

As the green revolution is started in agriculture the concept of use of fertilizers for enhancing growth and yield of crop is changed. Since ancient times tribal people and very recently some part of the rural population is using algae as a fertilizer in the agriculture. There is evidence for the presence of growth hormones in many algal members (Knight, 1947; Burrows, 1956; Weber, 1958; Thiman *et al.* 1942; and Bentley, 1958). But their effect on the growth of crops has not been investigated. Algae are a diverse group of organisms that occur in various shapes and sizes and have different ecological roles. Thousands of species of algae occur world-wide in both fresh and marine waters. *Lyngbya* also known as mermaid's hair or fireweed is naturally occurring, blue green algae that can occur in bloom proportions in some waters. *Chara zeylanica* is also another species which occur in the fresh water and both species are available in abundant in the natural water bodies.

So in present investigation an attempt was made to study the effect of two species of alga i.e. *Lyngbya* spp & *Chara zeylanica* on the root and shoot length of the *Cucumis sativus* L which is cultivated in large area of the India It is the need of the time to replace the chemical fertilizers in the agriculture by the natural material and over the time period it has been found that algal extract can stand as a good source of nutrient which can result in good shoot and root length of the plants thereby resulting net yield from the domesticated crop varieties..

Material & Methods

Fresh water algae used in these experiments were collected from various sites of Loni Villegge Tal-Rahata, in Maharashtra. *Chara zeylanica* (Charophyta) and *Lyngbya*. Sp. (Cyanophyceae) was used for the present study. Healthy specimen were collected by hand picking method and brought to the laboratory and washed thoroughly with tap water. After cleaning and washing the algal forms were identified with the help of standard literature following Desikachary (1959) & Charophyta (Pal). Then they were shade dried for 4 to 6 days. Then dried algal forms were grinded with the help of mixer and the powder was stored in airtight plastic bottle and polythene bags.

Preparation of Algal Extract:

Extract of *Lyngbya* spp. and *Chara zeylanica* were prepared separately by the method of Bhosale *et al.*, 1975. 10 gm algal powder poured in 100 ml of distilled water. Then this mixture was boiled up to

the final volume of about 10 ml and filtered. The filtrate was taken as 100% concentration of algal extract. Then this algal extract was used to prepare 1%, 5%, 10%, 15% and 20% concentration. These concentrations of the extracts were prepared by using distilled water. This prepared extract of different concentration were used for seed germination

Germination of *Cucumis sativus* L seeds

. For the detection of effect of various concentration of algal extract on seed germination, Towel method (ISTA Rules 1966) was used for seed germination. Experiment was conducted in triplicate set. Distilled water treated set was Considered as control

Measurement of percent seed germination and growth of seedling

The growth of seedlings in terms of length of main root, shoot and total height were measured after a period of 14 days. The above mentioned parameters were calculated by using following formulae:

$$\text{a) Percent germination} = \frac{\text{Number of seeds germinated}}{\text{Total number of seeds}} \times 100$$

$$\text{b) Total height of seedling} = \text{Root length} + \text{shoot length}$$

The root length and shoot length were measured by using scale and the results are recorded in cm. The results obtained after experiment are presented in table 1 and table 2.

RESULTS AND DISCUSSION

Table no: 1 Effect of *Lyngbya* spp. Extract on seed germination & seedling growth of *Cucumis sativus* L.

No.	Concentration	Shoot Length (cm).	Root Length (cm)	Total Height	% Seed germination
1	1%	4.2	1.26	5.46	85
2	5%	3.46	3.42	6.88	85
3	10%	3.74	2.78	6.53	90
4	15%	4.5	3.83	8.33	95
5	20%	5.18	2.27	7.35	95
6	25%	4.37	2.13	6.50	90
C	Control	4.03	2.00	6.03	80

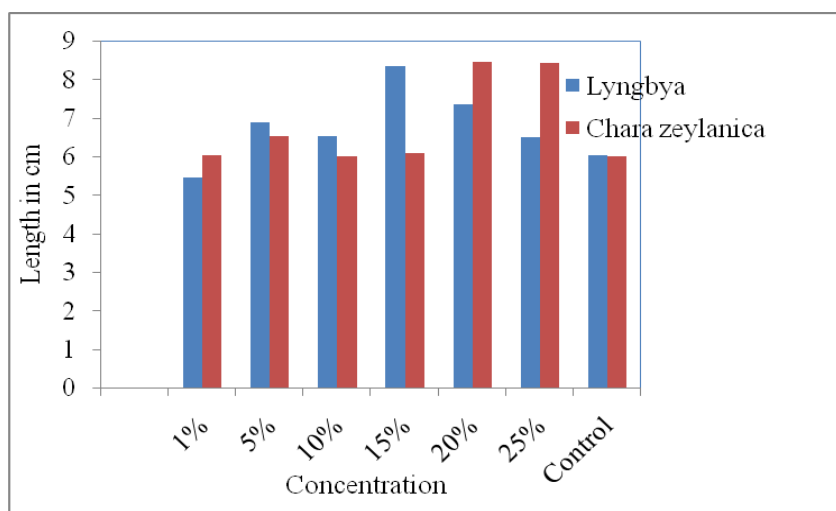
Table 2 - Effect of *Chara zeylanica* extract on seed germination & seedling growth of *Cucumis sativus* L

No.	Concentration	Shoot Length (cm).	Root Length (cm).	Total Height	%Seed germination
1	1%	4.13	1.89	6.02	83
2	5%	5.12	1.39	6.51	87
3	10%	3.97	3.04	6.01	90
4	15%	3.93	2.14	6.07	96
5	20%	4.54	3.9	8.44	93
6	25%	4.34	4.09	8.43	87
C	Control	4.00	2.01	6.01	85

The early seedling growth parameter like shoot length, root length in control and algal extract treated seed also show variation with respect to different concentration of extracts. Maximum shoot length was reported at 20 % conc. however minimum shoot length was recorded at 15 % conc. Maximum root length was reported at concentration 15% and minimum was recorded at 1%. The total height of the plant was found increased from conc. 1 % to 15 % except 10 % and from 15 % to 25% it was found decreased.

The effects of *Chara zeylanica* extract on the shoot and root length of the *Cucumis sativus* L also shows variation at different concentrations. The maximum shoot length was recorded at 5 % concentration however minimum shoot length was reported at 15% concentration. The maximum root length was recorded at 25 % concentration while minimum root length was reported at 5 % concentration. The maximum growth of the *Cucumis sativus* L using the *Chara zeylanica* extract was report at 20 % concentration. Total height of the *Cucumis sativus* L at different concentration using *Chara zeylanica* and *Lyngbya* extract can be easily observed from graph I.

Graph 1- Comparison between *Lyngbya* and *Chara zeylanica* extracts on total height .



CONCLUSION

The total growth of the *Cucumis sativus* L plant was recorded at the concentration 15 % and 20 % for *Lyngbya* spp and *Chara zeylanica* respectively. From the present investigation it is concluded that *Lyngbya* spp & *Chara zeylanica* liquid extract have good effects on the seed germination, early seedling growth and root and shoot length of the *Cucumis sativus* L. So these two algal species can stand as a good source of nutrients for the *Cucumis sativus* L however its potentiality for another species needs to be studied so that it can easily replace the chemical fertilizers and help for better Integrated Nutrient Management in the cultivated crops.

REFERENCES

1. [Anantharaj and Venkatesalu, 2001](#) M. Anantharaj, V. Venkatesalu Effect of algae liquid fertilizer on *Vigna catajung* Seaweed Res Utiln, 23 (2001), pp. 33-39
2. Blunden G (1991) Agricultural uses of seaweeds and seaweed extracts Seaweed resources in Europe:65-81
3. Bentley, J.A. (1958). Role plant hormones in algal metabolism and ecology. *Nature*, 181: 1499- 1501.
4. Bhosale, N. B, Untawale, A.G. and Dhargalkar, V. K. (1975). Effect of seaweed extract on the growth of *Phaseolus vulgaris*. *Indian J. Mar. Sci.* 4 : 209-210.
5. Burrows, E.M. (1956). Growth control in Fucaceae. Abstract Int. Symp., Seaweed Symposium.
6. Desikachary, T.V. (1959). Cyanophyta public. Indian country of Agricultural Research, New Delhi, *India*, pp. 1-686.
7. Goel, A.K., R.D.S. Laura, G. Pathak, G. Anuradha and A. Goel, (1999). Use of bio-fertilizers: potential, constraints and future strategies review. *Int. J.Trop. Agric.*, 17: 1-18.
8. Hegde, G. R. and Malammanavar, S. G. (1987). Check list of rice field algae of Dharwad, Karnataka State. *Ind. Bot. Repotr.*, 7 (1-2) : 101-103.
9. Knight, M. (1947). Biological activity of *Fucus vesiculosus* and *Fucus cerratus*. Proc. Linn. Soc. London. 159: 87- 90.
10. Thimann, K.V., Skoog, F. and Byer, A.C. (1942). The extraction of auxin from plant tissues II. *Amer. J. Bot.* 27: 598- 660.
11. Weber, W. (1958). Zur Polarität Von *Vaucheria*. *Z. Bot.* 46: 161- 198

A preliminary Limnological studies of village pond

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Abstract- The pond is an oldest pond of Sawargaon village. Determine its limnology, in relation to diversity of phytoplankton population. Main water supply is rainwater and surface runoff from surrounding areas. It has been used for storage of water. Pure water is essential for human survival. The availability of good quality water is an indispensable feature for preventing diseases and improving the quality of life. So, it is necessary to know about the different physicochemical parameters of water such as, temperature, pH, total alkalinity, total hardness, dissolved oxygen, free carbon dioxide, chloride and algal flora. Variations in physico-chemical parameters were noted. The results also revealed that the pond water was hard, alkaline and polluted. Totally 11 genera of algae were reported from the four classes.

Key words: Physico-chemical, Limnological, algal flora

Introduction:

Water constitutes the main part of our environment. It contains a amount of impurities in varying numbers. The sources of contaminants are natural as well as artificial. The rainwater when moves on the ground carry silt and organic impurities. Waterborne domestic and industrial waste is called sewage. It is a rich source of many inorganic nutrients like sulphur, nitrogen, phosphorus and potassium. It contains organic and inorganic materials in soluble and suspended form. Excessive presence of nitrogen and phosphorus proliferates the growth of aquatic algae results in the formation of algae blooms (Hem, 1992). Excessive nutrients in runoff from land used for intensive agriculture will alter the natural composition of algae in streams and rivers. If the natural balance is disturbed algal blooms may occur, causing undesirable discoloration, scum and odours and even toxic effects. Algae also interfere with water treatment process. Toxins secreted by *Gymnodinium* and *Pyrodinium* kill many kinds of fishes. Algal blooms lead to oxygen deficiency to the other aquatic forms.

Singh, 1983; Goel et al., 1986; Singh, 1990; Abbasi et al., 1996; Ansari and Prakash, 2000; Kumar et al., 2015; Prakash et al.; Singh and Verma A large number of workers have studied the limnological parameters of lentic water bodies of India,. The present work was undertaken for studying the limnological characteristics of Pond in relation to plankton.

Materials and method:

Monthly sampling of pond water was done from July 2021 to December, 2021. Observations were made for water temperature and pH at the site, while for rest of the parameters, analysis was made in the laboratory as per standard procedures of APHA (2005). Planktonic flora were collected from marginal and centre of pond using plankton net following standard procedures and later identified in the laboratory.

Result and discussion.

The parameter wise results obtained are elaborated and discussed below.

Water Temperature: Water temperature is dependable for not only high natural yield but also influences the physiological behavior of water organisms. The water temperature of pond ranged between 29-35 °C. The range of water temperature is suitable for growth of aquatic organism.

Table: 1 physicochemical properties of water.

Sr.No	Month	Temperature (°C)	PH	Total Alkalinity (mg/l)	Total Hardness (mg/l)	Dissolved Oxygen (mg/l)	Carbon Dioxide (mg/l)	Phosphate (mg/l)
	July	30.2-33.1	7.9-8.3	100.0-116.2	79.00-88.1	8.2-9.3	8.7-15.3	0.07-0.12
	August	31.4-32.6	8.0-8.9	99.00-110.0	80.00-89.0	8.9-9.2	9.3-15.2	0.9-0.12
	September	33.6-35.1	8.1-9.1	100.00-112.00	80.10-90.00	8.3-9.5	8.7-14.2	0.8-0.13
	October	35.00-35.6	8.4-9.5	97.00-100.0	78.10-99.0	8.7-9.1	9.00-12.1	0.8-0.11
	November	33.00-34.3	8.5-9.4	98.00-110.00	79.10-98.00	8.9-9.3	9.1-14.3	0.9-0.12
	December	29.00-31.1	8.6-9.3	100.0-112.3	80.20-99.30	8.00-9.2	9.4-12.3	0.9-0.10

pH

The pH is an marker of ecological situation of the water body. The pH of pond water ranged between 7.9 – 9.5 which is suitable for aquatic life (Singh, 1990). Alkaline range of pond water is pinpointing of the fact that photosynthetic activity has dominance over the respiratory activity of the biota.

Dissolved Oxygen (DO)

The Dissolved Oxygen is an important factor as it is an indicator of aquatic yield. The oxygen concentration in water body is a function of the temperature as well as the photosynthesis and community respiration. The range (8-9.5mg/L) of DO shows that pond water was saturated with oxygen.

Free Carbon dioxide

In aquatic system Free CO₂ derived from the full of atmosphere sources, living respiration and breakdown of organic matter. It ranges from 8.7-15.3mg/L. The occurrences of high CO₂ due to rapid decomposition of organic matter.

Total Alkalinity

Total alkalinity having relation with PH and CO₂. It ranges from 97-116mg/L.

Total alkalinity indicates that the pond water is hard type and is problem-solving of high fish production.

Total Hardness

The hardness of water primarily depends upon salts of calcium and magnesium ions in water, mainly the carbonates and sulphates (Wadia, 1961) [38]. It is an index of fertility of the aquatic ecosystem. Moyle (1946) [14] suggested 40 ppm of hardness as a natural separation point between soft and hard waters. The total hardness ranged from 79-99mg/L indicates that pond water is suitable for fish culture (Jhingran, 1988).

Phosphate

Phosphate is considered as the most critical nutrient substance in the maintenance of aquatic productivity. These are essential for the growth of organisms and a nutrient that limits the primary productivity of the water body. In the present study, the phosphate content was ranged between 0.07 and 0.13 mg/L. Natural water bodies viz., lakes and ponds receive their nitrates and phosphate supply from agricultural runoff, sewage effluents and decomposed organic matters. When algae and other microorganisms die and settle to the bottom of any water body, they carry their cellular nitrogen and phosphorus with them. During decomposition, these nutrients are released and become available for subsequent growth of aquatic flora.

Productivity of Plankton

In the present study, 11 genera of phytoplankton were found. Of these 2 belong to Chlorophyceae (*Oocystis*, *Senedesmus*.) 5 to Bacillariophyceae (*Synedra*, *Navicula*, *Synura*, *Pinnularia* and *Nitzschia*); 3 to Cyanophyceae (*Chroococcus*, *Merimopedia*, and *Oscillatoria*) and 1 to Euglenophyceae (*Phacus*.).

Conclusion

The present immunological studies of Sawargaon pond suggest its nutrient rich status and because of small size it could be gainfully used for fish culture. Authors suggest appropriate care of this pond in order to maintain the proper water level of surrounding areas. Thus based on the findings it can be concluded that the pond water was not suitable for bathing and drinking but it can be used for fish culture.

References

1. A.K. Dixit, S. K. Pandey, R. Mehta, A. Niyaz, Gunjan and J. Pandey, "Study of physico-chemical parameters of different pond water of Bilaspur District, Chhattishgarh, India," *Environ. Skeptics Crit.*, vol. 4, no. 3, pp. 89-95, 2015.
2. Bellinger, E.G. (2010). *Fresh water algae identification and use as bioindicators*. New Delhi, Pp.271
3. Gopinathan. K.M. & Sivadasan K.K. (2012). Influence of Physico-Chemical characteristics on the pelagic biotic communities of Mahe Estuary, *Spectrum*, Vol.1. Pp. 5-15. *International Journal on Biological Sciences*. 2015a; 6(2):141-144.
4. Krishnamurthy V. (2000). *Algae of India and Neighbouring Countries*, 1- Chlorophycota. Oxford and IBH Publishing Co, New Delhi, Pp.210.
5. Prakash S, Verma AK, Prakash S. *Limnological Studies of Alwara Lake of Kaushambi (UP)*, I
6. S. Rashmi, "Seasonal variation in physico-chemical and biological analysis of Moti Lake, Motihari, East Champaran, Bihar," *Res. J. Chem. Environ. Sci.* vol. 4, pp. 56 – 61, 2016.
7. S.V. Ganapati, "Ecology of tropical waters," *Proc. Symp. Alology*, New Delhi, India: ICAR, pp. 204-218, 1960.
8. Verma AK. *A Biodiversity Survey of Muntjibpur Pond of District Allahabad (U.P.)*. *International Journal on Environmental Sciences*. 2018; 9(1):56-59.

Lemon Juice (*Citrus Limon*) Mediated Green Protocol for Synthesis of β -Amino Carbonyl Compounds

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Abstract: In this research paper we propose lemon juice as a green catalyst for the synthesis of β -amino carbonyl compound. This catalyst is efficient, environmentally friendly, natural and biodegradable. A simple and efficient method has been developed for the synthesis of β -amino carbonyl compounds from aromatic aldehydes, aromatic ketones and aromatic amines by Mannich reaction in the presence lemon juice as a catalyst. The advantages of current natural catalyst are inexpensive, high yield, non-hazardous, short reaction times and eliminate hazardous solvents.

Key words: Green synthesis, Lemon juice, Mannich reaction, β -amino carbonyl compounds

Introduction:

Because of the growing concern over environmental degradation caused by the use of harmful solvents, green chemistry has got a lot of attention in recent years. Green chemistry is called environmentally friendly chemistry because it aims to use procedures that cause the least harm to the environment. The majority of green solvents are derived from renewable and natural resources. Fruit juice has recently been employed as an organic solvent and catalyst in the synthesis of pharmaceutically important compounds. Fruit juices are incomparable solvent because they are readily available, inexpensive, nontoxic, safer, and environmentally benign. Lemon juice is a natural catalyst for the synthesis of β -amino carbonyl compounds and a green alternative to harmful solvents.¹ The Mannich reaction is one of the most important reactions for carbon-carbon bond formation and is a classical route for the preparation of β -amino carbonyl compounds and their derivatives which are important synthetic intermediates for synthesis of biologically active compounds.²

The conventional catalyst used for synthesis of β -amino carbonyl compounds using Mannich reactions are Amberlyst-15³, ionic liquid⁴, silica supported sulfuric acid⁵, sulfamic acid⁶, carbon-based solid acid⁷, Bismuth(III) chloride⁸, boric acid⁹, bromodimethylsulfonium bromide (BDMS)¹⁰. β -amino carbonyl compounds are more important because they are considerably bioactive. β -amino carbonyl derivatives are used for antibacterial, analgesic, antitumor, anti-inflammatory, antidiabetic and antimycobacterial activities¹¹. Ondansetron (**A**) was used to prevent nausea and vomiting caused by radiation and cancer chemotherapy¹². The plant alkaloid alpha lobeline hydrochloride (lobeline) (**B**) was used to treat asthma and bronchitis¹³. Eperisone hydrochloride and tolperisone hydrochloride (**C**) were extensively used for relaxation of skeletal and vascular smooth muscle (antispasmodic)¹⁴. Compound (**D**) contains β -amino carbonyl moiety having potential androgen receptor antagonists for early control of prostate cancer¹⁵ (**Figure 1.**). Here we report an efficient process for synthesis of different β -amino carbonyl compounds using lemon juice as a catalyst via Mannich reaction of aromatic ketones with aromatic aldehydes and aromatic amines.

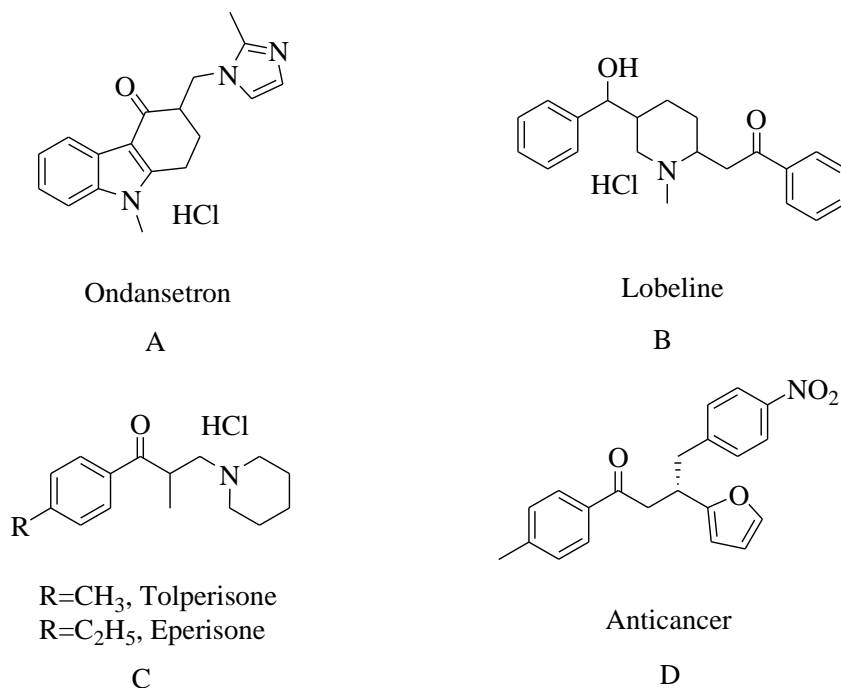
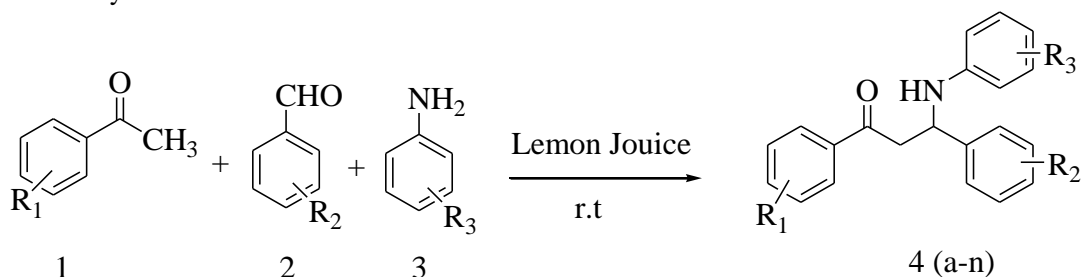


Figure 1. β-amino carbonyl derivatives with various biological potential

Results and Discussion:

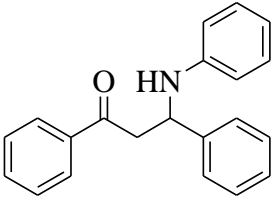
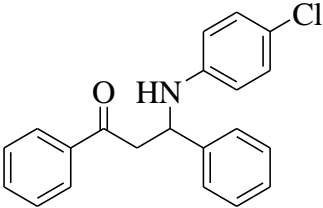
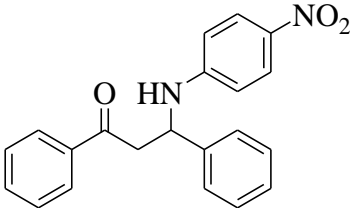
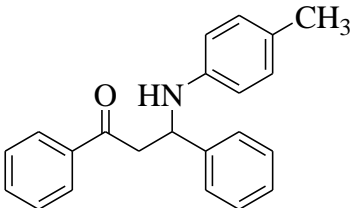
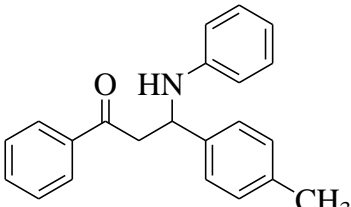
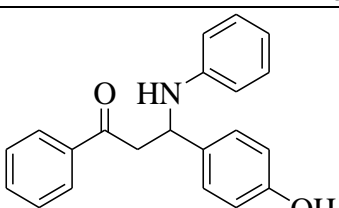
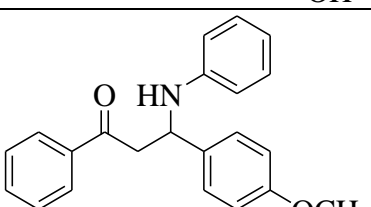
We performed the Mannich reaction for the synthesis of β-amino carbonyl compounds catalyzed by lemon juice (**Scheme 1**). The current synthetic methodology has features such as environmentally benign, mild reaction conditions and an easy work up also the results obtained are discussed. Lemon is a cheap and readily available fruit, with *Citrus Indica*, *Citrus Limonium*, and *Citrus Aurantium* being the most common *Citrus* species. The sour taste of lemon is due to citric acid which contributes 5-7 % of overall mass of lemon. The other components includes proteins and minerals¹⁶.

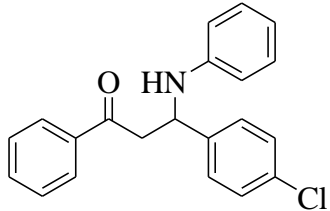
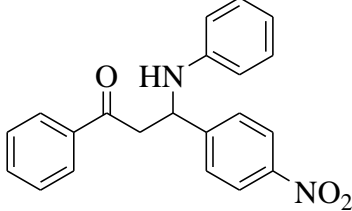
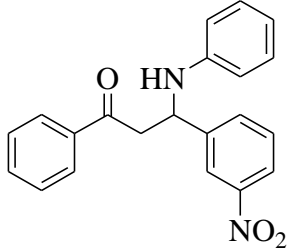
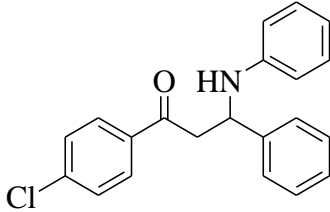
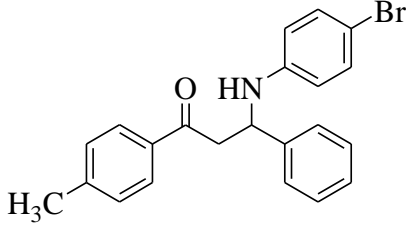
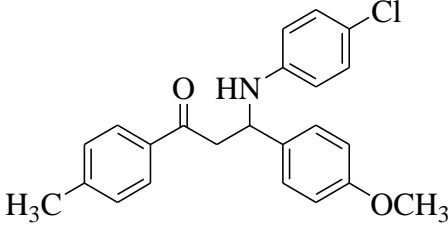
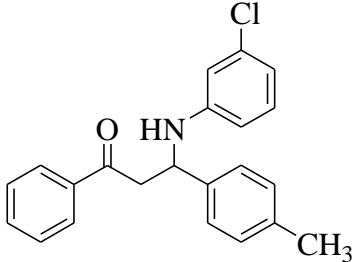
The one pot three component condensations of aromatic ketones, aromatic aldehydes and aromatic amines are achieved in presence of lemon juice as a natural catalyst. Initially the synthesis of compound **4a** was selected as model reaction to optimize the reaction conditions. The reaction was carried out by stirring a mixture of acetophenone (2 mmol), benzaldehyde (2 mmol) and aniline (2 mmol) in presence of lemon juice as a catalyst. A series of β-amino carbonyl compounds were prepared from various aromatic ketones, aromatic aldehydes and aromatic amines listed in Table 1.



Scheme 1. Synthesis of β-amino carbonyl compounds

Table 1. Synthesis of β -amino carbonyl compounds by the reaction of aromatic ketones, aromatic aldehydes with aromatic amines using lemon juice as a catalyst.

Entry	Product	Time (h)	Yield (%)	M.P. ($^{\circ}$ C)	M.P. ($^{\circ}$ C) (Ref)
4a		9	88	167-168	169-171 ¹⁷
4b		10	86	167-169	170-171 ¹⁷
4c		11	90	181-183	184-186 ¹⁸
4d		11	91	167-168	170-171 ⁸
4e		12	89	127-129	129-130 ⁸
4f		5	92	217-219	220-221 ⁸
4g		10	87	138-139	142-143 ¹⁹

4h		7	85	112-114	114-115 ¹⁹
4i		7	86	102-104	105-106 ²⁰
4j		8	89	127-129	131-132 ⁷
4k		18	86	117-118	119-120 ⁸
4l		11	91	136-138	139-140 ⁸
4m		10	88	132-134	136-137 ⁸
4n		7	85	160-162	163-165 ²¹

Experimental:

Materials and methods:

Chemical reagents in high purity were purchased from Merck and used without further purification. The melting points were determined by open capillaries and were used uncorrected. The

reaction monitoring was conducted using Thin-layer chromatography was performed using commercially prepared 60-mesh silica gel plates and visualization was effected with short wavelength UV light (254 nm).

Preparation of catalyst:

Fresh lemon was washed completely with water and cut using a knife, after which the pieces were manually pressed. The juice was then filtered through cotton to remove solids and obtain clear juice, which was then used as a catalyst.

General Procedure for synthesis of β -amino carbonyl compounds:

A mixture of aromatic ketones (2 mmol), aromatic aldehydes (2 mmol) and aromatic amines (2 mmol) and catalyst juice (lemon juice) (10 ml) were added and stirred for appropriate time. The progress of the reaction was monitored by TLC. The product was dried and recrystallized to obtain the pure product.

Conclusion:

In conclusion, we have reported a simple and efficient three component process for the synthesis of β -amino carbonyl compounds by condensation of aromatic ketones, aromatic aldehydes and aromatic amines using lemon juice as a catalyst. Lemon juice is useful in organic synthesis because of its acidic properties and enzymatic activity. The advantages of the present catalyst such as environmentally friendly nature, low cost, commercial availability, short reaction time, bio-degradable catalyst, mild reaction conditions, high purity of the products and simple reaction workup make the catalyst efficient in organic synthesis.

References:

- (1) Alikhani, A.; Foroughifar, N.; Pasdar, H. Lemon Juice as a Natural Catalyst for Synthesis of Schiff's Base: A Green Chemistry Approach. *Int. J. Adv. Eng. Res. Sci.* **2018**, *5* (2), 61–65. <https://doi.org/10.22161/ijaers.5.2.7>.
- (2) Yekkirala, V.; Sudhagani, R. K.; Panuganti, L. Yttrium (III) Chloride Catalyzed Mannich Reaction: An Efficient Procedure for the Synthesis of β -Amino Carbonyl Compounds. *Org. Commun.* **2015**, *7* (4), 123–129.
- (3) Das, B.; Reddy, K. R. Facile One-Pot Multicomponent Synthesis of β -Acetamido Ketones with Amberlyst-15 as Heterogeneous Catalyst. *Helv. Chim. Acta* **2006**, *89* (12), 3109–3111. <https://doi.org/10.1002/hlca.200690279>.
- (4) Gong, K.; Fang, D.; Wang, H. L.; Liu, Z. L. Basic Functionalized Ionic Liquid Catalyzed One-Pot Mannich-Type Reaction: Three Component Synthesis of β -Amino Carbonyl Compounds. *Monatshefte für Chemie* **2007**, *138* (11), 1195–1198. <https://doi.org/10.1007/s00706-007-0767-2>.
- (5) Khodaei, M. M.; Khosropour, A. R.; Fattahpour, P. A Modified Procedure for the Dakin-West Reaction: An Efficient and Convenient Method for a One-Pot Synthesis of β -Acetamido Ketones Using Silica Sulfuric Acid as Catalyst. *Tetrahedron Lett.* **2005**, *46* (12), 2105–2108. <https://doi.org/10.1016/j.tetlet.2005.01.149>.
- (6) Xia, M.; Lu, Y. D. A Novel Direct and One-Pot Mannich Synthesis of Fluorinated β -Aminobutanones with Sulfamic Acid as a Green Catalyst. *J. Fluor. Chem.* **2006**, *127* (8), 1119–1124. <https://doi.org/10.1016/j.jfluchem.2006.05.020>.
- (7) Davoodnia, A.; Tavakoli-Nishaburi, A.; Tavakoli-Hoseini, N. Carbon-Based Solid Acid Catalyzed One-Pot Mannich Reaction: A Facile Synthesis of β -Amino Carbonyl Compounds. *Bulletin of the Korean Chemical Society*. 2011, pp 635–638. <https://doi.org/10.5012/bkcs.2011.32.2.635>.
- (8) Li, H.; Zeng, H. yao; Shao, H. wu. Bismuth(III) Chloride-Catalyzed One-Pot Mannich Reaction: Three-Component Synthesis of β -Amino Carbonyl Compounds. *Tetrahedron Lett.* **2009**, *50* (49), 6858–6860. <https://doi.org/10.1016/j.tetlet.2009.09.131>.
- (9) Mukhopadhyay, C.; Datta, A.; Butcher, R. J. Highly Efficient One-Pot, Three-Component Mannich Reaction Catalysed by Boric Acid and Glycerol in Water with Major “syn” Diastereoselectivity. *Tetrahedron Lett.* **2009**, *50* (29), 4246–4250. <https://doi.org/10.1016/j.tetlet.2009.04.135>.
- (10) Khan, A. T.; Parvin, T.; Choudhury, L. H. Effects of Substituents in the β -Position of 1,3-Dicarbonyl Compounds in Bromodimethylsulfonium Bromide-Catalyzed Multicomponent Reactions: A Facile Access to Functionalized Piperidines. *J. Org. Chem.* **2008**, *73* (21), 8398–8402. <https://doi.org/10.1021/jo8014962>.
- (11) Prabhakara, M. D.; Maiti, B. Ionic Liquid-Immobilized Proline(s) Organocatalyst-Catalyzed One-Pot Multi-Component Mannich Reaction under Solvent-Free Condition. *Res. Chem. Intermed.* **2020**, *46* (4), 2381–2401. <https://doi.org/10.1007/s11164-020-04096-w>.
- (12) Taylor, L. G.; Bird, S. T.; Sahin, L.; Tassinari, M. S.; Greene, P.; Reichman, M. E.; Andrade, S. E.; Haffenreffer, K.; Toh, S. Antiemetic Use among Pregnant Women in the United States: The

- Escalating Use of Ondansetron. *Pharmacoepidemiol. Drug Saf.* **2017**, 26 (5), 592–596. <https://doi.org/10.1002/pds.4185>.
- (13) Glaser, R.; Hug, P.; Drouin, M.; Michelc, A. Solution- and Solid-State Stereochemistry. **1992**, 1071–1079.
- (14) Rabbani, G.; Baig, M. H.; Lee, E. J.; Cho, W. K.; Ma, J. Y.; Choi, I. Biophysical Study on the Interaction between Eperisone Hydrochloride and Human Serum Albumin Using Spectroscopic, Calorimetric, and Molecular Docking Analyses. *Mol. Pharm.* **2017**, 14 (5), 1656–1665. <https://doi.org/10.1021/acs.molpharmaceut.6b01124>.
- (15) Donkena, K. V.; Yuan, H.; Young, C. Y. Recent Advances in Understanding Hormonal Therapy Resistant Prostate Cancer. *Curr. Cancer Drug Targets* **2010**, 10 (4), 402–410. <https://doi.org/10.2174/156800910791208544>.
- (16) Tranchida, P. Q.; Bonaccorsi, I.; Dugo, P.; Mondello, L.; Dugo, G. Analysis of Citrus Essential Oils: State of the Art and Future Perspectives. A Review. *Flavour Fragr. J.* **2012**, 27 (2), 98–123. <https://doi.org/10.1002/ffj.2089>.
- (17) Yue, C. B.; Yi, T. F.; Zhu, C. B.; Liu, G. Mannich Reaction Catalyzed by a Novel Catalyst under Solvent-Free Conditions. *J. Ind. Eng. Chem.* **2009**, 15 (5), 653–656. <https://doi.org/10.1016/j.jiec.2009.09.038>.
- (18) Shirini, F.; Akbari-Dadamahaleh, S.; Mohammad-Khah, A. Rice-Husk-Supported FeCl₃ Nanoparticles: Introduction of a Mild, Efficient and Reusable Catalyst for Some of the Multi-Component Reactions. *Comptes Rendus Chim.* **2013**, 16 (10), 945–955. <https://doi.org/10.1016/j.crci.2013.02.019>.
- (19) Li, Z.; Ma, X.; Liu, J.; Feng, X.; Tian, G.; Zhu, A. Silica-Supported Aluminum Chloride: A Recyclable and Reusable Catalyst for One-Pot Three-Component Mannich-Type Reactions. *J. Mol. Catal. A Chem.* **2007**, 272 (1–2), 132–135. <https://doi.org/10.1016/j.molcata.2007.03.029>.
- (20) Wang, R.; Li, B. gang; Huang, T. kun; Shi, L.; Lu, X. xia. NbCl₅-Catalyzed One-Pot Mannich-Type Reaction: Three Component Synthesis of β -Amino Carbonyl Compounds. *Tetrahedron Lett.* **2007**, 48 (12), 2071–2073. <https://doi.org/10.1016/j.tetlet.2007.01.142>.
- (21) Mansoori, A.; Eshghi, H.; Lari, J. An Efficient Synthesis of 1,3-Diphenyl-3-Phenylamino-Propan-1-One and Its Derivatives by Mannich Reaction in the Presence of Doped Porous Carbon by Nitrogen and Sulfur (NS-PCS) as Catalyst. *J. Chinese Chem. Soc.* **2018**, 65 (5), 548–553. <https://doi.org/10.1002/jccs.201700095>.

Colorimetric Method for Determination of Cobalt in Industrial Waste Water Samples

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Abstract:

A colorimetric method which can be used to determine concentrations of developed cobalt in industrial waste water sample. The different method is applicable for the detection of cobalt at concentrations in environmental samples. Cobalt and few heavy metals present in industrial wastewater. These metal ions can have different effects on biological cycle of living organisms. This method involves the measurement of the absorbance of the coloured complex form at 520 nm. In this work, we investigated the possibility to determine calorimetrically cobalt ions.

Keywords: Colorimetric detection Cobalt ion,

Introduction

The different pollutants present in industrial waste water. The nature of wastewater plays important role in to decide the which method is useful for analysis. The pollutants are classified as organic, inorganic, biological and toxic present in wastewater. Other types of pollutants include different grainy materials, oil and grease etc. The most common structure of industrial wastewater includes physical, chemical and biological treatment. The removal of organic matter from the wastewater is major treatment. Different methods are studied by investigators such as affecting parameters, kinetics, isotherms and mechanism. The removal of heavy metal can be carried out by using membrane separation, biological methods and adsorption by different adsorbents. The presence of metals in industrial wastewater can cause different acute and chronic diseases. Cobalt is such metal used in industries such as nuclear, medicine, enamels and semiconductors, grinding wheels, painting on glass and porcelain, hygrometers and electroplating. Cobalt can have different adverse effects on health such as asthma, heart damage, heart failure, damage to the thyroid and liver. The determination of cobalt from industrial wastewater can be carried out by different physical, chemical and biological methods.

Experimental

The calorimetrically detection of heavy metal ions was performed at room temperature. The stock solutions of waste water sample for heavy metal ions were prepared with metal chloride in deionized water. A volume of solution 0.1 mL of 4 M APTES was added to 3 mL of different concentrations 0.1 ppm, 1 ppm, 10 ppm, 20 ppm, 50, and 100 ppm of Co^{2+} , Pb^{2+} , Cu^{2+} , Cr^{2+} , and Hg^{2+} ions. Colour change was analysed with UV-spectra (UV-18000, Shimadzu). Performed batch experiments to study effect of these parameters on adsorption and the optimum parameters for cobalt removal were pH-4, initial concentration of metal ions. They observed that low adsorbent dose, high pH and high initial concentration of wastewater.

Conclusion

The detection of Cobalt from wastewater sample can be carried out by using adsorbents. The research has been reported on use of industrial waste water for detection of cobalt. The main objective of adsorption was study on affecting parameters, kinetics and isotherm. The isotherm and kinetics depend on nature of adsorbent. The increase in initial concentration, adsorbent dose and pH favours to remove cobalt. Methods such as precipitation, ion exchange and electrodialysis were also found to be useful for cobalt removal.

References

1. Sunil Jayant Kulkarni, Ajaygiri Kamalgiri Goswami, "Characterization, Treatment and Disposal of Sludge: A Review", International Journal for Research in Applied Science & Engineering Technology, 2014, 2(2), 516-517.
2. Sunil J. Kulkarni, "Removal of Organic Matter from Domestic Waste Water by Adsorption", International Journal of Science, Engineering and Technology Research, 2013, 2(10), 1836-18840.
3. Pallavi Amale, Sunil Kulkarni, Kavita Kulkarni, "A Review on Research for Industrial Wastewater Treatment with Special Emphasis on Distillery Effluent", International Journal of Ethics in Engineering & Management Education, 2014, 1(9), 1-4.
4. Sunil J. Kulkarni, "Modeling for Adsorption Columns for Wastewater Treatment: a Review", International Journal of Innovative Research in Engineering & Multidisciplinary Physical Sciences, 2014, 2(2), 7-11. W. Gerhartz, Ullmann's Encyclopedia of Industrial Chemistry, (VCH Publishers, New York,

5. D. Coutsouradis and L. Habraken, *Cobalt.*, 4,3-27 (1959).
6. T.H. Jeffers, *J. of Metals.*, 37,47-50 (1985).
7. T.H. Jeffers, K.S. Gritton, P.G. Bennett and D.C. Seidel, *Nuclear and Chemical Waste Management.*, 8,374 (1988).
8. J.B. McKinley in *Catalysis* (P.H. Emmett, Ed, Chapman and Hall Ltd, London, 1957). V, pp. 405-423.
9. S.W. Weller and G.A. Mills in *Advances in Catalysis* (W.G. Frankenberg, V.I. Komarewsky eds, Academic Press, New York, N.Y., 1956) VIII, pp. 163-205.
10. I.Wender. H.W. Sternberg and M. Orchin, in *Catalysis* (P.H. Emmett, Ed, Chapman and Hall Ltd, London 1957). V, pp. 73-130. F. Fischer, O. Roelen and W. Feist, *Petroleum Refin.*, 22,429-36 (1943). [9] G.H. Unzelman and C.J. Wolf, *Petroleum Processing*, 12, 70-76 (1957).
11. Albert O. Adegbembo, Philip A. Watson, "Estimated Quantity of Mercury in Amalgam Waste Water Residue Released by Dentists into the Sewerage System in Ontario, Canada", *Journal of the Canadian Dental Association*, 2004, 70(11), 759-765.
12. Reyad A. Al Dwairi, Aiman E. AlRawajfeh, "Removal Of Cobalt And Nickel From Wastewater By Using Jordan Low-Cost Zeolite And Bentonite", *Journal of the University of Chemical Technology and Metallurgy*, 2012, 47(1), 69-76.
13. Jaber Salehzadeh, "Removal of Heavy Metals Pb²⁺, Cu²⁺, Zn²⁺, Cd²⁺, Ni²⁺, Co²⁺ and Fe³⁺ from Aqueous Solutions by using Xanthium Pensylvanicum", *Leonardo Journal of Sciences*, 2013, 23, 97-104.
14. V.H. Waghmare, U.E. Chaudhari, "Kinetics and Thermodynamics of Co(II) Adsorption on Moringa Olifera Bark From Aqueous Solutions", *International Journal of Chemical and Physical Science*, 2015, 4(special issue), 255-260.
15. Evans T. Musapatika, Ruella Singh, Krishnie Moodley, Charles Nzila, Maurice S. Onyango³ and Aoyi Ochieng, "Cobalt removal from wastewater using pine sawdust", *African Journal of Biotechnology*, 2012, 11(39), 9407-9415

Study of Chemical Properties of Ground Water in Sangamner area in Ahmednagar Dist., India

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Abstract: In Sangamner area water from wells, river, canal is mostly the source of drinking water. Some villages use bore well water for drinking. Pravara River which runs from most part of Sangamner area contaminates the well water. Also bore well water for most part of region is found to be salty. This water is unhealthy for living part of environment. For this study we have collected 8 samples from the region and analyzed some essential parameter like pH, electrical conductivity, TDS, Alkalinity, Dissolved oxygen, Biochemical oxygen demand, Total Hardness, Calcium, Magnesium, chloride, sodium, potassium, carbonate.

Keywords: Chemical parameter, contamination, Groundwater.

Introduction

Groundwater is generally used as source of drinking water. The increasing demand of this source of water is due to increase in population, high standard of living and industrialization. At the same time above factor results in to pollution of the source day by day. Other factors contributing to pollution of source are excess use of fertilizers and pesticides. The quality of contaminated sources cannot be regained even by stopping further addition of pollutants. Hence regular monitoring of groundwater is essential. For current study we have selected eight villages on the bank of Pravara River which are affected by river water. The villages like Ashvi Bk, Ashvi Kd, Shipalapur, Panodi, Umbari Balapur, Primpri, Pratapur, Nimgav Jali

Table-1

Sample 1	Ashvi Bk
Sample 2	Ashvi Kd
Sample 3	Shipalapur
Sample 4	, Panodi
Sample 5	Umbari Balapur
Sample 6	Primpri
Sample 7	Pratapur,
Sample 8	Nimgav Jali

Material and Methods:

All the underground water samples were taken from 8 bore wells in selected station of Sangamner area in month of April 2020. Samples were collected in polythene bottles. These samples were analyzed by using standard methods APHA^{2,3}. pH was measured with the help of pH meter at 30°C. The pH meter is previously standardized with the help of pH buffers of 4.0 to 7.0 pH units.

Conductivity is measured with the help of conductivity meter. Total dissolved solid and alkalinity were determined by using soil water analysis kit. Dissolved oxygen and Biochemical oxygen demand were analyzed by using titrametric method. Calcium, Magnesium, chloride, carbonate analysis is done by using volumetric titration method. Sodium and potassium were analyzed by Flame photometry.

Results and Discussion

Alkalinity:

Total alkalinity of groundwater sample ranges from 105 mg/lit to 223 mg/lit. The high value of alkalinity is due to various salts like phosphate, borate, hydroxide, calcium, sodium, bicarbonate and high temperature in summer.

Table-2

Physico-chemical parameters of ground water in Sangamner region

Sr. No	Parameters	Sample-1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7	Sample 8
1	pH	7.02	6.80	8.35	7.80	8.56	8.70	9.10	7.97
2	EC mS/cm	927	1025	1470	1218	1279	2387	1138	894

3	TDS mg/lit	785	567	379	827	478	1319	1179	730
4	Alkalinity mg/lit	223	197	187	220	143	298	139	270
5	DO ppm	2.92	4.71	3.65	3.28	6.24	4.85	4.91	6.86
6	BOD ppm	3.99	3.66	4.26	2.96	4.16	3.74	3.55	3.14
7	Calcium mg/lit	176	201	192	155	198	187	224	238
8	Magnesium mg/lit	86	105	78	83	125	79	85	102
9	TH mg/lit	283	265	297	262	290	328	381	280
10	Sodium mg/lit	35	29	41	43	46	38	31	34
11	Potassium mg/lit	8	10	7	12	11	9	12	14
12	Carbonate mg/lit	3.1	4.2	2.7	3.7	4.9	3.5	5.2	4.7
13	Chloride mg/lit	241.8	140.5	174.1	194.3	235.0	287.3	187.5	310.1

pH: The pH value of ground water sample ranges between 6.8 to 9.1. The standard pH value for drinking water is in between 6.5 to 8.5 pH units⁵. The pH value of groundwater sample no.7, 8 show higher than prescribed limit and indicate that water is slightly alkaline.

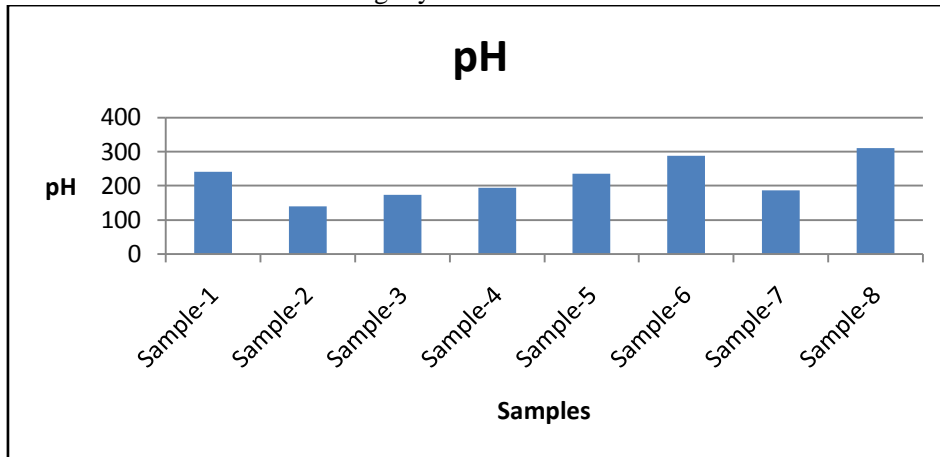


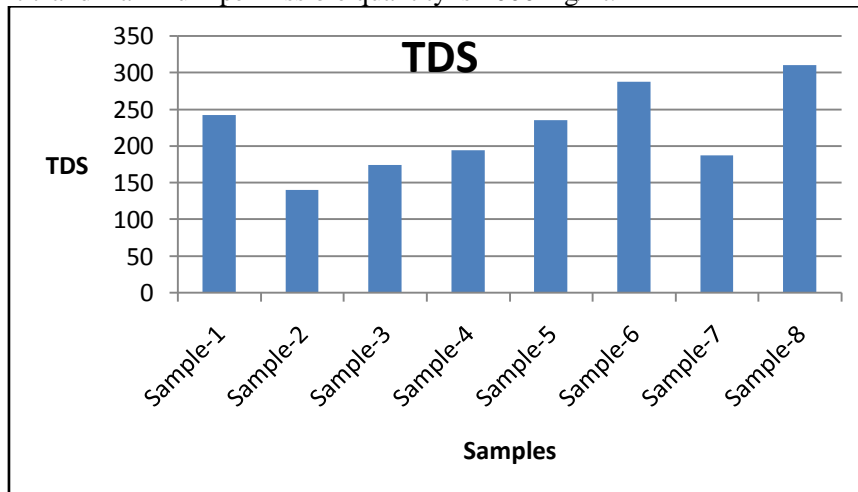
Figure-1 pH value of ground water samples

Electrical conductivity:

Electrical conductivity is useful tool to evaluate the purity of water. Electrical conductivity of ground water is varying from 810 mS/cm to 2556 mS/cm; prescribed limit of Electrical conductivity in drinking water is 2250mS/cm⁴. The sample no.6 having EC value greater than permissible limit.

Total dissolved solid:

Total dissolved solid means small amount of inorganic and organic matter that are dissolved in water. When the water sample is heated to dryness weight of residue left is TDS. TDS value of these water samples are in between 379 mg/lit to 1319 mg/ lit. The standard value for TDS up to 500 mg/lit⁷ and maximum permissible quantity is 2000 mg/lit.



Dissolved oxygen: The D.O content of ground water varies from 2.92 ppm to 7.36 ppm.

Biochemical oxygen demand:

The B.O.D of groundwater is ranges from 2.96 ppm to 4.97 ppm. The water having BOD less than 4 ppm are considered to be clean water, where as water having BOD greater than 10 ppm are considered to be polluted water.

Alkalinity:

Total alkalinity of groundwater sample ranges from 105 mg/lit to 223 mg/lit. The high value of alkalinity is due to various salts like phosphate, borate, hydroxide, calcium, sodium, bicarbonate and high temperature in summer8.

In the Sample no.6 (298mg/lit) and in Sample no.8(270mg/lit) having high value of alkalinity due to high temperature in summers or presence of calcium, sodium salts.

Calcium:

Calcium concentration in groundwater sample ranges from 155 mg/lit to 238 mg/lit. The observed range of values is within the limit approved by ICMR

Magnesium:

Magnesium concentration varies from 78 mg/lit to 125 mg/lit and these values are within permissible limit approved by ICMR

Total Hardness:

Total Hardness in water is due to calcium and magnesium and all other cations except alkali metals.Total Hardness is varying from 262 mg/lit to 328 mg/lit. The observed range of values are within the limit approved by ICMR^{3,10} except sample no. 7 are considered as hard water.

Sodium and Potassium:

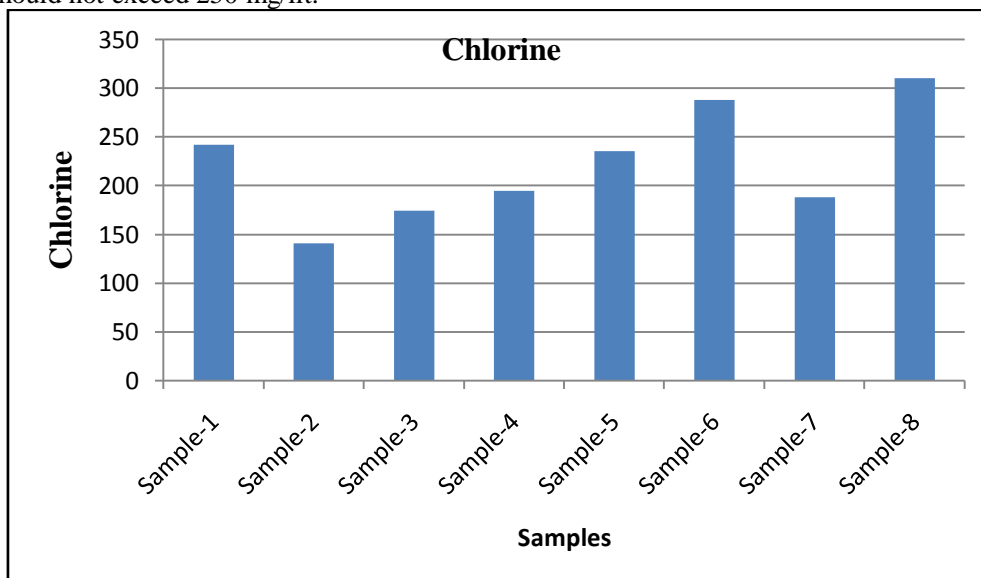
Large amount of sodium and potassium present in water, it combined with chloride to give salty test to water. If these are present in moderate quantity this water is useful for most purposes. Sodium concentration of groundwater samples is varying from 28 mg/lit to 46 mg/lit. Potassium concentration of groundwater sample is varying from 7 mg/lit to 13 mg/lit.

Carbonate:

Carbonate concentration of groundwater samples are varying from 2.7 mg/lit to 5.2 mg/lit.

Chloride:

Chloride concentration of groundwater sample is varying from 99.5 mg/lit to 310.1 mg/lit. The chloride concentration in groundwater above 100 mg/lit gives salty taste to water. Chloride when combine with calcium and magnesium may increase the corrosive activity of water. It is recommended that chloride content should not exceed 250 mg/lit.



Conclusion

The analysis of groundwater sample of Sangamner area shows that pH of sample no.7, 8 are above the prescribed limit. The sample no.5 have electrical conductivity greater than prescribed limit. Total Hardness of sample no. 7 has exceeded the prescribed limit .Calcium concentration in groundwater sample no. 6,7,8

are above the prescribed limit. These sample required treatments to minimize the contaminations. The value of all other parameters of groundwater samples are well within the prescribed limit.

References

1. Priscilla, Kerketta, Sushma Lalita Baxla, Ravuri halley Gora, Suruchi Kumari and Rustom Kumar Roushan, Analysis of physico-chemical properties and heavy metals in drinking water from different sources in and around Ranchi, Jharkhand, India, *Original research*, (2013)
2. APHA, Standard methods for the examination of water and waste water, *AWWA and WPCF*. (1998)
3. Vishal D Joshi, Prajwal R Shetty, Tekeshwar Verma, Vasant D Khasia and Narahari N. Palei, Physico-chemical analysis of ground water of selected area of Rajkot city, *Asian J. Research Chem.* **2(3)**, July-Sept, (2009)
4. Tatawat R.K. and Chandel C.P.S., Quality of ground water of Jaipur city, Rajasthan (India) and its suitability for domestic and Irrigation purpose. *Applied ecology and Environmental Research*, **6(2)**, 79-88 (2008)
5. ISI. Indian standard specification for drinking water *IS10500.ISI*, New Delhi, (1983)
6. Acharya G.D., Hathi M.V., Patel A.D. and Parmar K.C., Chemical properties of groundwater in Bhiloda Taluka Region, North Gujarat, India, *E-Journal of Chemistry*, **5(4)**, 792-796, (2008)
7. WHO. International Standards for Drinking Water, *WHO, Geneva*. (1994)
8. Hujari M.S., Seasonal variation of physico-chemical parameters in the perennial tank of Talsande, Maharashtra, *Ecotoxicol. Environ. Monitor*, **18(3)**, 233-242 (2008)
9. Kurup R., Persaud R., Caesar J. and Raja V., Microbiological and physic-chemical analysis of drinkingwater in Georgetown, Gayana. *Nat.Sci.*, **8(8)**, 261-265, (2011)
10. <http://www.icmr.nic.in>(2014).

Physico-Chemical Parameters of Drinking Water Supply Tank in Dhanore Village of Ahmednagar District

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Abstract

In present research physicochemical parameters of drinking water Supply tank in Dhanore region was taluka Rahuri district Ahmednagar was selected. The lake was constructed to supply clean and sustainable water to the village. Sample was collected at certain time interval throughout the year. In this research various physical and chemical changes occurring on the water in the selected area due to changes in climate, temperature was studied in January to December 2020. The parameters link pH, TDS, turbidity, alkalinity, chloride, salinity, phosphate was studied. In this analysis all analyzed parameters are compare to the permissible limit from this we have come to the conclusion that the water of this place does not contain any harmful pollutants which may affect the health of human and animal; therefore, it is suitable for the growth of potable, agricultural, small food processing industries, animal plants.

Keywords: Water supply tank. Monthly Analysis. Physico-chemical Criteria etc.

Introduction

India's self-sufficiency of food grains after the Green Revolution has been a major contributor to India's lack of agriculture, but now global warming, pollution and rainfall are declining due to various reasons. This is it. Their contribution is to quench the thirst of rural, urban, domestic and domesticated wild birds.

But the main source of this water is rain. But used in agriculture. Fertilizers, chemicals, medicines, sewage discharged in urban areas, discharged water in industrial estates. As a result, the natural quality of the water changes. As a result, the water is sometimes drinkable and sometimes unfit for drinking. Due to the use of contaminated water, people and animals are suffering from various diseases. This is very scary. Therefore, the quality of potable water was checked at regular intervals to maintain environmental balance. In this he examined the quality of its physical and chemical processes.

In the present study. The physical and chemical parameters of the pond of the water supply scheme supplying water to Dhanore village have been calculated. This lake is in the village of Dhanore. Rahuri tahsil is centrally located in the scarcity zone of Ahmednagar district in Maharashtra. Geographically, it is lengthy from 190 15' 00" N to 190 34' 00" N latitude and 740 23' 30" E to 740 50' 00" E longitude and is divided into the basins of river Mula and Pravara Its area is ten acres. On its right side, water is supplied from Pravara left canal.

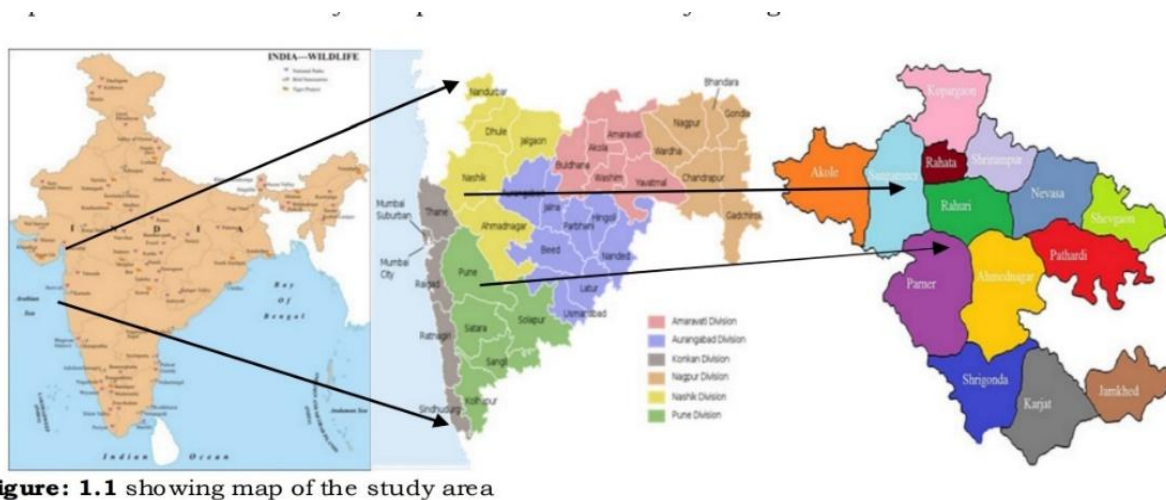
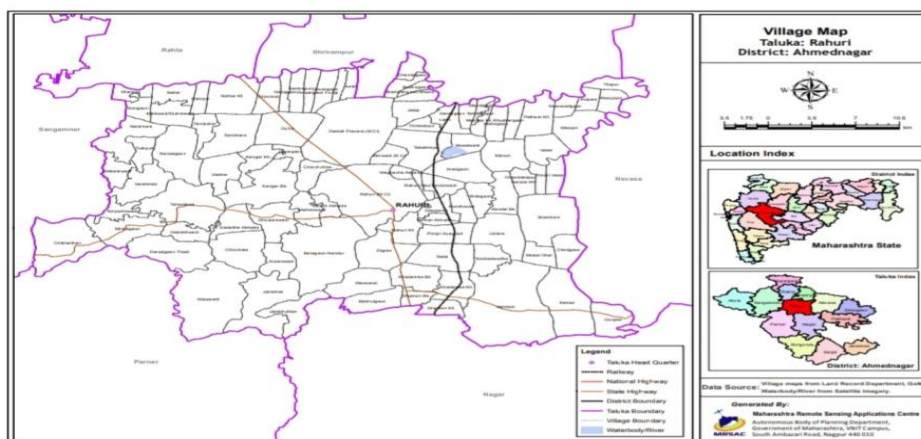


Figure: 1.1 showing map of the study area



Materials and methods.

Water samples from this pond Collected from four different stations every morning regularly collect water samples in a polythene bottle from 10 am to 12 noon on a regular basis for a month brought to the laboratory. It contains a variety of physicochemical parameters, water content, temperature. TDS, Electric Conductivity, DO, TDS, Free CO₂, hardness, salinity, chlorides, phosphate and nitrate were studied. To record the pH at the time of sample collection every morning. Thermometers and pocket digital pH meters were used.

1. Dissolved Oxygen (DO):

¾ Collect sample in BOD bottle ¾ 2 ml MnSO₄+ 2 ml Alkali iodide-azide+close stopper ¾ Mix well + allow the ppt to settle ¾ Add 2 ml concentrated H₂SO₄ + mix well till ppt dissolves ¾ Take 203 ml .(Correspond to 200 ml) sample in a conical flask+titrate against Sodium thiosulphate (0.025 N) till paleyellow colour + starch + titrate till blue to colourless Calculation ¾ 1 ml of 0.025N Na₂S₂O₃ = 0.2 mg of O₂ ¾ D.O. in mg/l =(0.2 x 1000) x ml of thiosulphate 200 Results : D.O. mg/

2. Total Dissolved Solids (TDS):

Determination of TDS based on conductivity A. Gravimetric method 1. Principle – The sample is filtered and the filtrate evaporated in a tarred dish on steam bath. The residue after evaporation is dried to constant mass at 103-105°C or 179-181°C

3. Ammoniacal Nitrogen:

By Titration Method 1. Principle – The sample is buffered & distilled and Ammonia absorbed in distillate is titrated with standard Sulphuric acid. The following table values are used for selecting sample volume for distillation. Nesslerization Method 1. Principle- The sample is buffered and distilled. The ammonia in the distillate or in the sample is treated with Nessler's reagent and the colour developed is matched with that of a series of standard ammonia solutions or measured photometrically at 400 to 425 nm

4. Boron:

Azomethine Method 1. Principle Reaction of azomethine-H, which is the condensation product of H- acid (8-aminonaphth-1-ol-3,6-disulfonic acid) and salicylaldehyde, with dissolved forms of borate at a pH of about 6, leads to the formation of a yellow complex that is measured spectrometrically at the absorption maximum in the range of 410 nm to 420 nm.

5. Chloride:

Argentometric method 1. Scope: This method prescribes the determination of chloride. This method is suitable for use in relatively clear waters when 0.15 to 10mg of chloride is present in the portion titrated. 2. Principle: In a neutral or slightly alkaline solution, potassium chromate can indicate the end point of the silver nitrate titration of chloride. Silver chloride is precipitated before red silver chromate is formed.

6. Magnesium:

Gravimetric Method 1. Principle: Diammonium hydrogen phosphate quantitatively precipitates magnesium in ammoniacal solution as magnesium ammonium phosphate. The precipitate is ignited and weighed as magnesium pyrophosphate. Below 1 mg/L atomic absorption Spectrophotometric method is desirable..Hardness

7. Alkalinity:

Principle: Alkalinity of water is the capacity of the water to accept protons. It may be defined as the quantitative capacity of an aqueous medium to react with WATER ANALYSIS 2016 105 hydrogen ions to pH 8.3 (phenolphthalein alkalinity) and then to pH 3.7 (total alkalinity or methyl orange alkalinity).

8. Sulphate:

Principle - Sulphate ion is titrated in an alcoholic solution under controlled acid conditions with a standard barium chloride solution, using thorin as the indicator.

9. Total Solid:

Principle- The sample is evaporated in a weighed dish on a steam-bath and is dried to a constant mass in an oven either at 103-105°C or 179-181°C. Total residue is calculated from increase in mass.

10. pH:

Principle – The pH value is determined by measurement of the electromotive force of a cell consisting of an indicator electrode immersed into the test solution and a reference electrode. Contact between the test solution and the reference electrode is usually achieved by means of a liquid junction which forms part of the reference electrode. The electromotive force is measured with a pH meter i.e. a high impedance voltmeter calibrated in terms of pH.

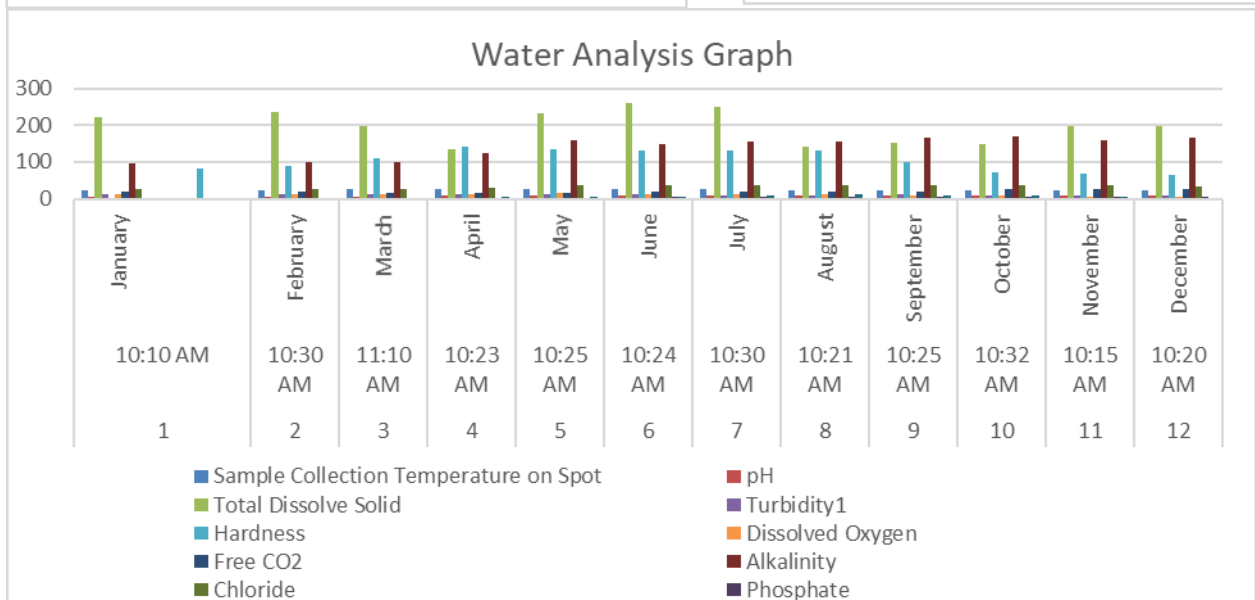
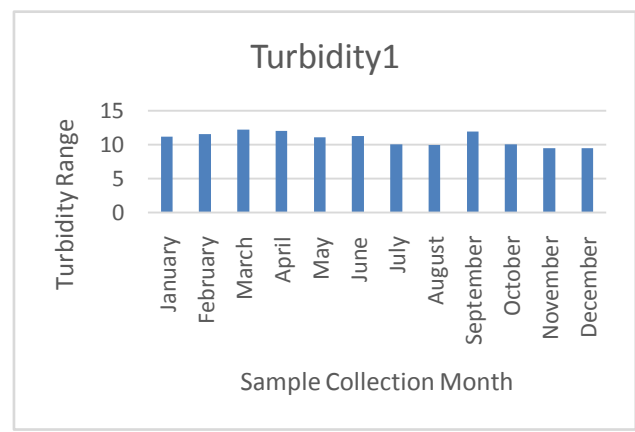
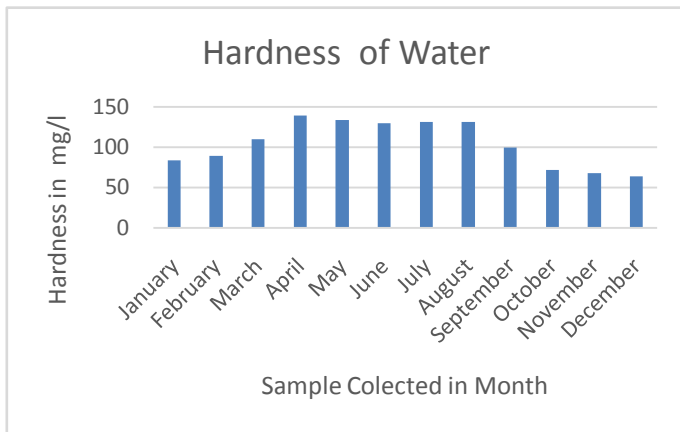
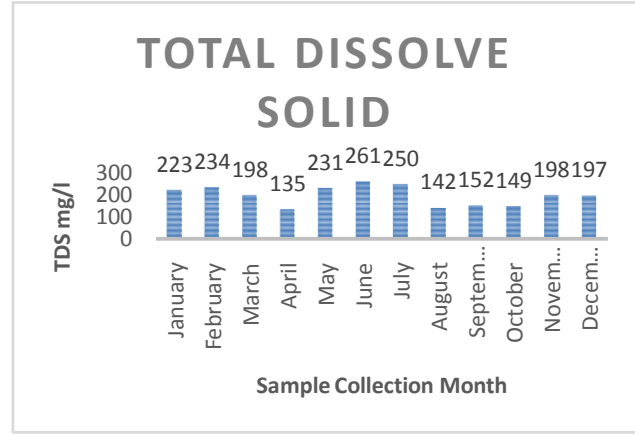
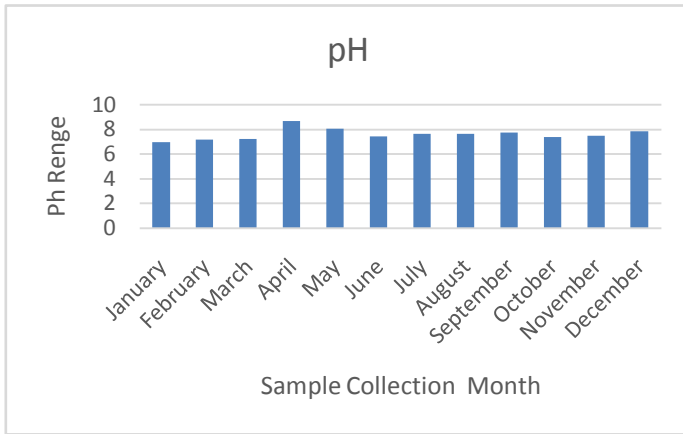
11. Turbidity

Principle - It is based on comparison of the intensity of light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension under the same conditions. 2. Interferences - Coloured solutes cause lowering of turbidity TDS (Trivedi and Goyal, 1986, APHA 1985).

Physicochemical parameters Analysis Table for Dhanore Water Supply Tank.

	Sample collection time	Month	Sample Collection Temperature on Spot	pH	Total Dissolve Solid	Turbidity1
1	10:10 Am	January	22	7.00	223	11.21
2	10:30 Am	February	23.6	7.21	234	11.61
3	11:10 Am	March	27.03	7.23	198	12.20
4	10:23 Am	April	28.10	8.70	135	12.10
5	10: 25 Am	May	27.00	8.10	231	11.13
6	10: 24 Am	June	25.23	7.45	261	11.32
7	10: 30 Am	July	25.00	7.68	250	10.10
8	10: 21 Am	August	24.20	7.65	142	10
9	10: 25 Am	September	23.10	7.75	152	12
10	10: 32 Am	October	23.31	7.42	149	10.10
11	10: 15 Am	November	22.00	7.52	198	9.52
12	10: 20 Am	December	22.21	7.85	197	9.54

	Sample collection time	Month	Hardness	Dissolved Oxygen	Free CO ₂	Alkalinity	Chloride	Phosphate
1	10:10 Am	January	84	12.0	18.00	96.6	26.0	1.98
2	10:30 Am	February	89	12.5	18.2	98.0	27.0	2.00
3	11:10 Am	March	110	11.90	17.34	99.65	26.4	2.45
4	10:23 Am	April	140	12.6	17.00	123.0	29.6	2.50
5	10: 25 Am	May	134	15.6	17.00	159	35.5	3.24
6	10: 24 Am	June	130	13.0	19.0	149	36.9	4.52
7	10: 30 Am	July	132	12.6	19.6	154	37.21	5.34
8	10: 21 Am	August	132	12.00	19.8	154	36.6	5.51
9	10: 25 Am	September	100	9.8	20.21	165	37.12	5.11
10	10: 32 Am	October	72	8.26	26.00	170	35.6	5.02
11	10: 15 Am	November	68	7.23	26.5	159	35.3	4.21
12	10:20 Am	December	64	7.22	27.3	165	34.6	4.01



Weather:

The water supply pond of your choice and its surroundings falls in the normal rainfed zone. The climate here is based on normal rainy season climate. The temperature here usually rises slowly after the month of March and it rises sharply till the month of May-April is usually the hottest month with the highest temperature rise. Normal leaves come in three climatic seasons in India Season. January February, February, March April, May June, June to July, August September November December. Winter, summer and monsoon are the main seasons in these months. Climate change occurs during this period, so whatever happens, it affects the water quality of the pond. The wind speed from June to October is 2.5 to 3.9 kmph. Per hour It is flowing. It is slowing down in winter. As winter approaches, the climate changes. The climate is clear and the temperature is low during this period, which also has some effect.

Water temperature:

The increased temperature of the water affects the physical chemical parameters. Also the temperature of the study area you have chosen is somewhat hot and mildly cold. The climate here is clean, dry and normal, so its temperature is carefully recorded while collecting water samples throughout the month. It rises to 25 in January and 36 in April. Its physico-chemical parameters are affected. Climate change (Salve and Highware, 2008)

Water surface:

Normally the pH of water should be 7.0 for health. Also the pH is higher in a few months. So in a few months the pH goes down. In the month of October Most of the biochemical and chemical reactions. The month of October is a mixed month because sometimes it rains and sometimes it rains a lot, so changes in the climate also lead to an increase in pH. The same body of water changes from March to April due to high temperatures. Rising temperatures cause a change in the carbon footprint (Carnth, 1987; Tiwari et al., 2009).

Dissolved oxygen:

Changes up to the value of DO mg / l. High values (.... mg / l) were recorded in May, while low values (.mg/l) were recorded in November. March-April is the hottest month. Therefore, intense heat raises the water temperature and increases the dissolution of oxygen.

Free carbon dioxide:

Free CO₂ detection is from mg / l ya value ... mg / l. The maximum value (... mg / l) was reported during the winter period (December) and (... mg / l) in the last days of winter, in the month of February. They were found in small quantities. Free carbon depends on the salinity of the water and the hardness of the water.

Hardness:

Hardness is normal leaf evaporation during high temperature when the temperature is high. Hardness is usually found in the range of 142-70mg.l. In summer (April) lotus value up to 142 mg / l. And in winter (October) at least recorded (Hujre, M.S., 2008).

Alkalinity:

The water solubility of the place you choose should be at least 96 -159 mg lt. This measurement is found. 159mg / l in summer season. It is found in 96 mg / l in winter season.

This changes as the amount of bicarbonate in the water increases. (Hujre, MS. 2008) It was also found to be less in winter and more in summer.

Chlorides:

These elements grow mainly in summer. These common leaves are found in at least 26-35.5 mg l in the area you choose. 35.5 in summer and 26.0 in winter. (Swarnalatha and Narsingh Rao, 1990)

Phosphate:

The main reason for the growth of phospet is that its source is rain water. The soil material carries many elements from the mountain and accumulates in the pond. Therefore, it was found that it increases in the rainy season and decreases in the winter. In our study 0.69 to 5.51 mg / l. To this extent they were found. 5.51mg / li during the rainy season mainly in August. In winter it is 0.69 mg

Conclusion:

In this analysis all analyzed parameters are compared to the permissible limit from this we have come to the conclusion that the water of this place does not contain any harmful pollutants which may affect the health of human and animal; therefore, it is suitable for the growth of potable, agricultural, small food processing industries, animal plants. During this twelve month period it was noticed during the examination of Physico chemicals. During the months of June to August, there was a great shortage of fresh water. Dust the soil with that water at that time. Crop particles are carried and as a result all pH, TDS, turbidity, alkalinity, chloride, salinity, phosphate parameters change. It also affects the quality of water during the summer and winter periods and therefore affettuoso.

Reference

1. Trivedi, RN Dubey, DP and Bharti, S.L. (2009): Hydro-geochemistry and Groundwater quality in Bihar river basin, Rewa District, Central Prakash, India, Prof. International Council Hydrology and Watershed, JN&T Hyderabad, pp.49-59
2. Hujre, MS (2008): Seasonal differences Physico-chemical parameters in perennial Talsande, tank in Maharashtra. Ecotoxicol .Atmosphere. Monitor. 18 (3): 233-242.
3. Swarnalatha, S and A. Narasingrao (1998): Environmental Study of Banjara Lake. References to water pollution. J. Envi. Biol. 19 (2): 179-186. 13. Arvind Kumar, (1995):

4. APHA (1985): Standard methods for Water and Sewage Test, 20th Edition, American Public Health Association, Washington d. C.
5. Gurunathan, A. Shanmugam, CR, (2006): Practice rights and their relevance Select Cases in Modern Tank Management: Tamil Nadu, Paper prepared for the workshop Title 'Water, Law and Commons' Held in Delhi from 8 to 10 December 2006 in accordance with International Environmental Law Research Center (ILERC).
6. Karantha, KR (1987): Groundwater Assessment Development and Management Tata McGraw Hill Publishing Company Ltd., New Delhi, 725 p.
7. Palanisamy, K. And r. Balasubramanian(1998): General property and private Prosperity: Tank vs. Tamil Nadu. Private wells, Indian Agricultural Economics Journal, Volume 53, No. 4, October - December.
8. Salve, V. B. And Hiware c. J. (2008): Study Wanparkalpa Reservoir Water Quality, Near Parli Vajjnath, District Beed. Marathwada Region, J. Aqua. Biol., 21 (2): 113-117. Some Immune aspects of freshwater Santhal's tropical wetlands. Pargana (Bihar) India, J. NV. Polling 2 (3): 137-141
9. Trivedi, R. K. And Goyal p. K. (1986): Chemical And biological methods for water pollution Studies, Environmental Publications, Karad, Maharashtra. 10) Karantha, KR (1987): Groundwater Assessment Development and Management Tata McGraw Hill Publishing Company Ltd., New Delhi, 725 p.
10. Basavaraj Sampi ,S.M. Hiremath ,K.N. Chanrashearappa, Anil N. Patel, E.T. Puttiah (2011) Analysis of Water Quality Using Physico-chemical Parameter Hosahalli Tank ink in Shimoga District, Karnataka, India Global Journal of Science Frontier Research

A Review: Milk Adulteration and Its Hazardous Impact on Consumer Health

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Abstract:

Milk is a good nutritious drink and is eaten for drinking as such, as well as by milk products, by a majority of the population worldwide. However, the practice of adulteration of milk is a global concern and a social problem worldwide, especially in developing countries. The adulteration of milk invariably reduces its quality and introduces hazardous substances leading to serious health hazards for consumers. Increased demand, competition and financial gain are predisposing for malpractices, wherein substances such as extraneous water, foreign proteins, whey proteins, melamine and urea, vegetable or animal fat, starch, salt, soap, detergents, skim milk powder, formalin and hydrogen peroxides are commonly used. In this brief review, the adulteration of milk and their health hazards on consumer health are discussed.

Keywords: Milk, Milk safety, milk adulterant, Urea, starch, Common Salt, Sugar.

Introduction:

Milk is a compulsory part of the expectant mom's daily diet as well as growing infants. Due to its unique nutritional value and its important role in human and animal health, milk is very important. In its most easily attackable shape, it has all the substances needed by species. Milk is recommended for young and old people, because of its nutritional value (Reddy et al., 2017).

Milk is the best and cheapest source of nutrition and used by all the age groups in rural as well as in urban areas. It provide appreciable amount of fats and protein and also provides body building vitamins along with furnishing energy giving lactose and many other nutrients, therefore an ideal food for pregnant female and infants. Milk is essential to provide nutrients to maintain health and normal growth of body. Adulterations of milk and dairy products have brought serious risk to human health as well as enormous economic losses to the food industry. Considering the different type of adulterants possibly mixed in milk, such as melamine, urea, antibiotics, sugar/salt and so forth, a rapid, widely available, high-throughput, cost-effective method is needed for detecting each of the components in milk at once (Abdul *et al.*, 2014).

In order to keep milk temporarily fresh, some unethical methods are usually adapted to prevent the financial losses due to the spoilage of milk during its transportation and sale. For instance, the water is added to increase volume of milk, thickening agents like starch, flour, skimmed milk powder, whey powder or other ingredients to prevent the dilution effect and extend the solids content of the milk. Vegetable oil, sugarcane or urea to compensate the fat, carbohydrate or protein content of diluted milk that leads to hazard. Some chemicals such as hydrogen peroxide, carbonates, bicarbonates, antibiotics, caustic soda and even the most lethal chemical formalin to increase the shelf quality of milk, detergents to enhance the cosmetic nature of milk which give foamy appearance and whitening of milk that lead to gastro-intestinal problem.

What Is Adulteration?

Food is the basic necessary for life. At the end of the day, many of us are not sure what we eat. We may be eating some dangerous dye, sawdust, soap stone, industrial starch, and aluminum foil and so many other things that unknown for us. Contaminated foods and drinks are common sources of infection and illness. Hence, we invite diseases rather than good health. Food adulteration takes into account the intentional addition, substitution and abstraction of substances which adversely, affect nature, substances and quality of foods, but also their incidental contamination during the period of growth, harvesting, storage, processing, transport and distribution. Food is adulterate if its quality is lowered or affected by due to addition of substances which are injurious to health or by the removal those substances which are nutritious. So it is defined as, "the act of institutionally debasing the quality of food offered for sale either by the admixture or substituted of inferior's substances or by the removal of some valuable ingredient". Adulterations food including milk is dangerous because it may be poison and can affect health & it could deprive nutrients essential for proper growth and development. Hence, the current review highlights the milk adulterants, their detection and their hazards on health of consumers.

Milk adulteration is achieved to increase its thickness, then adding starch and other reconstituted milk powders to increase its viscosity. Often used to improve the shelf-life of filthy milk ice and other chemicals such as hydrogen peroxide, carbonates, bicarbonates, antibiotics, caustic soda and even the most

deadly chemical formalin. Urea adulterated milk is very dangerous to the children, as it accelerates the puberty process (Bania et al., 2001).

How is processed packaged milk reliable?

Pasteurization & processing of milk, improves the milk quality by killing pathogenic microbes and other micro-organisms that are present in the raw milk. Controlling with the use of reliable & advanced technology, brands provides high quality and great taste of milk. Milk undergoes various type of heat treatment like high temperature-short time (HTST) pasteurization or ultra-high temperature (UHT) treatment.

HTST pasteurization of raw milk is done to improve shelf life up to 48 hours when stored at refrigerated conditions. Ultra- high temperature (UHT) sterilization of raw milk is done to improve shelf life 3 to 6 months at room temperature. In HTST pasteurization process, the milk is heated at 72 degrees Celsius for 15 seconds, immediately after which it is cooled to less than 4 degree Celsius. Such pasteurized milk is then packaged in hygienic containers. On the contrary, The UHT process, milk is heated for a very less time - just about a second or two at a temperature between 135 to 145 degrees Celsius. This is followed by cooling to ambient temperature and then packaged in bottles or packs under sterile condition. With the quality and safety standards and superior taste of its packaged dairy products, we assured on the products. Under current guidelines set in 1954, only milk from cow, sheep, buffalo and goat is considered for the standard not of camel and yak. "There is a need to revisit old standards to ensure people eat and drink quality food," said Pawan Agarwal, CEO, Food Safety and Standards Authority of India, the country's food-safety regulator (FSSAI 2016).

Typical Adulterants and Their Health Problems on Humans

A) Water: Water is the most common adulterant in milk (Barham GS, et.al.2014). The major percentage of natural milk contains water (87%), but milk with added water is a serious concern. In one hand it decreases the nutritious value; on the other hand, chemicals are added to compensate the density and colour after dilution with water. Since addition of water is the easiest way and cheap source for adulteration of milk. But if contaminated water and color chemicals are added to milk, it is a serious health concern to the milk consumer.

B) Urea: Add half teaspoon of soybean or arhar powder in a teaspoon of milk in a test tube. Mix up the contents thoroughly by shaking the test tube. After 5 mins, dip a red litmus paper after half a minute, change in color from red to blue indicates the presence of Urea in milk. Health hazards associated are acidity, indigestion, ulcers and cancers. Urea is harmful to heart, liver and kidneys (Trivedi UB, et.al.2009) especially for kidneys as the kidneys have to do more work to remove urea from the body (Kandpal SD S. A.,et.al. 2012).

C) Detergents: To emulsify and dissolve the oil in water, detergents are added that give a frothy solution, the characteristic white colour of milk. They improve milk's cosmetic character. Addition of such chemicals will cause health problem especially related to gastrointestinal and kidneys. Detergent is added to milk to increase the foaming of milk and thus to have thick milk. Shake 5-10 ml of sample with an equal amount of water and lather formation indicates the presence of detergent.

D) Starch: Starch is one such component that is added to increase SNF content in milk. The test to detect starch in milk uses iodine solution, addition of which turns the milk solution to blue black color due to the formation of starch-Iodo complex, in the presence of starch. Tincture of Iodine or Iodine solution is used to detect starch adulteration in milk. Presence of blue color indicates the presence of Starch.

E) Sugar: Generally sugar is mixed in the milk to increase the solids not fat content of milk to increase the lactometer reading of milk, which was already diluted with water. Lactose is the common sugar present in milk. The fat content of the milk is more as compared to the protein content. Sugar like sucrose is added to the milk to increase the carbohydrate content of the milk and used to increase the density of milk.

F) Melamine: Melamine is added to milk and milk powder to increase protein content falsely. It causes renal failure and deaths in extreme cases (Cheng et al., 2010).

G) Neutralizers: In synthetic milk, NaOH is often used to neutralise the acidic effect. In India synthetic milk is a common problem that is prepared by adding urea, caustic soda, refined oil and common detergents. For those suffering from hypertension and heart ailments, caustic soda contains sodium and serves as a slow poison. Caustic soda deprives the body of the use of lysine, an essential amino acid in milk which grows babies need. Such artificial milk is unsafe to all, but harms pregnant women more (Bhatt et al., 2008).

H) Chlorine: It is added to compensate the density of the diluted milk after addition of water. Chlorinated milk can cause clogging in arteries and develop heart problem (JG., et.al 2000). Chloride in the milk disturbs the acid base balance in the body and also blood of pH.

D) Food colours: Often several food colouring agents are introduced to enhance appearance and have dangerous health effects.

J) Milk powder: Milk powder is used as adulterant is added in fresh milk. This is done for economic advantage when a country has milk powder in excess or subsidy is provided for dried powder milk (Guan RF, et.al. 2005).

K) Preservatives: Micro-organism production spoils the milk and spoiled milk isn't good for health. The milk can be protected for a long time by boric acid, formalin, sodium carbonate (Na₂CO₃), sodium bicarbonate (NaHCO₃), salicylic acid, benzoic acid, sodium azides and toxic effects that can lead to death. It induces stomach pain, diarrhoea, vomiting and other symptoms associated with poisoning.

Detection of Milk Adulteration: Various milk adulterants and the method used to detect those adulterants are presented.

Table No. 1: Detection of different consumable adulterants in milk

Sr.no.	Adulterant	Procedure	Observation
1.	Sugar	Take a taste of 10 ml of milk in a test tube. Add just 5 ml of conc. HCl and resorcinol at 0.1 g. Place the test tube in a bath of water for 5 minutes.	A red colour appearance suggests that added sugar is present.
2.	Starch	Test 3 ml of milk in a test tube. Cool it to room temperature after stirring thoroughly. Add 1 percent iodine solution with 2 to 3 drops.	A blue colour appearance suggests the presence of starch.
3.	Detergents	Take 2 mL of milk sample into a 10 mL test tube. Add 0.5 ml of Methylene blue dye solution and 1 ml chloroform and centrifuge at about 1100 rpm for 3 min.	More intense blue color in lower layer indicates presence of detergent in milk while more intense blue color in upper layer indicates absence of detergent in milk.
4.	Water	The presence of water can be by putting a drop of milk on a polished slanting surface.	The drop of pure milk flow slowly leaving a white trail behind it, whereas milk adulterated water will flow immediately without leaving a white trail.
5.	Glucose	Take a taste of 1 ml of milk in a test tube. Apply 1 ml of Barford's updated reagent. Heat the mixture in a bath of boiling water for precisely 3 minutes. Refrigerate easily under tap water. Shake well and apply 1ml of phosphomolybdic acid.	The sudden presence of a deep blue colour suggests that glucose is present.
6.	Skim milk powder	Add nitric acid drop by drop in to the test milk sample.	The development of orange colour, it indicates the milk is adulterated with skim milk powder. Samples without skim milk powder shows yellowcolor.
7.	Neutralizers	Take 5 ml of milk in a test tube and add 5 ml alcohol followed by 4-5 drops of rosalic acid	If the colour of milk changes to pinkish red, then sodium carbonate /bicarbonates are presents.
8.	Common salt	Take a sample of 5 ml of milk into a test tube. Add 1 ml solution of 0.1 N silver nitrate. Mix the contents thoroughly and apply 10 % potassium chromate solution of 0.5 ml	The yellow colour appearance suggests the presence of added salts, while the brick red colour shows the milk free from added salt.

Conclusion:

On the basis of this review, we can conclude that, the milk adulteration is becoming serious problem for public health concern. Although financial profit is considered to be one of the major reasons for milk adulteration, inadequate supply for the increasing population all over the world has paved the ground for this as well. Although maximum percentage of milk delivered to the consumers is not as per FSSAI standards. Consumption of adulterated milk may lead to serious human health issues due to adverse effects of chemicals. Hence it is important to have an efficient and reliable quality control system like HACCP that will regularly monitor, combined efforts from scientific communities and the regulatory authorities. The human and technology interface, awareness and access to information can play vital role in eradication of the milk adulteration. This review paper offers a summary of the various elements used in the adulteration of milk, the adulteration technique, and an in-depth analysis of the electrical methods adopted for the adulteration of milk. The review paper is intended to help researchers get an overall understanding of the adulteration of milk and its methods of detection.

References

1. Reddy, D. M., Venkatesh, K., & Reddy, C. V. S. (2017). Adulteration of milk and its detection: a review. *International Journal of Chemical Studies*, 5(4), 613-617.
2. Abdul Aziz Soomro, Muhammad Khaskheli, Muhammad Awais Memon. Study on adulteration and composition of milk sold at badin. *International Journal of Research in Applied, Natural and Social Sciences*. 2014; 2(9):57-70.
3. Bania, J., Ugorski, M., Polanowski, A., & Adamczyk, E. (2001). Application of polymerase chain reaction for detection of goats' milk adulteration by milk of cow. *Journal of Dairy Research*, 68(2), 333-336.
4. <http://www.fssai.gov.in> Food safety standards authority India (FSSAI) 2016
5. Barham GS, K. M. (2014). Detection and Extent of Extraneous Water and Adulteration in Milk Consumed at Hyderabad, Pakistan. *Food Nutr Sci*, . 2: 47-52.
6. Trivedi UB, L. D. (2009). Potentiometric biosensor for urea determination in milk. . *Sens Actuators B Chem*, 140: 260.
7. Kandpal SD, S. A. (ed.al.2012). Estimation of quality of raw milk (open & branded) by milk adulteration testing kit. *Indian J Community Health*, 24; 188-192.
8. Cheng Y, Dong Y, Wu J, Yang X, Bai H, Zheng H *et al*. Screening melamine adulterant in milk powder with laser Raman spectrometry. *J Food Composit Anal*. 2010; 23(2):199-202.
9. Bhatt, S. R., Singh, A., & Bhatt, S. M. (2008). Assessment of synthetic milk exposure to children of selected population in Uttar Pradesh, India. *Indian Journal of Research*, 7, 22-34.
10. JG., H. (et.al 2000). The Negative Health Effects of Chlorine. . *The Journal of Orthomolecular Medicine*. , 224-248.
11. Guan RF, L. D. (et.al. 2005). Use of fluorometry for determination of skim milk powder adulteration in fresh milk. . *Journal of Zhejiang University Science*. , 6(11):1101-1106.
12. (Ed.), D. G. (et.al.2005.). *Manual of Methods of Analysis of Foods: Milk and Milk Products*. Ministry of Health and Family Welfare, Government of India.

An Analytical Study of Demonetization

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Abstract: *'Demonetization' is an important term in the affairs of currency and finance. It is the act of changing available currency and introducing new one or replacing available currency with new notes or coins. In simple language it means stopping available notes and coins officially. The act of Demonetization can stop old notes and coins and government can bring in use new and suitable currency for that particular era either in the form of notes or coins. In the world 'Demonetization' has been done by various countries several times. As we know change occurs in every country as far as time passes. There is no option for change and everyone has to change according to time. Nobody can get stuck into the old and outdated things forever. Demonetization is also one of the required activities for every country to maintain the finance affairs in well manner. The present paper aims at giving information about the term 'Demonetization' in simple language. It also takes review of 'Demonetization' happened in the world. Finally it talks about the impacts of it.*

Key Words: Demonetization, Currency, Notes and coins, finance affairs, impacts etc.

Introduction:

Demonetization is one of the most talked topics of the past few years. The meaning of demonetization is to replace the existing currency with a new one and to ban the older currency in any type of financial circulation. Demonetization is not an unusual thing to Indian and the globe. Because of several reasons several countries have banned the existing currency notes and coins. Most of the time the main reason for demonetization given by various countries is to stop the printing of fake currency notes. So it becomes very important to keep the notes and coins unstable. By this act the possibility of making fake notes reduces though in these efforts the government can be successful or unsuccessful but it becomes prior to take step towards stopping the print of fake notes.

History of Demonetization:

In India the act of demonetization is not new the various Indian governments have taken the decision of demonetization several times. It was in the year 1946 and in the year 1970's the country for the first time had implemented the act of demonetization. In January 1946, 1000 Rs, 5000 Rs, and 10,000 Rs notes were banned although they were reintroduced in 1954.

On January 16, 1978, the currency of Rs 1,000, Rs 5,000 and Rs 10,000 became illegal for the second time after the government's order and Wanchoo committee's suggestion. Propose of demonetization at both of the times were to clamp down the black money.

In November 2016, when the Modi Government took the decision of demonetizing the notes of Rs 500 and 1000 were banned and the purpose of it was to clamp down the black money and to point out the tax thieves.

Aim:

The broad aim of the present research paper is to give brief information about the term 'Demonetization'

Objectives:

- To give information about emergence, definition, and development of 'Demonetization'
- To study the concept 'Demonetization' in detailed
- To spread literacy about the term 'Demonetization'
- To catch attention of readers, researchers and teachers towards the act of 'Demonetization' in the world
- To highlight the impact of 'Demonetization' on various sectors

Research Methodology:

Since the research is application-oriented, the present study will follow the following methodology.

Using the concept 'Demonetization', available information about the concept will be collected and the data will then be analyzed to come to the conclusion. Considering the nature of the subject, the researcher found that the term 'Demonetization' is an important phenomenon in recent time and hence it is necessary to write about it. Library work and analysis of data will be followed as methodology of the research study.

Literature Review:

Many researchers have written on the term 'Demonetization' but very few researchers have given very important and valuable information about it in the form of Research Papers, Articles and Theses. The research Paper entitled "Demonetization and its Effects in India" written by Lokesh Uke and submitted to Dr. Hari Singh Gour University, Sagar MP. In this paper the researcher talks about the term demonetization and then it talks about the effects of it on various sectors. The research paper entitled "Impact of demonetization on Indian economy" written by Dr. G Ganesan and B Gajendranayagam deals with the negative impact of demonetization on Indian economy. Sukanta Sarkar (2010) conducted a study on the parallel economy in India: Causes, impacts & government initiatives in which he focused on the existence of causes and impacts of black money in India. According to him, the main reason behind the generation of black money is the Indian Political System i.e. Indian govt. just focused on making committees rather than to implement it. So, he concluded that laws should be implemented properly to control black money in our economy.

Scope and Limitations of the Study:

The nature and scope of the concept 'Demonetization' is a vast area of study. For practical purposes, the researcher has chosen to concentrate only on the study of Emergence, Definition and Impact of the term 'Demonetization' in present times.

The scope of this study is to highlight the term 'Demonetization' is an important term to the common readers, economists, researchers, teachers and various people related to economics. For the sake of conveniences, the researcher has bound himself only to the Emergence, Definition and Impact of 'Demonetization'. It does not provide any comparative study with any other terms related to economics.

Emergence of the term Demonetization:

The word *Demonetization* is derived from the French word *Demonetiser*. It means 'to legalize as money'.

Definition of the term Demonetization:

Throughout this Research Paper the term "Demonetization" is used and so there is a great need to define it. There are several definitions of the term Demonetization have been given by various scholars.

In the *Oxford English Dictionary* (1989) the term "Demonetization" is defined as

- 1) "It is the act of stripping a currency unit of its status as legal tender. It occurs whenever there is a change of national currency: The current form or forms of money is pulled from circulation and retired, often to be replaced with new notes or coins"
- 2) "Demonetization is an act of cancelling the legal tender status of a currency unit in circulation."

Impact of Demonetization:

It can have various positive and negative impacts in every nations. The impacts can studies under the following heads.

- 1) Impact on industrial Sector
- 2) Impact on small scale business
- 3) Impact on stock market
- 4) Impact on currency valuation
- 5) Impact on agriculture sector
- 6) Impact on cottage industries
- 7) Impact on foreign trade and FDI
- 8) Impact on domestic employability
- 9) Impact on financial system
- 10) Impact on taxation
- 11) Impact on real estate

Conclusion: The main reason behind demonetization in most of the countries is to control black money. Several countries have changed their currency in order to reduce corruption and to stop printing of fake notes. India has also witnessed demonetization several times but the demonetization happened in the year 2016 was striking one. The main reason shown by the government to change the currency was to control black money but unfortunately they didn't get what they were thinking. It had adverse effect than positive one, it has impact on several sectors in India like cottage industries, cotton industry, IT industry, real estate etc. So many small scale industries suffered a lot after demonetization. Most of the underdeveloped and less developed countries get affected by demonetization. The recent examples are of the nations like Zimbabwe, Venezuela, India etc..

References:

1. Alpana Killawala, Principal Adviser PRESS RELEASES Government of India vide their Notification no. 2652 dated November 8, 2016
2. Demonetization Pdf – Pros and Cons of Demonetization Rs 500,1000- Demonetization Essay - <https://www.studydhaba.com/demonetization-pdf> retrieved on 3rd March, 2017. Abhinav National Monthly Refereed Journal of Research In Commerce & Management VOL. 14 6, ISSUE 6 (June, 2017) Online ISSN 2277-1166
3. "Demonetisation leads to highest ever surrender of Maoists in a month - Times of India".
4. "Demonetization: Government not mourning over 100 deaths due to cash-crunch, says Opposition - Latest News & Updates at Daily News & Analysis". 8 December 2016.
5. Dipankar Dasgupta , Theoretical Analysis of ‘Demonetisation’ Economic and Political Weekly Vol. 51, Issue No. 51, 17 Dec, 2016
6. "E-commerce firms see 30% decline in cash on delivery orders post demonetisation". The Hindu. 2016-11-16. ISSN 0971-751X. Retrieved March 3, 2017
7. "E-commerce cash-on-delivery orders down by up to 30 per cent". The Indian Express. 2016-11- 17. Retrieved March 3, 2017
8. Manpreet Kaur Demonetization: Impact On Cashless Payemnt System International Journal of Science, Technology and Management (IJSTM) vol.no.-6 issue no. January 2017
9. https://rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=38520 retrieve on March 3, 2017
10. Reddy, R. Ravikanth. "Upset over price slump, farmer dumps lorry load of tomatoes". Retrieved March 3, 2017
11. "Saha, Manojit; Rukhaiyar, Ashish (13 November 2016). "Micro lending badly hit; surge in use of cards". The Hindu.

The Variety of Themes in Vijay Tendulkar's "The Vultures"

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Abstract: The 1960s witnessed innovations and experiments in Indian drama in English by leading playwrights of various Indian languages like Mahavir Bharati, Mohan Rakesh, Vijay Tendulkar, Badal Sircar and Girish Karnad. Majority of the authors wrote in their own mother tongues and it was made available all over India through translation in English. Thus a new genre in literature came forth as Indian Drama in English Translation. One of the dynamic contributors of the Indian drama is Vijay Tendulkar. He wrote vigorously in his mother tongue, Marathi and was the most criticized author in Marathi literature. The contemporary Maharashtrian society could not bear his severe attacks on the social institutes like education, marriage, joint families, etc. His focus was on the social and cultural drawbacks in the middle-class families. In the Vultures, he has shown the beastly nature of a bourgeois family through their immorality, selfishness, hatred, brutality and money-mindedness.

Keywords: Culture, society, degeneration, immorality.

Introduction:

Literature is a reflection of life. All forms of literature, especially, drama throws light on the realistic conditions of society in all aspects. India has an ancient tradition of Sanskrit plays initiated by Bhasa, Kaalidasa, Bhavbhuti, etc. In due course, drama developed in all parts of the world. In India, the modern and post-modern era, witnessed various types and developments in drama. A lot of changes in the form, themes and techniques of drama were experienced in the 1960s. These modern playwrights represented the real picture of the contemporary Indian society. They experimented in themes, techniques and patterns of the theatre. They tried to expose the real nature of man and his struggle with the social, cultural and spiritual values. The experimental movement in drama was led by four playwrights - Badal Sircar in Bengali, Girish Karnad in Kannada, Mohan Rakesh in Hindi and Vijay Tendulkar in Marathi.

The industrial developments and resulting urbanization gave rise to a new class of people, known as middle class. The selfishness and alienation of the modern man, gave rise to cruelty and physical, verbal and psychological violence. This badly affected the social values, culture and morality of the masses. A wave of dissatisfaction about the existing customs and traditions increased immensely in the society resulting in the desire for change and reformation of the age-old traditions and culture. Vijay Tendulkar threw light on all these aspects of social, cultural and spiritual bankruptcy of the social institutions and manners. The themes of Tendulkar's writing were growing materialism, hostility, hypocrisy and dehumanization of man. He was aptly called "The Angry Young Man of Marathi Theatre".

Tendulkar condemned the immoralities and collapse of the social order, value system and principles in his critically acclaimed play "The Vultures". The major theme is degradation along with inhuman treatment given to the women and sibling jealousy. It is seen through drunkenness, greed, sexual harassment and loss of family ties. The play exemplifies the modern man, devoid of cultural and social values. The major characters in the play like Mr. Hari Pitale, Ramakant, Umakant and Manik depicts inborn violence, selfishness, sensuality and wickedness. Their actions like strangling, beating, screaming and murdering are like the vultures. Their fight for wealth is like hungry beasts. So the atmosphere of the play is also filled with suspicion, disbelief and cruelty. The family members vibrate the social as well as the moral and cultural norms.

The Paper:

"The Vultures" was originally written in Marathi as "Gidhade" in 1961. It faced many censorship problems and could not be staged for several years due to its controversial theme of power hunger, immorality, degeneration and violence. It was first staged in 1970 which portrayed the darker side of humanity and showed the inborn violent instincts. Greed, drunkenness, wickedness, selfishness, sensuality and sibling jealousy are the signs of degeneration. It is suggested through social, moral, cultural and spiritual deprivation. Tendulkar depicts all these things in the vultures through the members of Pitale family. It was translated into English by Priya Adarkar.

The play opens with the setting of a house that looks like a worn-out, hollow of a tree, resembling the den of vultures. It symbolizes the inhumanity, immorality and cruelty of its inmates. But in contrast to this, there is an altar of sacred basil, *tulsi-vrindavan* in the small courtyard. This setting is typical of a

middle-class house giving importance to the basil plant like a goddess. In Hindu culture, this tradition to plant and worship the basil in the yard and enlighten lamp near it, is well-known. It is considered as a good sign of prosperity, serenity and purity. The green light over the tulsi-vrindavan suggests hope and positive energy.

The title of the play *The Vultures* represents the merciless and furious tendencies in humans. A vulture is a bird of prey that eats the flesh of dead animals. Just like that a person, who feeds on others' sufferings, is a vulture in human form. The play is about the complex, interpersonal relationship of the Pitale family. The head of the family is Mr. Hari Pitale who is addressed as Pappa. He has two sons, Ramakant and Umakant, a daughter, Manik and an illegitimate son, Rajaninath. The selfish, greedy, cruel and shrewd Pappa, Ramakant, Umakant and Manik are vultures. Their words and actions prove this fact. The cruelty, greed and cunningness of the vultures are shown in all the members of Mr. Pitale family except Rama and Rajaninath. Rama is a typical, middle class Indian housewife. She follows all the rules and regulations of patriarchy like respecting elders, following their orders, fulfilling her household duties, worshipping and submissively accepting every word of her husband. She even considers him as a God-like figure. She never breaks his wishes and visits many spiritual gurus for the boon of motherhood. But the real reason was her husband's impotency due to over-drinking. Finally, she finds a solution to this problem by establishing an illicit relation with Rajaninath. Rajaninath is also a kind, sensitive and good-natured person like Rama. He is lonely, neglected and hated by his step-siblings. He could see through them and understand the silent suffering of Rama. He is very sensitive and sensible poet as well as human being. Rama's affection for him shapes a healthy and friendly relation between them. Both have the power to create, in contrast to the destructive nature of the others. Rajaninath understands Rama's urge to become mother. They enjoyed physical love only once, but its fruit is borne by Rama in her womb. She was very happy, but there was also a burden of breaking the cultural and traditional boundaries of sleeping with another man. In the Indian culture, cheating the husband and enjoying sexual pleasure with another fellow is considered as a sin. Such a fallen woman would be punished by Gods and sent in the hell. So she is tormented with these thoughts and could not face herself. She was not at all individualistic and self-centered like the other members of her family. But, her sister-in-law, Manik is totally morally degraded. She was unmarried and a flirt. She uses slang language, smoked and drank like her father and brothers. She was careless with the fact of becoming pregnant with her lover, Raja of Hondur.

Ramakant and Umakant loved gambling and drinking. They ruined the business set by their father and uncle with their use of indecent language, supply of inferior quality of goods, lust for money and illegal deals. Hari Pitale cheated his brother and threw him out of the business. The same cruelty and barbarism is found in his children with the belief in getting a desired thing by hook or by crook. They scared him and beat him to gain more money from him. They also drove him out of his own house. It was a severe blow to the Indian tradition of happy joint-family. Pappa, Ramakant, Umakant and Manik get punished as they move away from the path of truth and honesty.

In the ancient Indian society, the women were treated like Goddesses, worshipped and respected. But slowly, the society started degrading and patriarchy ruled over the Indian society. The women have lost their high-ranked position. The male, with their physical and mental strength, started dominating women. They subjugated, mistreated and victimized her. Rama is the best example of this fact. She is an ideal Indian woman – innocent, kind, dutiful and submissive. But no one understands her real worth, except Rajaninath. She suffers silently the mental torture as a typical traditional Indian woman. Her only desire was to become a mother which remained unfulfilled due to her impotent husband. So she breaks the convention and becomes pregnant with Rajaninath's child. She accepts immorality for the first time to have her right of becoming mother and to win over the grief of being childless.

In contrast, Rama's sister-in-law, Manik is an unconventional and modern woman. She tiptoed in the westernized pattern of life by attending parties, smoking and drinking. She sleeps and wakes up late, quarrels with her brothers, scolds them and suspects them as opportunists and murderers. But she helps them to get money from their old father. They beat him and throw him out of his own house. After this, the selfish Ramakant and Umakant make a plan to blackmail the rich, old lover of Manik, the Raja of Hondur. They break her leg; they also tried to poison her and even abort her when her lover dies in an accident. She runs away from the house to save her life. But she comes back to avenge by attempting to kill Rama's foetus. Finally, Umakant makes Ramakant aware of his wife's illicit relation with their half-brother Rajaninath. Infurious Ramakant scolds and beats Rama severely and aborts her child. Rama becomes a living corpse, but drags herself after her husband when he locks the house and decides to go away to shield himself from the wrath of his creditors. Rama is bound by the cultural norms of the society and follows her

brutal husband against her wishes. There is sheer darkness in her life and on this sadistic note, the play ends.

Conclusion:

Through *The Vultures*, Tendulkar has depicted the bestiality in man. He has successfully portrayed the darker side of human beings and the animal instincts inside them. The betrayal of Sakharam, his own brother in business by Hari Pitale shows the loose bonds of modern Indian family. The aftermath of it is the degeneration and breaking of values by his children. The distrust, fear and tragic atmosphere are heightened by the background sound of the screeching of the vultures. The impact of industrialization, materialism and western individualism along with its vices like selfishness, money-madness and brutality is aptly reflected in this play. The behavior, words, feelings and actions of the vulture-like humans is a proof of this fact. The breaking up of the familial values of love, care and trust, marks the victory of evil over innocence. The so-called sophisticated and cultured beings behave beastly to satisfy their greed. The loss of the age-old cultural values and traditional norms is highlighted through the characters. The Indian society and its morality are trodden by these uncultured fellows. Not only the bad but also the good persons face its devastating consequences. The immorality and violence shocks the readers and critics. Thus, the play has a variety of inter-woven themes.

References:

1. Banerjee, Arundhati. "Introduction". *Five Plays of Vijay Tendulkar*. Bombay: OUP, 2005.
2. Chakraborty, Kaustav. *Indian Drama in English*, PHI Learning Private Limited, New Delhi. 2011.
3. Dharan, N. S. *The Plays of Vijay Tendulkar*. New Delhi: Creative Books, 2006.
4. Dharwadker, Vinay. 1999. 'A. K. Ramanujan's Theory and Practice of Translation', in *Post-Colonial Translation: Theory and Practice*, eds. Susan Bassnett and Harish Trivedi. London: Routledge
5. Hatim, B. and Mason, I. (1990) *Discourse and the Translator*. London: Longman.
6. Kothari, R. (2003) *Translating India*. Manchester: St Jerome.
7. Sahapedia
8. Tendulkar, Vijay. *Collected Plays in Translation* New Delhi: Oxford University Press, 1992.
9. Wadikar, Shailja B. *Vijay Tendulkar: A Pioneer Playwright* New Delhi: Atlantic Publisher, 2008.
10. Wikipedia.

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