



Man, Environment & Society

(Unsolved Dichotomies)

EDITORS

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DEDICATION

This edited book is dedicated to Hon'ble Prof. Dr. R. A. Shinde, Managing Trustee of CSIBER Trust, Kolhapur and CA H. R. Shinde, Trustee of CSIBER Trust, Kolhapur. This book is also dedicated to 'CSIBER' for catering the need of management education since 1976 having wide spread alumni base.

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Prof. Er. D. S. Mali
Prof. Dr. A. R. Kulkarni

PREFACE

“The Earth has enough for everyone’s need but not for everyone’s greed” is a famous quote by Mahatma Gandhi which has become extremely relevant today as the interplay of environmental and social issues has become a defining narrative of our times. This book titled, “Man, Environment and Society”, is based on a profound exploration of the multifaceted relationship and the dichotomies in environmental and social concerns. It consists of papers that will be particularly interesting for those who are passionate about these interconnected challenges and are committed to understanding, addressing, and reshaping our world for a better future.

As the Earth's delicate ecosystems strain under the weight of human activity, climate change looms as an existential threat. The consequences are far-reaching, touching every facet of human life. Simultaneously, society faces a complex tapestry of social issues like economic inequality, racial discrimination, and political polarization that have exposed deep-seated injustices that require immediate attention and systemic reform.

The environmental and social issues are also inextricably linked. The disadvantaged and marginalized communities often bear the brunt of environmental degradation, exacerbating social inequalities. The degradation of natural resources further disrupts societies, contributing to unrest, migration, and conflict. Recognizing and confronting these intersections is essential for creating a more equitable and sustainable world.

This book is a compilation of papers that explore these issues. The book will certainly bridge the gap between academia and the broader community, facilitating a dynamic exchange of knowledge and ideas. By doing so, it aims to foster interdisciplinary dialogues, which are critical for tackling complex challenges that face us.

In pursuit of this mission, the book has encompassed a wide spectrum of topics. Articles on topics like climate science, renewable energy, organic products, sustainable agriculture, water resource management, waste management much more. Simultaneously, the social aspects will not be ignored, as discussions will extend to topics such as SHG, women empowerment, social justice, human resources, financial literacy, the health of workers, CSR, and issues related to the use of social media.

Whether you are a seasoned environmentalist, a curious student, a policymaker, or simply someone who cares deeply about the world we inhabit, this book will help you gain insights into different topics in environmental and social issues. I believe in the power of collective action, and I hope that this book will inspire, educate, and mobilize a community of change makers.

EDITORIAL NOTE

Land degradation, biodiversity loss, marine pollution, resource overconsumption and lack of waste absorption are the key environmental concerns need to be addressed. Under the Biodiversity and Land Degradation theme, India aims to enhance G20's contributions to achieve 50 per cent reduction in degraded lands by 2040. It also seeks to enhance global efforts to foster growth and development while pursuing strong climate ambitions. India is committed to restoring 25 million hectares of land and sequestering an additional 2.5 billion tons of carbon dioxide by 2030. Forest fires account for around 29 per cent of global forest loss in the last two decades. In India, forest fires account for 2 per cent of the forest cover loss. G20 countries account for around 80 per cent of tree cover in the world. Sea shore and surrounding areas are ecologically fragile and among the most vulnerable to climate change. The impact of climate change poses health risks for the region. Many small islands already present high burdens of climate-sensitive health risks, such as vector, food, and water-borne diseases. Climate change is increasing average temperatures as well as the frequency and severity of extreme weather events (like floods, cyclones, and drought), increasing sea and negatively impacting food and water security.

Almost half of the world's population is under the age of 25, and nearly 90 per cent of them live in developing countries. Youth is a critical stakeholder in the global economy and will be the main actor and motor for change in the near future. Thus, the energy, motivation and creativity of youth are essential assets to stimulating change. There are number of advantages of social media along with the disadvantages. But unfortunately our youth are addicted to the social media. The technological advancement is always associated with some sort of curse. The world is facing the problem of pollution of work places and having serious health effects. The economic methods of management of these problems need to be found out.

Place: Kolhapur
Date: October, 2023

Prof. Er. D. S. Mali
Prof. Dr. A. R. Kulkarni

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Soil Quality Status on the Basis of pH, Organic Matter and Electric Conductivity : A Case Study of Karad Taluka (Maharashtra)

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Abstract : Soil is an integral part of the resource for agricultural output. The physical, chemical, and biological parameters of the soil content determine soil health. The present research work is intended for the assessment of the physico-chemical properties of the soil in the selected study area of Karad taluka and its impact on agricultural yield. In the study area, 15 villages were selected for the collection of soil samples. The collected soil samples were assessed for different physico-chemical parameters.

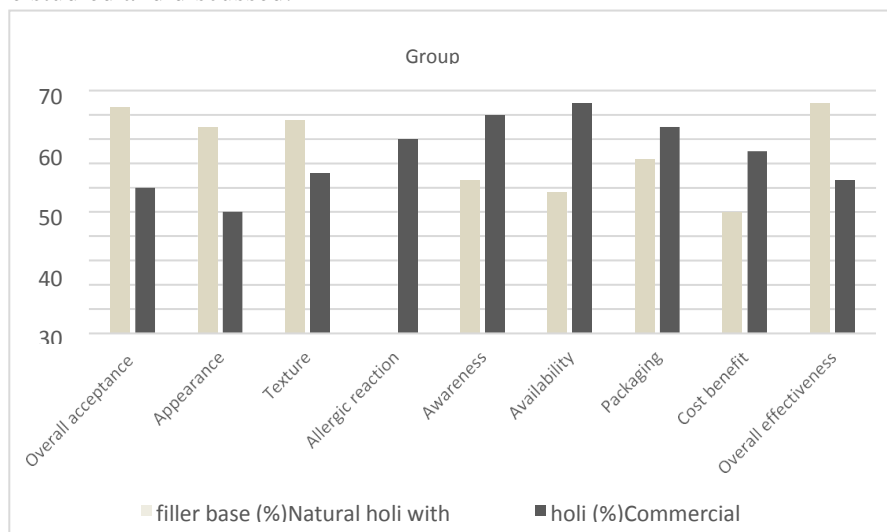
The pH values from 7.06 to 8.88 samples were slightly acidic in nature, whereas samples in the alkaline range of pH contained sodium, calcium, and magnesium. Alkaline soil is less soluble than natural soil. The electrical Conductivity (EC) of soil ranged from 0.172 to 0.915 mmhos results show lower to medium values of EC. The samples are slightly saline in nature. It may be the use of highly irrigated land or the use of hard water for irrigation. The percentage of organic matter (OM) was observed from 0.353 to 1.43. These values show that the nature of the soil was poor in quality. These types of soils are deficient in nutrients and lightly saline, which affects agriculture productivity.

Hence, the present study depicts that for the improvement of soil quality and ultimately to achieve an increase in agricultural yield, there is a need of the use of proper irrigation and use of organic fertilizers.

Keywords : Electrical Conductivity, pH, Organic matter, Alkaline, Saline

Introduction :

Soil is a vital natural resource where all agricultural activities are being done towards the promotion of agricultural economics (Sehgal, 1996). But today's modern practices are affecting the natural soil quality, which ultimately impacts agricultural production; hence it is imperative to know the best fact about our soils and their management to achieve sustainable production. In our state, mostly the normal soil is affected by high irrigation as well as an excess amount of chemicals used in the agriculture field. There are numerous factors that affect the quality of soil indicates i.e., physical, chemical, and biological factors. In the present paper, some physico- chemical parameters are studied and discussed.



1.1. Soil pH: -

Basically, the soil pH measurement is useful because it is an indicator of the acidity or alkalinity of soil as well as gives an idea about various chemical activities within the soil and a rough indicator of the availability of nutrients for plants in the soil. A soil pH is an important tool in making management decisions regarding the type of crop suitable for cultivation. (Larcher, 1980, Marschner, 1986).

1.2. Electrical Conductivity (EC) of soil: -

Electrical Conductivity (EC) of soil is another important parameter that is used for the measurement of the amount of salts (soil salinity) in the soil. It is an excellent indicator of nutrient availability and soil texture, and available water capacity. Electrical Conductivity of soil does not directly affect plant growth but has been used as an indirect indicator of the amount of nutrients available for plant uptake and salinity level. High EC can serve as an indicator of a salinity problem and affects the natural quality of soil, which supports biological productivity. Today, soil salinity is a burning issue in our country as well as in the world. Soil salinity is of great importance in regard to irrigation and agricultural production in our country.

1.3. Soil Organic Matter:-

Organic matter is the key constituent of cultivated soils, having a profound influence on the physico-chemical and biological characteristics of the soil medium. Organic matter is a complex mixture of several chemical substances. These materials serve as a precursor of soil humus. Organic matter help increase the availability of plant nutrient and improvements in microbiological and physico-chemical properties of soil.

Material and Methods :

The main purpose of the investigation is soil quality analysis through pH, EC, and Organic matter.

2.1. The Study Area-

Karad is the economic backbone of the Satara district. It is nearly about 53km. away from Satara. It is located at latitude 17.2777 N and at longitude 74.1844 E. It occupies an area of approximately 63189 hectares of land under cultivation. The majorly there is found light black soil and black in the study area; major cropping pattern are sugarcane, rice, soyabean, groundnut, etc. found. In the study area, major source of irrigation is groundwater (Wells and bore wells).

From the location of the study area, 30 samples from the 15 different sites were collected. All samples were collected by a systematic sampling strategy at 20 cm to 25 cm depth below the surface. Samples were collected at the months of September, October, and November. The samples were dried and sieved through a 2mm sieve to prepare them for testing. All samples were analyzed by standard methods.

The soil pH of the collected samples was determined with the help of pH meter (Jackson, 1973). Electrical Conductivity (EC) was estimated with EC meter (Jackson 1973). Organic matter was estimated by the rapid titration method (Walkey and Black, 1934). The obtained values are statically analyzed for standard deviation and coefficient of variation.

Table - 1:-Observations for the studied parameters based on analysis of soil samples in the selected study areas.

Sr. No	Sample	pH	EC(mmoHs)	OM(%)
1	GW1	8.6	0.226	0.353
2	GW2	8.42	1.012	0.732

3	GW3	8.30	0.231	1.22
4	GW4	8.32	0.245	1.293
5	GW5	8.19	0.769	0.801
6	GW6	8.15	0.232	0.853
7	GW7	8.23	0.365	0.543
8	GW8	8.30	0.24	0.517
9	GW9	8.23	0.523	0.732
10	GW10	8.43	0.172	0.517
11	GW11	8.01	0.275	0.379
12	GW12	8.11	0.915	1.430
13	GW13	7.91	0.203	1.499
14	GW14	7.62	0.575	1.201
15	GW15	8.88	0.225	0.465
	Min.	7.06	0.172	0.353
	Max	8.8	0.915	1.43
	Mean	8.27	0.484	0.835
	SD	0.304	0.0782	0.157
	CV	3.679	18.915	18.819

Note: -EC-Electrical conductivity in mmohs, OM-Organic matter in percentage, SD-Standard deviation and CV-Coefficient of Variation.

Results and Discussion :

3.1. pH:

According to Kadam (2016), soil can be classified into three categories on the basis of pH value i.e. Acidic soil- pH<6.5, Normal soil- 6.5-7.8, Alkaline soil-pH>7.8 on the basis of these criteria, in the study regions are alkaline soil. The alkaline soil usually contains a great deal of sodium, calcium, and magnesium. Since alkaline soil is less soluble than acidic soil or natural soil, the availability of nutrients is often limited. It is due to this that stunted growth, and nutrient deficiency are common. Soil can also become more alkaline if it is irrigated with hard water. In the study area, groundwater is the source of irrigation for a long period of the year, which is the best source of hard water. Alkaline soil is determined largely by soil composition, cation exchange processes, and hydrolysis reactions associated with various organic and inorganic soil components as well as by the CO₂ concentration in the soil gaseous and liquid phases. (Thomas and Hargrove ,1984).

3.2. Electrical Conductivity:

The soil EC is a useful indicator in managing agricultural systems, and the interpretation of EC of soil or media must be made considering the plants to be grown. (Arnold et.al.2005). The electrical Conductivity in the present study area was observed at a low to moderate rate in different locations. As there may be the presence of cations which responsible for increasing salinity in the soil.

The apparent soil EC is influenced by various factors such as soil porosity, the concentration of dissolved electrolytes texture, quality and composition of colloids, and organic matter water content in the soil. (Rhoades et al. 1976). The EC of soil varies depending on the amount of moisture held by soil particles. In general, an exchange of 0-1 dS/m indicates good soil health, EC values above 1-2 dS/m result in reduced growth of salt-sensitive plants and disruption of microbial mediated processes of nitrification and denitrification (Smith et al. 1996).

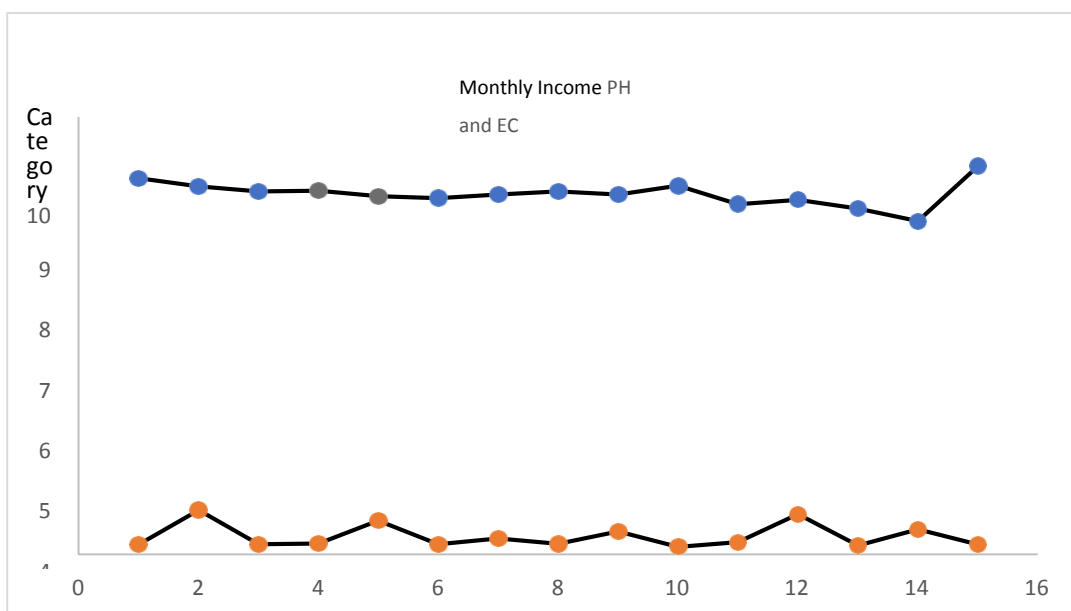


Figure No. - 1 Classification of Soil Quality on the basis of pH and EC

3.3. Organic Matter:

It is a key attribute of soil and environmental quality because it is an important sink and source of main plant and microbial nutrients and, moreover, exerts a profound influence on physical, chemical, and biological functions. (King et al. 2020). Organic matter also affects its structure as denoted by porosity, aggregation, and bulk density, as well as causes impact in terms of content and transmission of water, air, heat, and of soil strength (King et al. 2019). Organic matters also exert an influence on the chemical properties of soils. During organic matter decomposition, nutrients such as nitrogen, phosphorus, and sulphur are released into a mineral nutrient pool and contribute to increasing crop yield. (Oldfield et al. 2018, Oldfield et al. 2020, Wood et al. 2020)

Table 02:- Observations for the statistically derived parameters based on analysis of soil samples in the selected study areas.

Sr. No.	Observations/Parameters	pH	EC(mmoHs)	OM(0/0)
1	Min	7.06	0.172	0.353
2	Max	8.8	0.915	1.43
3	Mean	8.27	0.484	0.835
4	SD	0.3042	0.0782	0.157
5	CV	3.679	18.915	18.819

The mean pH value 8.88 was observed in sample no. 15, and the lowest pH value 7.62, was observed in sample no. 14, while the mean value of pH was 8.27. Statistically, the standard deviation and coefficient of variation are obtained 0.30427 and 3.679, respectively. While the maximum electrical conductivity (EC) value was observed 0.915 mmohs of sample no. 11, the minimum electrical Conductivity 0.172 mmohs of sample no. 09 and a mean value of electrical Conductivity was 0.484 observed. The standard deviation was 0.07827 and the coefficient variation was 18.9154.

The results of electric Conductivity in the present investigation highlight that there is a need for proper soil management as well as proper drainage of water irrigation systems to avoid future soil harm.

The value of organic matter varied from low to moderate percentage in different study locations. The fertility of the soil is not equally observed in the study area.

From the organic matter results in the study area, there is a need to use organic fertilizers, which support increasing soil fertility in the study region.

In the study area, there is a need for proper irrigation management as well as the use of soil management systems to meet the soil problems.

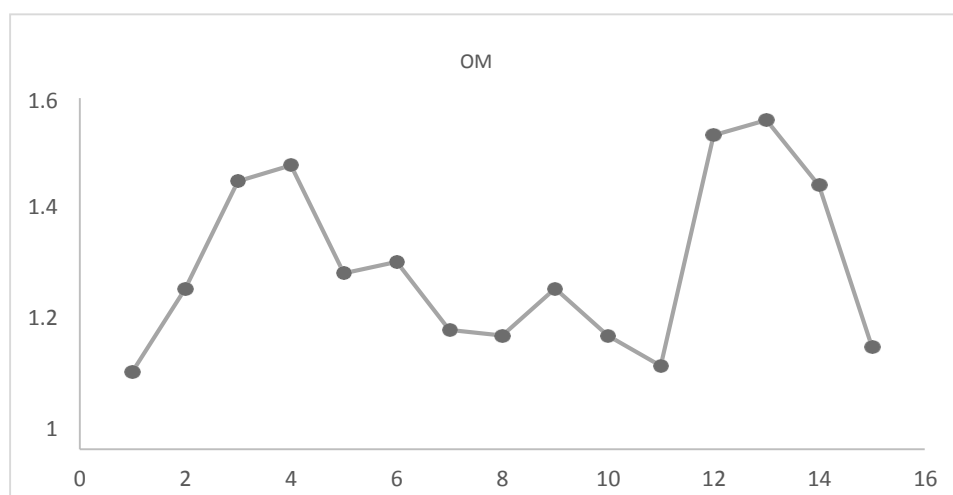


Figure No. 2:- Soil Quality on the basis of Organic Matters

Conclusion:

The present study concludes that the pH of soil samples in the selected study area is found to be slightly alkaline; two samples are strongly alkaline i.e. soil samples were leading to potential salinity, which is unfit for good agriculture practices. EC plays an important part in the alteration of salinity; in the present samples, major samples show moderate EC indicating that present samples are doubtful for good agriculture practices. Organic matter is another key factor that provides an idea about the quality of soil, but in the present collected soil samples, some samples it is observed in the low range while in some, it is in the moderate range. It means the quality of soil is not much good for agriculture practices.

All samples are classified according to BIS standards and the United States Department of Agriculture and Natural Resources Conservation Services. In the study area, pH was moderately alkaline, EC was also moderately high, and OM matter was poor, so the soil was not found to be suitable for agricultural activity. The reason for the observations of this parameter can be attributed to anthropogenic activities and natural climatic conditions.

Hence, there is a need for proper soil management and the use of good organic fertilizers to attain the desired growth in agricultural output.

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Performance Evaluation of A Sewage Treatment Plant (STP)

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Abstract : *An increase in population and urbanization leads to water depletion and deterioration in water quality. Construction of Sewage Treatment Plants (STP) based on the latest technologies in different parts of the country is necessary to reduce the problem of water pollution. The purpose of STP is to reduce the excessive contaminants in sewage and make the sewage reusable. Sewage treatment helps to reduce the pollution level of the water bodies and reduce the use of water by ensuring that treated water is used for irrigation & flushing toilets. Thus, the efficient working of the STP is of utmost importance. Anaerobic and aerobic biological processes are commonly used for wastewater treatment. The efficiency of individual units of STP determines the overall performance of the plant and the quality of the final treated effluent in accordance with the prescribed governmental standards.*

The aim of this study is to evaluate the performance of a sewage treatment plant of Kolhapur city located at KasbaBawada. The treatment plant under study is based on a sequencing batch reactor which is a modification of the standard activated sludge process. Analysis of the sewage quality of this plant is essential as most of the treated sewage is discharged into the Panchganga river. The results of this evaluation will help to determine whether the effluent discharged into the river is within the limits given by the pollution control board.

During the entire study period, it is observed that the overall performance of the treatment plant was satisfactory, and the treated effluent is safe for disposal in the Panchganga river.

Keywords : *Anaerobic, STP, BOB, COD*

Introduction :

Water is one of the important commodities on earth. Due to the rise in population and industrialization, water use has drastically increased. On the other hand, the availability of water is limited. About 80% of water utilized is converted into sewage. The site for the disposal of generated sewage is traditionally natural water bodies, land, and coastal areas. These water bodies are most of the time used as a source of drinking water. Sewage being rich in nutrients, causes algal growth in the water bodies where it is released, thus deteriorating the water quality of the water bodies. The wastewater treatment plants are designed to remove pollutants and protect and preserve the existing natural water bodies.

Kolhapur is one of the oldest and culturally significant cities of Maharashtra, India, lying along the bank of river Panchganga. Kolhapur Municipal Corporation (KMC) supplies about 120 to 130 MLD (Million Liters per Day) of water with an average per-capita supply of about 135 LPCD (Liters per Capita per Day). This includes water for the domestic, commercial, floating population, fire fighting, industrial and institutional usage. Panchganga and Bhogawati rivers are the primary sources of this water supply. There are 4 jack wells installed by KMC, which have a combined lifting capacity of 137 MLD [6].

It is estimated that Kolhapur generates about 83 MLD of wastewater[6]. Out of this, the residential area accounts for 92% (76MLD), followed by commercial establishments for 8% (7 MLD), while the industrial sources account for a negligible 0.12% (0.1 MLD) of wastewater [6].

The STP at Kasaba Bawada had a capacity of treating 29 MLD of wastewater which accounted for only 35% of the total wastewater generated. The treatment consisted of a Sequencing Batch Reactor (SBR), a modification of the activated sludge process. The final disposal point for wastewater (treated and untreated) is the Panchganga river.

Treatment Process

Raw sewage after preliminary treatment (bar screens, detritor, and oil and grease trap) is taken to C-Tech basins by gravity. Six C-Tech basins are there in the plant.

The C-Tech system operates in a batch mode, which removes all the limitations of the continuous processes. Six tanks are provided to make sure continuous operation; however, the process takes place sequentially in each single reactor. The complete biological operation is divided into various cyclic modes. Each cycle consists of:

Fill-Aeration

Sedimentation

Decantation

Generally, one cycle is of 3-5 hours, during which all treatment takes place.

During the period of fill-aeration, the liquid volume inside the reactor increases from a set operating low water level up to a high water level. Aeration ends at a predetermined period of the cycle and allows the biomass to flocculate and settle under quiescent conditions. After the settling period, the treated supernatant is decanted using a moving weir electromechanical decanter. After decanting, the water level in the reactor is returned to the bottom water level after which the cycle is repeated. Solids are wasted from the reactor in the decanting phase. No secondary clarifier system is required to separate and concentrate the sludge.

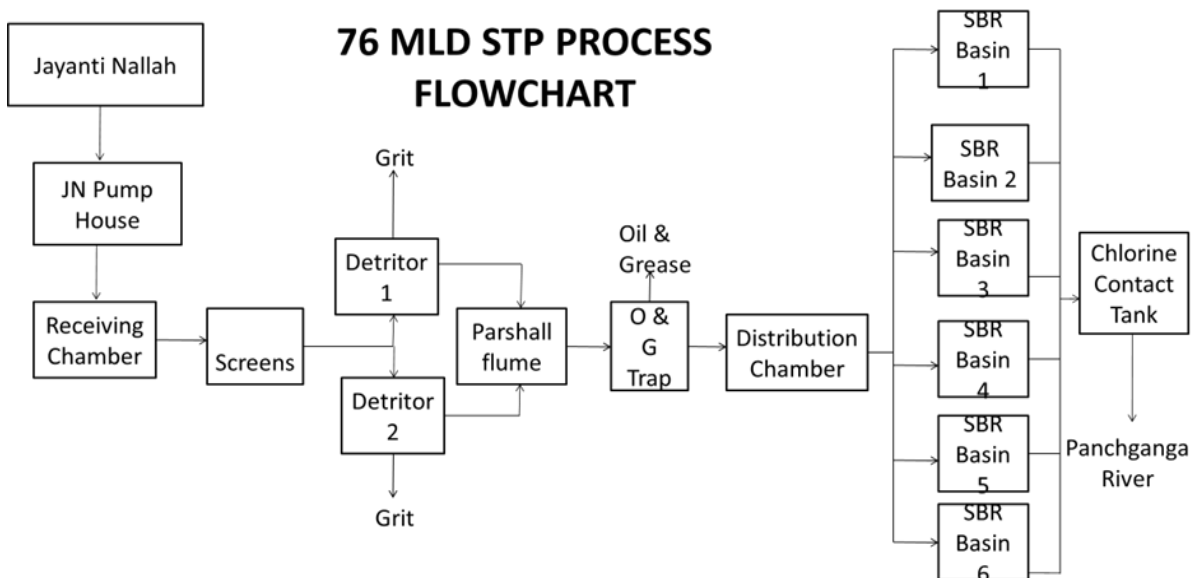
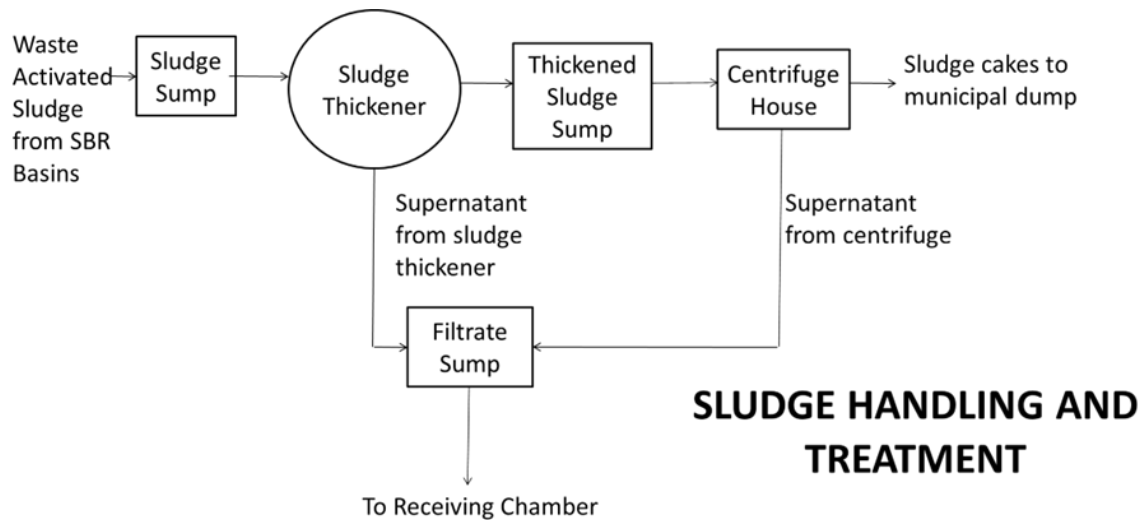


Fig. 1: Flowchart of Sewage Treatment Plant



Methodologies :

Grab samples were collected in a liter jar and analyzed for pH, BOD5, COD and TSS. Samples were tested as early as possible after their collection in the laboratory located on the STP premises. There is a total of six SBR units. Daily analysis of sewage was carried out for parameters including pH, BOD5, COD, and TSS. The MLSS, MLVSS concentrations, and SVI were analyzed on a weekly basis. During the months of November and December 2019, samples were collected from the inlet and outlet of the STP and analyzed. From January 2020 to February 2020, the performance of each SBR unit was analyzed separately.

Observations And Results :

For the month of November and December 2019, samples were collected from inlet and outlet of the Sewage Treatment Plant. Samples collected were analyzed in the laboratory situated in the STP premises.

Table 1: Mean values of parameters under study November 2019

Parameters	In	Out	Removal
pH	7.53	7.16	--
TSS	102.89	32.44	68.06
BOD ₅	91.89	7.99	91.23
COD	197.44	39.56	79.75

Note: Except pH, all values are in mg/l

From the above obtained results for the month of November 2019, the average effluent values for pH are 7.16, which is within MPCB limits (5.5- 9.0). The effluent TSS is 32.44 mg/l which is well above that considered during the design of the STP which is 10 mg/l. The average BOD5 values of effluent are 7.99 mg/l which is within the permissible limits of MPCB (30 mg/l). The COD value of treated effluent is 39.56 mg/l which is much lower than the MPCB limit (250 mg/l).

Table 2: Mean values of parameters under study December 2019

Parameters	In	Out	Removal Efficiency (%)
pH	7.51	7.25	--
TSS	108.00	33.62	68.23
BOD ₅	105.71	7.83	92.65
COD	195.90	38.86	78.91

Note: Except pH, all values are in mg/l

From the above-obtained results for the month of December 2019, the average effluent values for pH are 7.51, which is within MPCB limits (5.5- 9.0). The effluent TSS is 33.62 mg/l which is well above that considered during the design of the STP, which is 10 mg/l. The average BOD₅ values of effluent are 7.83 mg/l which is within the permissible limits of MPCB (30 mg/l). The COD value of treated effluent is 38.86 mg/l which is much lower than the MPCB limit (250 mg/l).

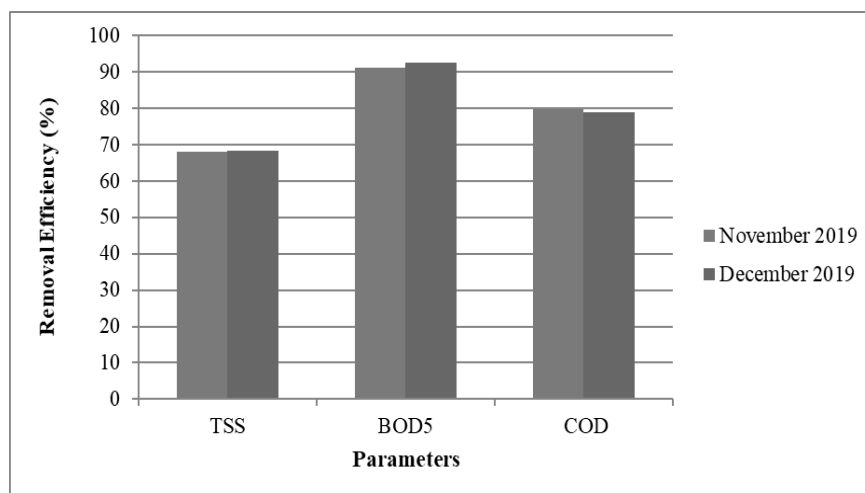


Fig. 3 shows the removal efficiencies for TSS, BOD₅ and COD for the month of November 2019 and December 2019 respectively. Lower TSS and COD removal efficiencies are observed but the treated sewage meets the stipulated standards.

Conclusions :

Based on the laboratory analysis, it is concluded that, The average pH value at the inlet is 7.53 for the month of November and 7.51 for December. After treatment, the average is 7.16 for the month of November and 7.25 for December. Effluent pH value is within discharge limits in inland surface water.

The average TSS value at the inlet is 102.89 mg/l for the month of November and 108 mg/l for December. After treatment, the average TSS is 32.44 mg/l for the month of November and 33.62 mg/l for December. Effluent TSS value is within discharge limits in inland surface water. The overall TSS removal efficiency is 68.06% for November and 68.23% for the month of December. The average BOD₅ value at the inlet is 91.89 mg/l for the month of November and 105.71 mg/l for December. After treatment, the average BOD₅ is 7.99 mg/l for the month of November and 7.83 mg/l for December. Effluent BOD₅ value is within discharge limits in inland surface water. The overall BOD₅ removal efficiency is 91.23% for November and 92.65% for the month of December.

The average COD value at the inlet is 197.44 mg/l for the month of November and 195.90 mg/l for December. After treatment, the average COD is 39.56 mg/l for the month of November and 38.86 mg/l for December. Effluent COD value is within discharge limits in inland surface water. The overall COD removal efficiency is 79.75% for November and 78.91% for the month of December.

The following observations were made during the study period:

Frequent maintenance issues with aerators resulting non-functioning of some of the aerators of the SBR basins were observed during the study period.

Bulking of solids causing the formation of thick foam on the upper layer of the aeration tank was observed.

Higher MLSS concentrations are observed for all the SBR units.

Poor sludge handling treatment was observed.

It was observed that the gravity thickener and centrifuge were not in working condition during the study period.

There were some maintenance issues with the Sludge drying beds due to which they were not in operation during the study period.

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The Impact of Workplace Pollution on Lung Function of Foundry Workers in Kolhapur District

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Abstract: *The workplace environment plays a very vital and important role on the health of workers. An unhygienic and polluted environment affects the working capacity of workers. As we consider the work environment, we must have to concentrate on the atmospheric concentration of different pollutants present in a workplace. Various atmospheric pollutants come under the Pollution known as indoor air pollution. People have no choice but to breathe the air around them. When it is polluted, that can mainly impact their lungs, heart, and overall health.*

The agenda of the present study was to understand the impact of indoor air pollution on workers' lung capacity in the foundry industry. Kolhapur district is recognized as a foundry hub. In a foundry industry, the major indoor pollutant is free silica which is generated in a different metal processing activity. The focus of the study was to check health problems related to workplace environments, particularly people exposed to free silica in foundry industries.

The results show that foundry workers are heavily exposed to dust pollution, and a major portion of the dust is free silica. They are exposed to a heavy dose of free silica, which is very high compared to OSHA standards. Spirometric analysis was conducted to understand the impact of free silica-containing dust on the lung function of the foundry workers. . Significant declines in forced vital capacity (FVC), Maximal Voluntary Ventilation (MVV) Slow Vital Capacity (SVC) were observed in the foundry workers as compared to expected values. This study reveals reduced lung efficiency of foundry workers due to excessive exposure to fine-free silica dust present in the workplace environment. Furthermore, the data shows that dust containing free silica adversely affects forced vital capacity (FVC), Maximal Voluntary Ventilation (MVV) Slow Vital Capacity (SVC). It also affects the lunge age of the workers. We suggest the compulsory use of personal protective equipment by workers during working hours. This would help protect the workers' health from the flour dust prevalent in the workplace.

Keywords : *Free silica, Foundry, Lung function test, Indoor Pollution*

Introduction :

Work zone or Indoor air pollution is a key problem in developing countries and is increasing rapidly. There is a lack of awareness of the impact of work zone air pollutants on human health, particularly on the lung. Workers, as well as management, is also unaware about the impact on air pollutants on lung function. The Foundry industry is engaged in metal processing and produces a large amount of dust at the workplace. Free silica contributes to a major percentage of dust generated in the foundry industry. In a foundry, industrial sand has been used as the main production supportive row material. At the time of processing, free silica is generated from sand and acts as a pollutant. On average, 8–10 hours a day. Foundry workers are exposed to the workplace environment, which is content free silica. The Foundry industry includes different activities like moulding, core making, and fettling, which are responsible for free silica generation. Flour dust accumulates in the workplace environment because of poor ventilation; hence workers get exposed to excessive amounts of dust containing free silica. Long-term continuous exposure of workers to dust-containing free silica adds to pulmonary and respiratory diseases.

The respiratory health effects are studied in workers exposed to a variety of dusts, including effects on breathing and respiratory symptoms, and aggravation of existing respiratory and cardiovascular diseases (Cotes, 1978). Dust exposure is a significant predictor of lung function. Foundry workers are at risk of respiratory problems due to exposure to metal fumes, iron oxide, polycyclic aromatic hydrocarbons, gases, resins, isocyanates, and dusts such as crystalline silica (Gomes et al., 2001). Foundry workers are at high risk of respiratory impairment due to different exposures. Several studies have shown the association between foundry production and chronic effects on the respiratory system, basically on lung functioning. Prolonged exposure to dust can result in chronic lung problems. Investigations of the respiratory health effects from foundry dust exposures are necessary in order to predict the risk factors that may cause an effect on lung capacity (Respiratory Health and Cross-Shift Changes of Foundry Workers in Iran, 2018). Several studies confirmed that the long-term exposure of human beings to free silica dust might cause acute or chronic respiratory disease. Continuous free silica dust inhalation can lead to symptoms of lower respiratory tract inhalation such as cough, shortness of breath, and pain (Dockery and Pope, 1994; Pope et al., 1997)

Kolhapur district is a foundry hub in Western Maharashtra, India. Various metal processing units are operating in different industrial areas. The number of foundry industries are increasing day by day. To meet the demand and supply ratio, many foundry units are not taking care of the health and hygiene of workers. Foundry workers are one of the groups most affected by indoor air pollution in the workplace. The foundry workers in this study have been continuously exposed to dust-containing free silica. During the study, it was observed that these workers were not using any personal protective equipment well, as the industry is also not proper precautions for pollution control in the workplace environment.

Material And Methods

Study Area

As a foundry hub Kolhapur district is selected as a study area. Kolhapur district comes under the western Maharashtra region. In the Kolhapur district, various types of foundry operations are carried out. Depending on production capacities, foundries were classified into three categories (i.e., Large Scale, Medium Scale and Small Scale). The study was conducted for the lung function test with three parameters, i.e. forced vital capacity (FVC), Maximal Voluntary Ventilation (MVV) Slow Vital Capacity (SVC). Before the lung function test, basic information of workers were collected that includes, age, smoker or non-smoker, previous health issues, Body mass index (BMI) etc. Lung function test was carried out with spirometer (UNI-EM Spiromin Ver. 15.0.1). The study subjects comprised for lung function test for the foundry workers who worked in the area where dust generation is more and containing free silica.

Dust Exposure Monitoring

To trace out the actual dust concentration at workplace i.e. where workers were working for 8 hour. Dust concentration was carried out with the help of the device Mini Partisol -2000. Dust concentration was measured in two forms i.e. PM_{2.5} and PM₁₀, with corresponding sampling devices. Sampling was done for 4 hours at indoor places. Air was drawn at a flow rate of between 0.5 to 2.5 litres per minute, and the dust-sampling unit was kept in working areas. The dust (PM_{2.5}, PM₁₀) was collected by filtration of air through a glass fibre filter (25 mm diameter). The samples collected were measured by the gravimetric method and expressed as dust in mg/m³. After the calculation of PM_{2.5} and PM₁₀ free silica concentration was also analysed with the help of the colorimetric method.

Selection of Individual for the Test:

For the test of pulmonary function sample size is fixed as 5 individuals from each of the highly, moderately and less polluted areas in each foundry. (as per category i.e. small, medium, large) The total sample size is 150 individuals.

Equipment

The primary instrument used in pulmonary function testing is the spirometer. It is designed to measure changes in volume and can only measure lung volume compartments that exchange gas with the atmosphere. Spirometers with electronic signal outputs (pneumotachs) also measure flow (volume per unit of time). A device is usually always attached to the spirometer, which measures the movement of gas in and out of the chest and is referred to as a spiograph. The changes of pulmonary function can be studied spirometrically and performed rapidly causing little inconvenience to the subject (6). In the assessment of lung function, the Spirometric measures are influenced by factors, particularly like age, sex, height, weight, geographical conditions etc.

Different pulmonary function tests and terminology

FVC (Forced Vital Capacity) - After the patient has taken in the deepest possible breath, this is the volume of air which can be forcibly and maximally exhaled out of the lungs. This PFT value is critically important in the diagnosis of obstructive and restrictive diseases.

MVV (Maximal Voluntary Ventilation) - This value is determined by having the patient breathe in and out as rapidly and fully as possible for 12 -15 seconds MVV can be viewed as a measure of respiratory muscle strength.

SVC (Slow Vital Capacity) – It is the maximum volume of air that can be exhaled slowly after slow maximum inhalation.

Pulmonary Function Test

All the individuals from the test were given a pulmonary function test. Before the test, a questionnaire was given to them to collect their basic information. Their age, height, and weight were also entered into the spirometer. The spirometer gives two values; one is the expected value and the other is the actual value. The predicted values are based on the age, height, and weight of the person, while the actual values are dependent upon the maximal inspiration and expiration of the person. Sterilization of the mouthpiece was done every time before use.

The severity of the pulmonary function can be determined on the following basis (Chowdhury et al., 2008)

Normal PFT	-	> 85 % of predicted values
Mild Disease	-	> 65 % but < 85 % of predicted values
Moderate Disease	-	> 50 % but < 65 % of predicted values
Severe Disease	-	< 50 % of predicted values

Results and Discussion :

Respiratory Symptoms on Analysis of Questionnaire

Table 1 shows the general symptoms of people of three different sites which was obtained by questionnaire method. The 94 % of people site I faced hard time coughing and breathing in day time while 20 % of site II and 16 % of site III faced the same. Wheezing of chest was heard by 20 % of people from site I, 8 % of site II and 2 % of site III. 76 %, 18 % and 50 % people of site I, site II and site III had hard time while breathing due to dust whereas 30 % people of site I, 10 % of site II and 6 % of site III have hard time in breathing due to smoke.

Hence, it shows that people of site I have comparatively intense respiratory problems as it is a highly polluted area than that of site II and site III.

Table 1: General Respiratory symptoms of people by questionnaire method

Sr. No.	Symptoms	Site I (Small Scale)	Site II (Medium Scale)	Site III (Large Scale)
1.	Hard time coughing or breathing at day time	94 %	20 %	16 %
2.	Wheezing of chest while breathing	20 %	08 %	02 %
3.	Hard time breathing due to dust	76 %	18 %	50 %
4.	Hard time breathing due to smoke	30 %	10 %	06 %

Pulmonary Function Status :

The study shows that values of FVC, SVC and MVV at site I and site II are much lower than that of site III (Table 2). The actual values of individuals at site III are closer to the expected values as compared to the other two study sites. The percentage efficiency for all parameters i.e. FVC (94.36 %), SVC (87.12 %) and MVV (71.81 %) at site III is also good as compared to Site I and Site II. As discussed earlier, FVC is an important parameter for the Spirometric study. The fall in FVC was observed at Site I which may be due to accumulation of pollutants and dust released from vehicles in the airways which reduces the force during inhalation and exhalation activity (Wagh et al., 2006). A significant difference ($p < 0.01$) was observed in the Pulmonary Function Test of individuals of all three sites.

MVV is the maximum amount of air breathed in or out of the lungs per minute and can be calculated ($MVV = VC \times \text{Respiratory rate}$). Vital capacity (VC) is the maximum amount of air taken in or out of the lungs per breath. A person can increase his rate of respiration in case if oxygen is required more, as VC cannot be increased further (Pal et al., 2010) But Table 3 shows that at Site I, MVV efficiency was very less (58.65 %) as compared to site II (71.21 %) and site III (71.81 %). Similar results were also observed in case of SVC. The percentage efficiency for parameter of SVC was more at site III i.e. 87.12 %.

Table 2- Pulmonary Function status of individuals at study sites

Sr. No.	PFT	Site I (n = 50)		Site II (n = 50)		Site III (n = 50)	
		Expected	Actual	Expected	Actual	Expected	Actual
1	FVC	3.14 ± 0.48	2.04 ± 0.92	3.05 ± 0.34	2.36 ± 0.67	2.84 ± 0.44	2.68 ± 0.57
2	SVC	4.96 ± 2.71	3.26 ± 0.53	3.80 ± 2.52	3.17 ± 0.35	3.34 ± 3.08	2.91 ± 0.47
3	MVV	97.24 ± 11.70	69.25 ± 37.66	96.45 ± 8.36	67.00 ± 24.55	87.64 ± 18.00	65.04 ± 19.17

All PFT were performed for 50 individuals (n = 50). Values are mean of five repeated test ± SD, significantly different from actual PFT values at $p \leq 0.01$ by one way analysis of variance (ANNOVA).

Table 3: Percent Efficiency for PFT of the individuals

Sr. No.	PFT	Site I (n = 50)	Site II (n = 50)	Site III (n = 50)
		Observed percent efficiency		
1	FVC	64.00 %	77.37 %	94.36 %
2	SVC	65.72 %	83.52 %	87.12 %
3	MVV	58.65 %	71.21 %	71.81 %

Table 4: Ventilatory impairment status of the individuals

Air Flow Obstruction				Restrictive Defect			
	Site I (n = 50)	Site II (n = 50)	Site III (n = 50)		Site I (n = 50)	Site II (n = 50)	Site III (n = 50)
Normal	15 %	35 %	60 %	Normal	15 %	35 %	60 %
Mild	40 %	35 %	15 %	Mild	30 %	40 %	10 %
Moderate	25 %	5 %	25 %	Moderate	35 %	25 %	30 %
Severe	20 %	15 %	--	Severe	20 %	20 %	--

Ventilatory Impairment Status :

On the basis of obstructive and restrictive lung diseases, a ventilatory impairment of the individuals at all study sites were determined. The principal alteration in lung function was the obstructive type, which frequency was greater in those with greater exposure (Linares et al., 2010). People with obstructive lung disease have difficulty exhaling all the air from the lungs. Because of damage to the lungs or narrowing of the airways inside the lungs, exhaled air comes out more slowly than normal. People with restrictive lung disease cannot fully fill their lungs with air. Their lungs are restricted from fully expanding. According to the results categorized (Table 4), severe obstructive and restrictive defects were observed to be present in individuals at site I and site II (20 %). About 60 % of individuals at site III showed normal spirometry, while only 15 % were found at site I.

Conclusion :

People exposed to the heavy load of pollutants in foundry industries are vulnerable to respiratory disorders. The fall in pulmonary test parameters (FVC, MVV and SVC) at site I and site II as compared to that of Site III was observed. It may indicate an accumulation of pollutants in the airways which reduces the force during inhalation and exhalation activity. It is observed that in small scale foundries, there is a lack of air pollution control devices which are responsible for more duct generation which will be responsible for affect on lung function of workers as compared to medium scale foundries and larges scale foundries where air pollution is controlled by mechanical devices.

Hence, it can be concluded that emissions from various activities posing a threat to people who are being exposed. It decreases the various lung functions that result in alteration in pulmonary function test parameters. Individuals at site I (Small scale foundry) and site II (Medium scale foundry) are much prone as compared to site III (Large Scale foundry). So, the people exposed continuously to dust containing free silica should be made aware of pulmonary disorders.

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Spatial and Temporal Variation of Groundwater Quality in Warna River Basin, District Kolhapur, Maharashtra

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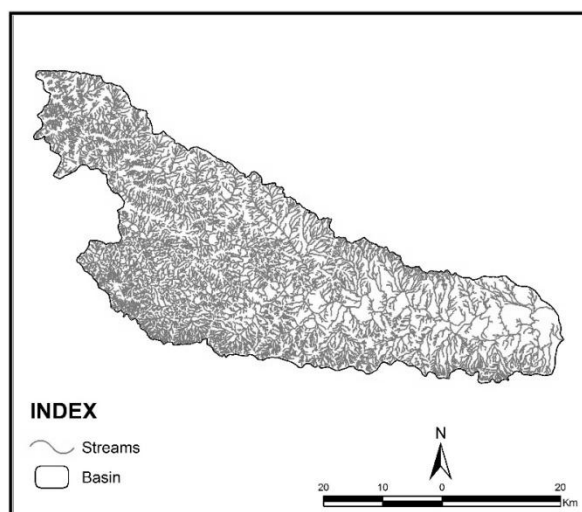
Abstract : *The present study was carried out in the Warna River basin for the assessment of groundwater geochemistry. The study mainly focused on the impact of intensive agricultural practices on the groundwater regime of the study area. A total of 65 representative groundwater samples were collected from different dug/bore wells during pre-monsoon and post-monsoon seasons for the years 2012. These samples were analysed for physicochemical characteristics and evaluated based on analytical results.*

Keywords : *Groundwater, Physico-chemical characteristic, Anthropogenic Activities, Warna*

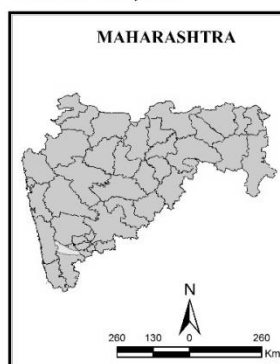
Introduction :

Warna River Basin lies in the area of the Deccan Volcanic Province of the Upper Cretaceous to Lower Eocene ages. Deccan Volcanic Province is made of Basaltic lava flows. The study area is characterized by intensive agriculture. The main crop is sugarcane. The availability of ample water resources has led to over-exploitation. The study area mainly comprises of Basaltic rocks, laterite and, in some parts, alluvium. Groundwater occurs in weathered, jointed, fractured massive basalts; vesicular basalts; jointed or fractured laterite and alluvium. In the region, Groundwater occurs under semi-confined and confined aquifer conditions.

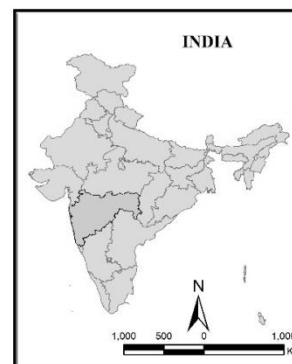
To obtain a good yield, farmers in the area have resorted to the use of excessive chemical fertilizers and pesticides combined with excessive use of water. This has caused the degradation of soil and water quality. Excess removal of Groundwater from the subsurface, absence of groundwater recharge, unlimited use of chemicals, fertilizers, and pesticides in agriculture, and chemical percolating into Groundwater has caused deterioration in groundwater quality.



Source: Based on Survey of India



Source: Based on Survey of India



Source: Based on Survey of India

Warna River Basin has been selected for the present study. The Warna River flows Satara, Kolhapur and Sangli Districts of Maharashtra. It originates in Satara district and culminates in

Sangli district. The study area is located between 160 47' to 170 15' N latitude and 730 30' to 740 30' E longitude. The basin is well developed from north-west to south-east. The Drainage of Warna River is relatively narrow. The total length of the Warna River system is about 170 kms. Around 86 villages are present on the banks of the Warna River and its tributaries. The river has its origin about 2 kms west of Patherpunj village in Patan Tehsil of Satara district at an altitude of 914 MSL. After entering Kolhapur district, it flows along the boundary of the Kolhapur and Sangli districts for over 149 kms. Finally, it enters the Sangli district and meets the major Krishna River near Haripur village in Sangli district.

Geological Setting:

The river basin has been carved in basaltic flows of the Deccan Volcanic Province. These rocks presently form the valley sides, hills and ridges within the basin. At higher altitudes basalts have been converted into laterites that contain pockets of bauxites due to chemical weathering. The Age of the Deccan Volcanic Province is upper Cretaceous to Lower Eocene (68- 62m.yrs.). Deccan Basaltic lava flows are believed to have been formed due to fissure type of volcanism. The lava flows are of 'aa' and 'pahoehoe' type. The Basalt flows in the basin area have been grouped in two Formations i.e., The Mahabaleshwar Formation and Panhala Formation.

Methodology:

In the present study, an attempt has been made to study the groundwater quality (major cations, anions) in the study area. A network of observation wells (65 Nos) was set up to cover the study area for monitoring groundwater quality during the pre-monsoon and post-monsoon seasons of 2012. Major ions like calcium (Ca), magnesium (Mg), carbonate (CO₃), bicarbonate (HCO₃), and chloride (Cl) were analysed in the laboratory by gravimetric analysis following the standard methods of American Public Health Association (APHA 2005) and Trivedi et al., (1998). The sodium (Na) and potassium (K) ions were determined using Flame Photometer (ELICO CL 361). The sulphate (SO₄), phosphate (PO₄) and nitrate (NO₃) were determined by using Spectrophotometer (Shimadzu UV-1800). The ions were converted from milligram per litre (mg/L) to mill equivalents per litre (meq/L). Base maps of the study area, toposheets numbers 46L/3, 46 L/4, 46 H/15 and 46 H/16 on 1:50,000 scales were scanned and digitized. The base map helped in demarcating the boundaries of the Warna Basin. The study area was divided into grids to decide the locations for collecting representative groundwater samples

Data and Results :

Spatial and Temporal Variations in the properties of Groundwater from Warna River Basin aquifers for pre- and post-monsoon season 2012 are given in the Table 1 and 2.

Table 1: Physico-chemical Parameters of Groundwater of Pre-Monsoon Season 2012

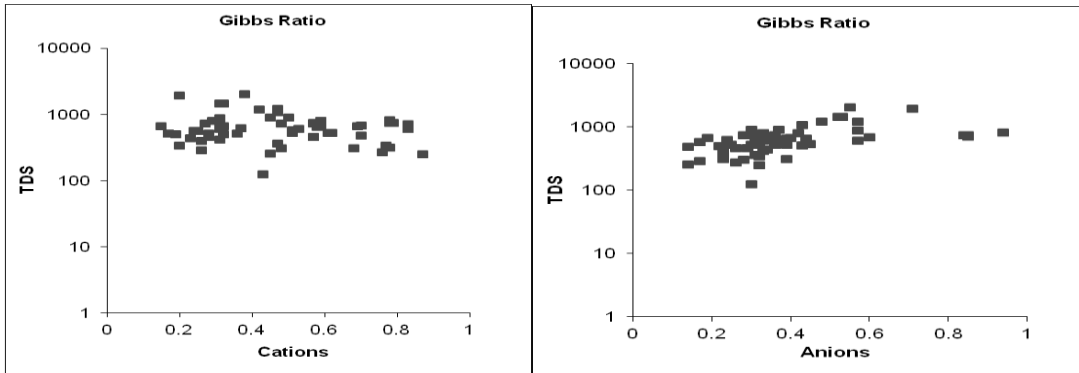
S. N.	pH	EC	TDS	TH	Ca	Mg	Na	K	Cl	TA	SO ₄	NO ₃	PO ₄
Min	6.68	192	123	36	11.2	1.9	9.89	0.25	17.04	30	3.37	0.23	0.01
Max	9.44	3150	2016	1308	424.8	95.9	212.7	72.6	548.1	540	831.3	57.08	4.14
Avg	7.20	1026	656.7	322.6	78.0	33.5	77.0	6.83	105.4	285	106.5	11.22	0.19
StDev	0.48	549.6	351.8	214.8	65.9	20.2	54.4	15.6	85.60	122.9	149.1	11.52	0.57

Table 2: Physico-chemical Parameters of Groundwater of Post-Monsoon Season 2012

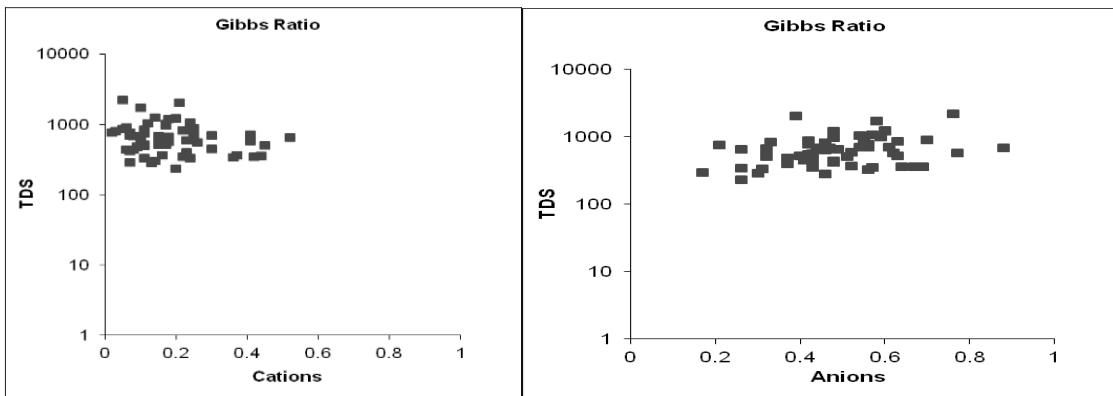
S. N.	pH	EC	TDS	TH	Ca	Mg	Na	K	Cl	TA	SO ₄	NO ₃	PO ₄
Min	6.57	362	231.68	100	27.25	2.92	3.48	0.2	17.04	40	48.7	0.00	0
Max	7.96	3420	2188.8	1400	366.52	144.79	57.49	75.54	688.7	500	227.17	73.98	2
Avg	7.03	1094.8	700.7	341.8	87.15	32.72	16.57	5.61	115.1	205.2	79.75	10.64	0.14
StDev	0.28	617.9	395.48	227.5	58.48	22.96	9.96	12.30	99.57	102.4	33.24	18.56	0.29

Gibb's Diagram for Classification of Groundwater:

Gibb's Diagram is used to establish the relationship between water composition and aquifer lithological characteristics and represents the ratio of cations and anions. It is used to study the dominance of precipitation, rock, and evaporation. As seen in the following diagrams, the distribution of sample points occurs only as one cluster for both seasons of 2012. It is suggested that the chemical weathering of rock-forming minerals and the evaporation process is affecting the hydro-chemical composition of Groundwater. Evaporation increases the salinity by increasing Na^+ and Cl^- in relation to TDS.



Gibbs Diagram (a) Cations Vs TDS (b) Anions Vs TDS during pre- monsoon season 2012



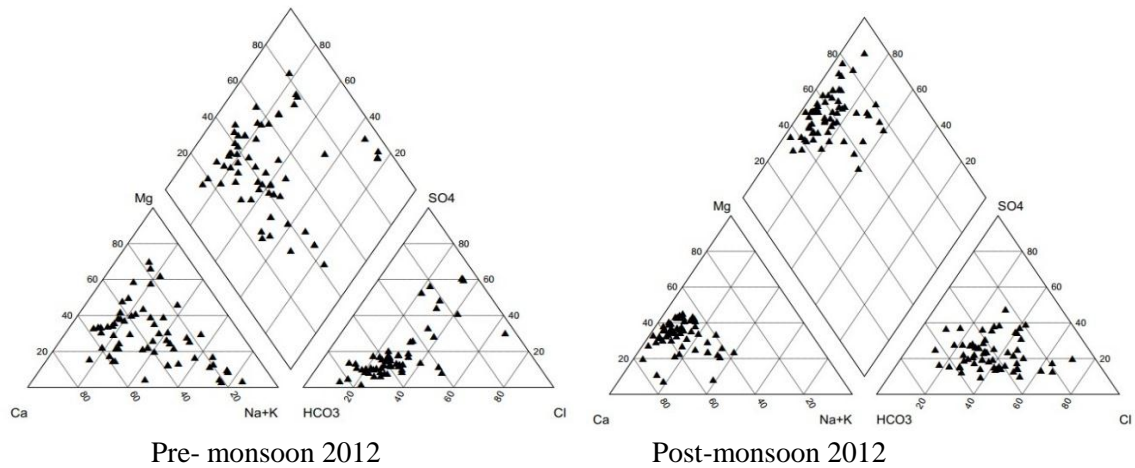
Gibbs Diagram (a) Cations Vs TDS (b) Anions Vs TDS during post- monsoon season 2012

Hydro-geochemical Facies:

Piper developed the Trilinear diagrams to study geochemical facies to classify water composition and to envisage the hydro chemical facies trend. The Trilinear diagrams are shown below for the pre- and post-monsoon seasons of 2012.

80% and 100% groundwater samples represent $\text{Ca} + \text{Mg} > \text{Na} + \text{K}$ hadrochemical facies (Alkaline Earth exceeds Alkalis) in pre- and post-monsoon seasons of 2012.

75% and 15% samples represent $\text{CO}_3 + \text{HCO}_3 > \text{Cl} + \text{SO}_4$ hadro chemical facies (Weak acids exceed strong acids) in the pre- and post-monsoon seasons of 2012.



US Salinity Laboratory (USSL) Diagram

Samples were plotted on USSL diagrams (salinity and sodium hazards) to assess irrigation water quality. The salinity hazard is based on EC measurement. SAR is taken as sodium hazard

Table: Classification of irrigation water based on EC and SAR (after US Salinity Laboratory Staff, 1954)

Sr. No.	Class	EC and SAR	Remarks
1	C1S1	<250 μ S/cm SAR<10	Low Salinity and Low Sodium Hazard
2	C2S1	250 to 750 μ S/cm SAR10-18	Medium Salinity and Low Sodium Hazard
3	C3S1	750 to 2250 μ S/cm SAR18-26	High Salinity and Low Sodium Hazard
4	C4S1	>2250 μ S/cm SAR>26	Very High Salinity and Low Sodium Hazard

Electrical Conductivity (EC) :

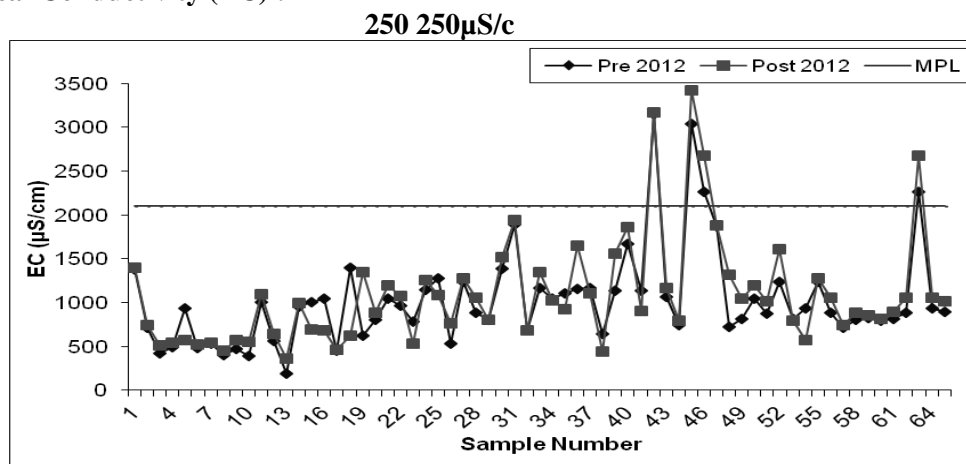
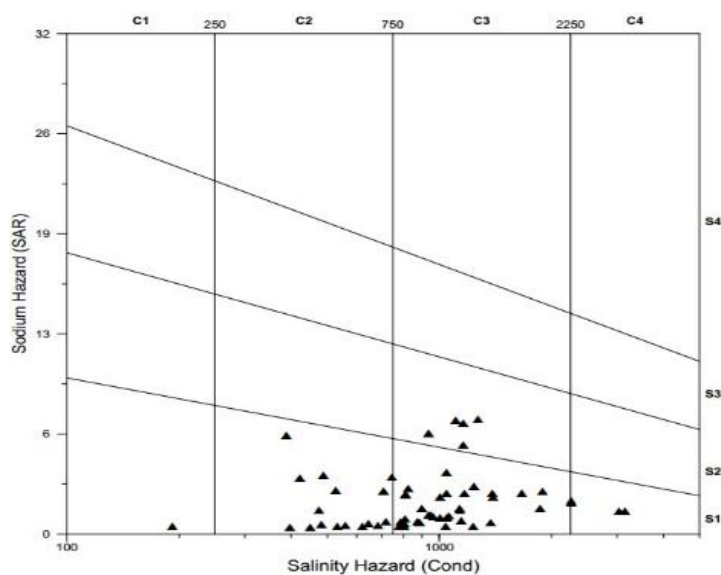


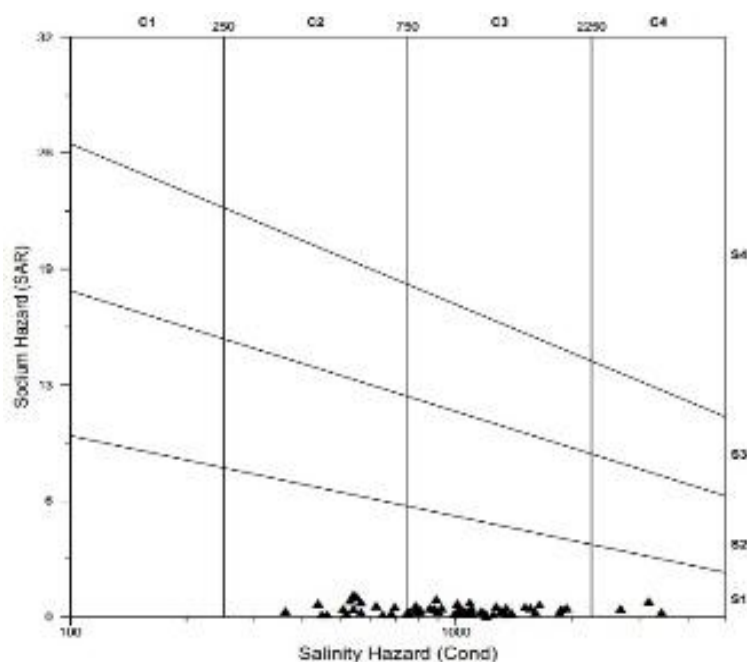
Fig. Spatial and Temporal Variation of EC during pre- and post- monsoon season 2012. It was found that 6% of samples from both seasons of 2012 fall in doubtful category, while EC values of groundwater are higher in vicinity of polluted area.

Table : Classification of EC (Wilcox, 1955)

Range (µS/cm)	Water Class	Sample Percent (%)	
		Pre 2012	Post 2012
250-750	Good	26	32
750-2250	Permissible	68	62
2250-5000	Doubtful	6	6
> 5000	Unsuitable	0	0



USSL diagram of Groundwater for pre-monsoon season of 2012



USSL diagram of Groundwater for post-monsoon season of 2012

Classification of bore-wells fall in C₄-S₁, C₃-S₁, C₂-S₁, C₁-S₁ and C₄-S₂ category :

Year	Pre-monsoon (%)					Post-monsoon (%)				
Class	C4-S1	C3-S1	C2-S1	C1-S1	C3-S2	C3-S3	C4-S1	C3-S1	C2-S1	C4-S2
Year	06.15	60	24.62	01.35	06.69	-	04.62	67.69	27.69	-

Water Quality Index :

WQI values are classified into five types :

- Excellent water (below 50)
- Good water (50 – 100)
- Poor water (100 – 200)
- Very Poor water (200 – 300)
- Unsuitable for Drinking (above300)

WQI Values	Category	Sample Percent (%)	
		Pre-monsoon 2012	Post-monsoon 2012
Below 50	Excellent	48	48
50-100	Good	40	46
100-200	Poor	12	06
200-300	Very Poor	00	00
Above 300	Unsuitable	00	00

Majority of groundwater samples fall in excellent and good category

Conclusions :

Wilcox classification of EC suggested that most of the groundwater samples i.e., 26% in the pre-monsoon and 32% in the post-monsoon season of 2012 come under good water class. However, 68% and 62% of groundwater samples from pre- monsoon and post-monsoon seasons of 2012 fall in the permissible water class. It is seen that only 6% of samples from both seasons of 2012 fall in the doubtful category. The Piper's trilinear plot represents that 80% and 100% of groundwater samples represent $Ca + Mg > Na + K$ hadrochemical facies (Alkaline Earth exceeds Alkalis), while, 20% and 0% groundwater samples represent $Na + K > Ca + Mg$ hydro chemical facies (Alkalis exceeds Alkaline Earth) in pre- and post-monsoon seasons of 2012 respectively. However, 75% and 15% samples represent $CO_3 + HCO_3 > Cl + SO_4$ hadrochemical facies (Weak acids exceeds Strong acids), while, 25% and 85% samples represent $Cl + SO_4 > CO_3 + HCO_3$ hydro chemical facies (Strong acids exceeds Weak acids) in pre- and post-monsoon seasons of 2012 respectively. When the data have been plotted on Gibbs's diagram it is seen that the groundwater samples move from the rock dominance field towards evaporation dominance field demonstrating anthropogenic inputs which alter the evaporation by rising Cl and, as a result TDS.

It can be concluded that the chemical-weathering of rock-forming minerals and evaporation are affecting the hydro-chemical composition. Evaporation increases salinity by increasing Na^+ and Cl^- in relation to TDS.

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A Study on Use of Sugarcane Trash as Filler Material for Aerobic Composting of Spent Wash

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Abstract : *Molasses from the sugar industry, which is one of the by-products, is used as a raw material for the production of alcohol in distillery. The process water from distillery is known as spent wash. The spent wash from distillery creates a very serious problem by the way of threat to the environment. Its volume is as large as 10-15 liter / liter of alcohol produced depending on the type of distillery.*

Spent wash is one of the strongest wastes and is highly acidic in nature with higher Chemical Oxygen Demand (COD) and Biological Oxygen demand (BOD) values having very dark color. The wastewater is hot with temperature range of 95-105 °C at origin. Methods usually used to treat wastewater are physical, chemical and biological processes. Physical processes widely used are screening, grit removal, etc. Chemical processes are not usually very widely used. Biological processes are most widely used which can be classified as aerobic biological treatment process and anaerobic biological treatment process.

The spent wash with low pH, high dissolved solids, high temperature, high sulfates and high BOD and COD is not amenable to aerobic biological treatment. Physico-chemical methods are also found to be less effective in the treatment of spent wash or combined distillery wastes. Two-stage biological method of treatment consisting of an anaerobic treatment, followed by an aerobic treatment of the waste, has been widely accepted as the only method of treatment of the waste from the distilleries. This requires huge capital investment for the construction and maintenance of the anaerobic digesters.

A single-stage digester is usually adopted for the anaerobic treatment when land available is limited. As the high sulfate content and low pH is unfavorable for the methane formers, neutralization of the waste helps in establishing a proper condition for their activity. The anaerobic treatment should be followed by aerobic treatment and for this aerobic composting of spent wash is the best option.

A review of the present and emerging treatment and disposal alternatives for handling spent wash and allied process wastewaters lead to the following significant trends and observations relevant to planning and organizing this research study.

Proven technology is available for primary anaerobic treatment and has been used extensively by several distilleries for energy recovery as biogas. The secondary aerobic oxidation process requires a high energy input for oxygen transfer on a continuous basis, which is generally not economical. Post anaerobic spent wash cannot be used directly for irrigation purpose since it would require large amount of dilution water to reduce BOD to below 100 mg/l to comply with required standards. In case of disposal of spent wash in to inland surface water (river or stream) BOD level should be below 30 mg/concentration- incineration with energy recovery would be an ideal solution available for complete treatment of spent wash. Apparently, this method is not viable because of the large quantity of auxiliary fuel is required for combustion. The thermal processes have undergone extensive development through pilot scale and full-scale installations. However, the technology is yet to be proven on field scale. DIEG (Drying-Incineration-Energy-Generation) process uses dried spent wash power/ pellets to be burned together with bagasse and coal to recover energy as steam and used for generating power. Composting process has been considered

as zero pollution, gives no odor with a high product value easy to handle. It can be a partial remedy, because press mud is not available throughout the year. In present experiment efforts are made to study the possibility of sugarcane trash as filler material along with bagasse and press mud which will make sufficient quantity of filler material available for treatment. Each of the alternatives discussed above can go wrong if a site-specific waste management and monitoring program is not implemented. The results of monitoring must be reviewed periodically and the management plan may be modified, if necessary.

Keywords : BOD, Spent wash, Lagooning, COD, Distillery, etc.

Introduction :

Molasses from the sugar industry, which is one of the by-products, is used as a raw material for the production of alcohol in distillery. The process water from distillery is known as spent wash. The spent wash from distillery creates a very serious problem by the way of threat to the environment. Its volume is as large as 10-15 liter / liter of alcohol produced depending on the type of distillery.

Spent wash is one of the strongest wastes and is highly acidic in nature with higher COD and BOD values having very dark color. The wastewater is hot with temperature range of 95-105° C at origin. Methods usually used to treat wastewater are physical, chemical and biological processes. Physical processes widely used are screening, grit removal etc. Chemical processes are not usually very widely used. Biological processes are most widely used which can be classified as aerobic biological treatment process and anaerobic biological treatment process.

The spent wash with low potentiometric hydrogenium (pH), high dissolved solids, high temperature, high sulfates and high BOD is not amenable to aerobic biological treatment. Physico-chemical methods are also found to be ineffective in the treatment of spent wash or combined distillery wastes. Two stage biological method of treatment consisting of an anaerobic treatment, followed by an aerobic treatment of the waste, have been widely accepted as the only method of treatment of the waste from the distilleries.

A single-stage digester is usually adopted for the anaerobic treatment when land available is limited. Anaerobic lagooning is a low-cost alternative to the digester when land available is in plenty. The only disadvantage of anaerobic lagoons is the evolution of volatile gases and obnoxious odor from the ponds. Establishing a proper anaerobic activity in the lagoons can eliminate this odor nuisance. As the high sulfate content and low pH is unfavorable for the methane formers, neutralization of the waste helps in establishing a proper condition for their activity.

Anaerobic treatment is used for treating spent wash, which can be produce biogas. The relative proportion of methane is also higher in the biogas obtained, which in turn will increase its fuel value. This can meet the energy demand of the sugar industry. The sludge extracted is odorless and the filtration is easy through a better mineralization. The optimum temperature and pH for operating the process is 35-37°C and 7-8 respectively.

Actually, anaerobic treatment is an efficient way of treating organic wastes to reach the pollution control levels accepted by pollution control boards. In most cases, it not only reduces pollution, but also generates biogas, which is a valuable fuel. Anaerobic digestion is a common method of reducing sludge solids for the final disposal. All solids settled out in primary and secondary or other basins are pumped to an enclosed airtight digester, where they decomposed in an anaerobic environment. The rate of their decomposition depends primarily on proper seeding, pH, and nature of the solids, temperature and degree of mixing of raw solids with actively digesting seed material. Digestion serves the dual purpose of rendering the sludge solids readily drainable and converting a portion of the organic matter to gaseous end product. It may reduce the volume of sludge by as much as 50% organic matter reduction. Historically, anaerobic treatment was used for treatment

and stabilization of concentrated municipal and industrial sludge with 2-7% solids concentration. The fact that dissolved oxygen is not needed for the process, the methane is a combustible gas has a commercial value and the biomass production is relatively small. All this makes the anaerobic digestion process ideal for the stabilization of organic sludge, the treatment of concentrated organic industrial waste and the production methane gas from agricultural and organic waste.

The pollution standards stipulate that BOD of effluent should be less than 30 mg/liter for disposal into inland surface waters and less than 100 mg/liter for disposal on land. BOD can be 500 mg/liter, in case land application, which is envisaged as a secondary treatment system for further removal of BOD. Regarding water consumption and effluent generation, specified standards are 1,000 liters and 400 liters respectively for per ton of cane crushed. The best way to minimize wastewater quantity appears to be process modifications. The recycling of spent wash as dilution water can minimize the effluent quantity to around fifty percent. The use of reboilers and multiple effect evaporators can further reduce the effluent quantity to around one third to one fourth. The treatment technologies such as anaerobic digestion followed by secondary and tertiary treatment may not be the effective solution for the disposal of the treated effluent either into water bodies or on land for irrigation due to high inorganic dissolved solids concentration (i.e. 20,000–30,000 mg/l). The requirement of land is high and the groundwater pollution cannot be ruled out due to continuous application of diluted water for irrigation. “Composting” and “Controlled Land Application” appears to be one of the viable alternatives. However, these technologies are useful only for the small and medium sized distilleries (i.e. R.S. production up to 45,000 liter/ day).

Experimental Set Up :

Aerobic composting

In the present experimentation the aerobic composting of spent wash is tried as aerobic treatment method as it will yield good quality compost most needed for the agriculture. For the aerobic composting of spent wash the press mud and bagasse are used as a filler material. Fresh press mud and bagasse were used as filler material. Experiments were under taken for sugarcane trash also. The addition of press mud and bagasse will help to maintain desired moisture content to have aerobic condition and it will act as a support for the growth of the microorganisms. In these experiments the press mud and bagasse are used in the ratio 5:1 respectively. The proportion is kept 5:1 to maintain the C/N ratio close to 30. The C/N of press mud is 24 and of bagasse is around 54 therefore addition of 20% bagasse will make C/N ratio 30.



Fig.: 1 View of composting mass in the laboratory

The lumps of press mud, bagasse and sugarcane trash are broken and mixed evenly to have homogenous mixture. Then the spent wash is added till the moisture content is approximately 70%. The contents are mixed thoroughly in plastic vats having about 15-liter capacity. The mixing of spent wash and filler material is carried out manually. Sample is taken from the composting mass for analysis purpose. Every day the overturning is done to have the aeration. Before over

turning the composting mass the temperature is noted down in accordance with the room temperature. After the temperature is taken the overturning is carried out and 10 gm well mixed sample is kept in hot air oven at 100 + or – 2 °C for the further analysis. During analysis if moisture content is found below 50% then the known quantity of spent wash is added to maintain the desired moisture content.

The sample kept for drying is sieved after taking its dry weight for moisture content estimation, and analyzed for physical and chemical parameters. The size of the sieve used is 500 microns. Leachate water is prepared by dissolving 1 gm of sieved sample in 100-ml hot distilled water. As mentioned earlier the Physico-chemical analysis is carried out by the procedures described in “Standard Methods of Water and Wastewater Analysis” A. P. H. A., 14th Ed. (1974) and Laboratory manual for environmental quality testing, Environmental Protection Research Foundation (EPRF), Sangli (Rao, B. S., et al, 1991). The analysis of composting mass was done every five days for organic carbon and nitrogen. The daily monitored parameters were pH, EC, COD and temperature.). The pH & COD of composting mass was estimated by using the leachate prepared by using one-gram dry sample and dissolving it in 100 ml of distilled water. pH and COD of saturated water was analyzed for batch process spent wash composting. If moisture content goes down than 50% then known quantity of spent wash is added.

Raw Materials:

The composition of raw materials (spent wash, press mud, bagasse, sugarcane trash, etc.) differs as per variety of sugarcane, maturity, soil condition and method of harvesting and method of fermentation process in distillery. As the composting of spent wash is done using press mud, sugarcane trash and bagasse as filler material; the characteristics of the raw material used for experiment are given below.

Table – 1 : Physico-chemical characteristics of spent wash used for experiment (Batch process)

Sr. No.	Parameter	Value
1	Color	Dark Brown
2	Odor	Jaggery
3	Density (Kg/M ³)	1,040
4	pH	4.8
5	COD	91,200
6	BOD	40,100
7	Chlorides	7997
8	Nitrogen	873
9	Organic Carbon (%)	2.82
10	Potassium (K ₂ O ₅)	12,500
11	Total Solids	83,000
12	Sulfate (SO ₄)	2625
13	Phosphorus (P ₂ O ₅)	920
14	Calcium	24,820
15	Sodium	300

All the values are in mg/l, otherwise stated

Photos of Sugarcane trash being collected



Press Mud

It is soft spongy material having dark brown colour. It contains around one percent sugar. The production of press mud will be about 3 to 4% of sugarcane crushed. The characteristics of press mud are shown in following Table: 2

Table: 2. Physico-chemical characteristics of press mud used for experiment

Sr. No.	Parameter	Value
1	Color	Muddy Brown
2	Odor	Jaggery
3	Moisture Content (%)	42
4	pH	7.10
5	COD	840
6	Conductivity (Micromhos /Cm)	500
7	Sodium	8
8	Chlorides	480
9	Nitrogen (%)	1.23
10	Organic Carbon (%)	30
11	Potassium (K ₂ O ₅) (%)	0.80
12	Total Volatile Matter (%)	78.20
11	Ash (%)	17.4

All the values are in mg/l, otherwise stated.
Leachate water was prepared with the help of distilled water in the 1:5 proportions.

Bagasse :

This is the end product remaining after the extraction of juice from the sugar cane. On an average it is around 30 percent of sugar cane crushed. The characteristics of bagasse are shown in following Table No: 3.4

Table: 3. Physico-chemical characteristics of bagasse used for experiment

Sr. No.	Parameter	Value
1	Color	Whitish Brown
2	Odor	Jaggery
3	Moisture Content (%)	5
4	pH	7.3
5	COD	364
6	Chlorides	30
7	Nitrogen (%)	0.83
8	Organic Carbon (%)	45
9	Potassium (K ₂ O ₅)	0.12
10	Phosphorus (P ₂ O ₅)	0.0687
11	Sodium	0.009
12	Total Volatile Matter (%)	86.8
13	Ash (%)	10.2

All the values are in mg/l, otherwise stated.
Leachate water is prepared with the help of distilled water in the 1:5 proportions.

Dilution method:

One-gram wet sample was serially diluted using sterile distilled water to have dilutions 10^8 and 10^{10} . From this 0.1 ml is plated by pour plate technique on PDA and nutrient agar medium separately in triplicate. The plates were incubated at room temperature for 48 hours and numbers of colonies were counted. The total and differential count of the various cultures used for the experiment are also carried out.

Results and Discussion :**Table 4: Physico-chemical characteristics of composting mass with No Sugarcane trash (5 kg press mud + 1 kg bagasse + spent wash)**

Days	Composting Mass						Leachate			Loading ml	
	Room Temp.	Comp. Temp.	Moist. (%)	O. C. (%)	N (%)	C/N ratio	pH	COD	EC		Cl
1	27	27	67	47	1.89	24.86	6.9	1424	2080	250	5000
2	30	39	65.2				7.0	1140	2040		
3	28	41	63				7.2	1000	1800		
4	26	45	61				7.4	872	1400	235	
5	31	47	60				8.3	784	1350		
6	27.5	38	65.7				7.6	1840	2100	270	3000
7	26	51	63.9				8.3	1280	2040		
8	28.5	39	61.8				8.3	896	2010		
9	27	32	59.1				8.6	812	2000		
10	28	31	71	45.8	2.13	21.5	7.9	1166	1920	300	2000
11	28	44	64.3				8.1	1012	1890		
12	28	33	64				8.6	976	2010	295	
13	28	31	63.3				8.9	868	1800		
14	28	30	62				8.9	800	1830		
15	28	28	62				8.7	768	1830	290	
16	28	29	61				8.3	720	1520	305	
17	29	30	60				8.9	664	1740		
18	29.5	29.5	59				8.8	600	1680		
19	29.5	29.5	58.6				8.6	632	1790		
20	29.5	30	56.8	38.8	2.28	17.0	8.7	610	1890	320	
21	28.5	31	55.8				8.7	600	1780		
22	29	29	54				8.6	570	1820		
23	28	28	53				8.7	540	1860	340	
24	28	28	52.1				8.5	560	2070		
25	28.5	27	51				8.6	700	2190		
26	27	27	50				8.6	533	2160	350	
27	27	27	50				8.4	640	2100		
28	27	27	49				8.4	640	2000		
29	26	26.5	49				8.3	630	2080		
30	27	27	48	26.4	2.44	10.8	8.2	630	2080	345	

Table 5 : Physico-chemical characteristics of composting mass with sugarcane trash (5 kg press mud + 1 kg bagasse + 1 kg sugarcane trash + spent wash)

Days	Composting Mass						Leachate			Saturated Water		Loading ml	
	Room Temp.	Comp. Temp.	Moist. (%)	O. C. (%)	N (%)	C/N ratio	pH	COD	EC	Cl	pH		COD
1	23	23	68.3	42.9	2.13	20.14	6.9	2672	1780	270	6.2	8760	3000
2	25.5	45	65				7.5				7.1		
3	25.5	35.5	63				7.4				7.1		
4	24	30	60				7.6				7.2		
5	24	30	58.5				7.9				7.4		
6	22	30	56	42.28	2.16	19.6	8.2	710	1620	256	7.8	4200	
7	24	28	55				8.2				7.8		
8	24.5	26.5	54.5				8.2	576			7.8		
9	24.5	25	53				8.3				8.0		
10	25	24	52				8.4				8.1		
11	24	23.5	51.5	41.8	2.2	19.0	8.3	492	1600	240	8.2	3000	
12	25	23.5	51				8.2				8.2		
13	25	24	58				7.2				7.0		250
14	25	23	56				7.7				7.1		
15	25	23	55				7.8				7.3		
16	25	23	54	41.9	2.26	18.53	7.8	610	1300	228	7.2	3200	
17	25	24	53				7.9				7.4		
18	24	24.5	50.5				7.9	580			7.6		
19	23.5	24.5	49				8.1				7.8		
20	24	24	48.3				8.2				8.0		
21	23	23	57				7.6				7.2		1000
22	23.5	27	55	40.0	2.3	17.4	7.8	912	1705	272	7.4	4608	
23	25	24.5	52				8.9				7.8		
24	24.5	23	48				8.9				8.2		
25	25	24	62				7.3				7.0		1000
26	24.5	24.5	60.8				7.6				7.0		
27	25	24	57				7.8				7.2		
28	24.5	24	55				7.8				7.5		
29	26	25	54				7.8				7.4		
30	24.5	24	53.5	38	2.31	16.45	7.9	404	1450	263	7.2	1720	

All the values are in mg/l, otherwise stated. Electrical Conductivity is in Micromohs/Cm. Temperature in degree Celsius. Leachate water is prepared with the help of distilled water in the 1:5 proportions. Saturated water is prepared by squeezing.

Table - 6: Total plate count of microorganisms for composting carried out for thirty days period (x 10¹⁰ / one-gram wet mass)

Days	A	B	Days	A	B	Days	A	B
1	1.2	2.0	11	0.49	0.112	21	0.042	0.056
2	22	31	12	0.24	0.13	22	0.0424	0.0517
3	33	43	13	0.23	0.116	23	0.0373	0.0516
4	42.9	51.4	14	0.12	0.262	24	0.22	0.0468
5	9960	4000	15	0.11	0.581	25	0.0717	0.019
6	3700	2900	16	0.0622	0.0723	26	0.069	0.018
7	2840	2350	17	0.0521	0.0627	27	0.0666	0.018
8	0.195	0.518	18	0.062	0.626	28	0.011	0.0569
9	0.2	0.401	19	0.0619	0.0526	29	0.011	0.0517
10	0.2	0.194	20	0.0426	0.0481	30	0.021	0.0466

A: 5 kg press mud + 1 kg bagasse + spent wash

B: 5 kg press mud + 1 kg bagasse + 1 kg sugarcane trash + spent wash

Table – 7 : Physico-chemical and biological characteristics of compost

Sr. No.	Parameter	Value
1	Organic Matter	45 – 50 %
2	Nitrogen	2.0-2.5%
3	Phosphorous	2.0-2.5 %
4	Potassium	3.0-3.5 %
5	Calcium	2.5-3.0 %
6	Magnesium	1.5-2.0 %
7	Sulphur	0.5-1.0 %
8	Iron	1000 -1500 ppm
9	Zinc	150 - 200 ppm
10	Manganese	150 - 175 ppm
11	Copper	35 - 40 ppm
12	Boron	2 - 3 ppm
13	Molybdenum	1 - 2 ppm
14	Humic Acid	4 - 6 %
15	Fulvic Acid	2 - 3 %
16	Microorganisms	3 to 4 billion / gram

Summary and Conclusions :

1. The aeration of composting mass should be carried out more frequently after the addition spent wash and as well as after reloading of for 3 to 4 days as highest temperature rise is observed during these days. This is going to help in improving the maximum absorption of spent wash.
2. It is seen from the analysis of ready compost that the salts concentration is higher hence it's over dose in the same field should be avoided. The nutrient value is found out very good during the study.
3. The findings of study show that there is no difference in value of controlling parameters of compost prepared with sugarcane trash and without sugarcane trash. The COD reduction efficiency of composting is found in the range of 89 to 91 %.
4. The compost reach in organic matter and organic carbon (due to absorption of COD on press mud and bagasse) can be used as a main or supplementary fuel along with other fuel in boiler as it has good calorific value. It is around double of the same for the bagasse.
5. Best option for treatment of distillery waste is Aerobic composting of raw spent wash with bagasse, press mud and sugarcane trash as filler material is a method of treatment of zero waste in distillery.
6. The addition of sugarcane trash will increase the availability of filler material and running days of distillery.

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Nutrition and Dietetics : Emerging Trends and Newer Opportunities as Livelihood Services

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Abstract : *Nutrition is the process by which food is ingested, digested, absorbed, utilized, and excreted from the body. Dietetics is the planning and implementation of meals for physiological as well as pathological conditions. Nutrition and Health are the two sides of the same coin. Both are interrelated and interdependent. Food is a major aspect that needs to be considered in disease prevention and management, enhancing and maintaining an athlete's performance. The food service industry is a major service provider industry where Dietitians/ Nutritionists are like mandatory employees. People have become more health conscious nowadays, and thus the wellness centres, gyms, health centres, as well as nutraceutical industries are growing accommodating dietitians in the same. This branch of allied health sciences has gained its importance and significance in last decade. The field of Nutrition and Dietetics is becoming more specific, and hence the number of sub-branches or sectors are providing newer opportunities for Dietitians and Nutritionists to get self-employed. Various sectors Dietitians are exploring at present are- Clinical/Therapeutic Nutrition, Sports Nutrition, Public Health Nutrition Nutritionists in Food Service Industries, Nutrigenomics, Academics, Mass Media and Communication, and so on.*

Keywords : *Nutrition, Dietetics, Health, Athletes, Gym, Allied health sciences, Clinical Nutrition, Therapeutic Nutrition, Public Health Nutrition, Academics, Mass media and communication*

Clinical/Therapeutic Nutrition :

Clinical Nutritionists or Therapeutic Nutritionists usually work in a hospital set up. Sometimes they can also work as a Freelancer nutritionist. Medical Nutrition Therapy is an integral part of the recovery process of any disease. Regular diet needs to be modified when it comes to therapeutic or clinical nutrition. The needs of these therapeutic individuals are different from that of healthy individuals, and hence dietitians are there for planning and implementation of the same. Apart from diet planning, counselling is the major operational work of clinical nutritionists. They are like a bridge between the patient/ relatives of patients and the medical team.

The Dietitians use to direct the operation of all the kitchens and dining rooms in the hospital to provide nutritious, well-prepared food to the patients and sometimes to the staff also. The Dietitian also design diet plans as appropriate for patients' individual state according to their medical needs.

The key responsibility areas of dietitians in any hospital setup are-

- Effective distribution of workloads for the best, most efficient use of staff on all shifts.
- Working with Food Service Supervisors in the selection or dismissal of dietary staff.
- Coordinating all dietary activities in the facility, acting through the food service supervisors and dietary technicians.
- Supervising the development of specialized diet plans by using appropriate dietary modifications wherever necessary; supervising menu planning for special functions.
- Surveying the food preparation and distribution for safe practices ensuring variety, adequate and appropriate seasoning, appearance of food, adequate temperature, and appropriate portion sizes of meals prepared and served.

Counselling of patients, relatives/ care takers, and medical staff about requirements; handling complaints and resolving problems. Co-operating with the purchasing department of hospitals, to provide high-quality food at the most economical and affordable prices. Works with the food committee to receive constructive ideas and suggestions and to provide education to patients and their families. Development of patient care plans attends care-planning conferences and interdisciplinary meetings. Planning and presenting monthly in-service programs for dietary staff and conducting various training sessions for other departments of the hospital.

Some skills are essential while working as a clinical nutritionist like-

- Good communication skills
- Good interpersonal and customer service skills
- Excellent organizational skills and attention to detail.
- Time management skills with a proven ability to meet deadlines.

Sports Nutrition:

Nutrition and diet are essential for maximum performance. Personalized nutrition is necessary for pre, during and post work out sessions. Nutrition for the sportsman on the field and off the field is to be planned separately. Nutrition is vital to optimize performance during an event and also to prevent and sustain any sort of injury. Thus there is a growing need of an expert in the field of Sports Nutrition. Sports Nutritionists are also needed in wellness centres and gyms. Sports nutritionists can guide about the various supplements needed by an individual. They are also well acquainted with the laws and ethics of WADA i.e. World Anti-Doping Agency. Counselling is one more important job or duty of a sports nutritionists. It is essential to enhance the moral of a sports person to sustain in the competition and to accept/handle the result psychologically; either failure or success. Sports nutritionists are also needed in gyms where they impart knowledge about exercise physiology and prescribe personalized diet plans to either lose weight or gain weight, either gain musculature or bone density, and so on.

The amount, composition, and timing of food intake profoundly affect sports performance. Good nutritional practice helps athletes train hard, recover quickly and adapt more effectively with less risk of injury" (IOC Consensus Statement on Sports Nutrition, 2004). Given recent technological breakthroughs, there are exciting opportunities for sports nutrition for gigantic leaps in the coming future. Most sports nutrition and sports physiology studies are performed in controlled laboratory environments, and they often study the effect of single nutrients on health. There is an opportunity for sports nutrition to embrace real-world settings by using real solutions and by focusing on more holistic approaches, like performance benefits of whole foods, whole-body effects of macro and micronutrients in the food, and targeted nutritional periodization. (vanVliet et al., 2017). New study designs in the field of Sports Nutrition must focus on real-life settings which are strictly monitored by using new technological advances such as apps and systems. With a clear overview of the nutritional demands of the sport and individual factors of impact, the extent of real-life effects of sports nutrition elements have to be established.

Apart from the physiological impact of nutrients on performance, there is also an opportunity to study cognitive and mental performance (Habay et al., 2021). This shift will evoke sports nutrition researchers and sports nutritionists to adopt and further develop technological methods that allow the psychobiological determinants of performance to be better defined. The field of sports nutrition has an opportunity to adopt collaborative combined practices with the application of new and established technologies. Such an approach will inevitably become the mainstay of personalized nutrition, where treating an individual will be the norm rather than the average. If sports nutrition can embrace such challenges, it will thrive as an essential discipline and its relevance will get recognized in other fields too (Oikawa et al., 2021).

The global sports nutrition market size was valued at USD 42.9 billion in 2022 and is expected to expand at a compound annual growth rate (CAGR) of 7.4% from 2023 to 2030.

Public Health Nutrition:

Public Health Nutrition is the application of principles of nutrition and implementation of initiatives taken to contribute to improving environmental determinants of dietary intake for the prevention of nutrition-related disorders and promotion of the optimal nutritional status of the population group. Multidisciplinary and intersectoral collaboration is needed for the practice of public health nutrition. Public health nutritionists are responsible for integrating and applying scientific knowledge of human nutrition, biochemistry, physiology, behavioural and social sciences, and food science to plan and incorporate population/community-based nutrition promotion strategies and interventions for improving health and well-being of targeted communities and the general population as well.

Duties of Public Health Nutritionists:

- To assess the nutritional needs of targeted communities and population groups.
- To determine the cause/s of nutrition related health problems.
- To establish and implement nutrition surveillance systems.
- To develop policies to address nutrition-related problems and promote nutritional health and prevent nutrition-related chronic diseases and conditions.
- To plan and conduct culturally relevant nutrition education programmes, complemented by appropriate educational aids through proper channels.
- To collaborate with other healthcare providers, non-health sectors and agencies for greater effectiveness of initiatives.
- To contribute to the education and training of dietetic interns, other healthcare personnel, and other related individuals.
- To provide advice to food industries and other food-related bodies.
- To develop and improve food labelling and safety standards and monitor their compliance.
- To ensure quality assurance standards are fulfilled.
- To conduct research on nutrition and health related areas with its focus and communicate findings.
- To maintain professional competencies.

Following are some of the qualities necessary to become a Public Health Nutritionist-

- Communication (oral, writing, listening) skills.
- Management and networking skills.
- Time management skills.
- Critical thinking
- Flexibility
- To advocate for and demonstrates professional standards.
- Maintaining professional competencies. Respect religious and cultural preferences.

Public health nutrition personnel are further defined as those specialized nutrition professionals and paraprofessionals who provide nutrition services through agencies whose focus is health protection and promotion, disease prevention, and/or primary care to people in the community. Educators must read scientific, technological, and recent societal trends, including changes in demographics, health delivery systems, communications technologies, and consumer demands as well. As research more clearly defines the role of nutrition and diet in human health maintenance, nutritionists should be educated to monitor trends and be proactive in seeking emerging opportunities. It is the responsibility of nutritionists to ensure scientific findings in nutrition, dietetics, and food science are considered in policy formulation and in technical input into an agency and community-related programs. The nutritionist who understands the changing lifestyles of diverse populations incorporates acceptable techniques to motivate necessary behaviour changes

in the population group. To be effective in the community, she makes use of community assessment, epidemiological, and program planning skills basic to the practice of public health. In the current climate, the public health nutritionist is successfully competing for dwindling funds by managing programs with their skill and documenting cost benefits and cost-effectiveness.

Nutrigenomics:

The market of nutrigenomics is expected to register a CAGR of 16% during the forecast period of a recent decade, up from US\$ 451.7 Mn in 2021 to reach a valuation of US\$ 2311.49 Mn by the year 2032. This market of nutrigenomics is anticipated to show a promising growth prospect during the forecasted period owing to the rising burden of nutrition-related non-communicable illnesses. The market is also predicted to rise due to the rising prevalence of cardiovascular diseases worldwide and overweight/obesity among the growing population. According to the World Health Organization (WHO), Cardiovascular disorders are one of the main causes of morbidity and mortality worldwide, killing an estimated 17.9 million people every year. As a result of this, the global market share of nutrigenomics is anticipated to rise during the current decade. Rising cancer prevalence among the growing population is expected to fuel the demand for nutrigenomics again. The rising popularity of tailor-made nutrition plans among athletes is to respond to the increase in the demand for nutrigenomics. The popularity of personalized nutrition plan among athletes is due to its goal of optimizing exercise performance, energy output, and health by tailor made nutritional recommendations with respect to an individual's genetic profile/make-up. This is why nutrigenomics is gaining popularity and supporting the overall nutrigenomics market share throughout the world. The shift away from a one-size-fits-all approach to the personalized diet plans among sports, individuals are promoting the ability to deliver information about recommended dietary allowances that are more successful at an individual level than current general dietary guidance.

This has increased the demands of nutritionists working specifically in the field of Nutrigenomics with proper knowledge of DNA and Genes. Some of the key nutrigenomics market trends promoting the demand for nutrigenomics are- rising consumer awareness of nutrition habits, healthy food, and intake of functional/ super foods, which have a good physiologic effect and can prevent or delay the onset of chronic diseases like Diabetes Mellitus. According to the World Health Organization (WHO), in 2016, approximately 1.6 million deaths occurred due to diabetes and which was the seventh leading cause of death worldwide. Chronic degenerative diseases are the major factors responsible for the increasing demand for nutrigenomics.

In 2020, chronic diseases rose up to 73% of the total deaths. The most common one are cardiovascular disorders, cancer, and diabetes. As health awareness is rising, people are willing to pay more so as to lead a healthy life. India is the capital of Diabetes, particularly that of type two diabetes mellitus. The fifth leading cause of every death in India is cardiovascular diseases. Both of which are chronic degenerative disorders which run throughout the generations. Thus Gene-based approach is needed to deal with these diseases. Hence the demand nutritionists who can work in the sector of nutrigenomics is rising day by day.

Apart from above-mentioned sectors, Nutritionists and Dietitians can also work with Food Industries in the fields of Nutrition Label development, Food Quality Analysis etc. They can also work as kitchen supervisors or menu planners in Kitchen setups of schools/ college canteens, hotels, industries etc. Dietitians can also work along with fitness trainers, physicians, physiotherapists, cosmetologist's etc., or as freelancer nutritionists. Nutritionists, interested in academics and research should be good at writing and communication skills. They can also contribute towards blogs, articles, newsletters, magazines, and journals writing to create health and nutrition awareness among the public.

Conclusion:

Nutrition and Dietetics have grown and expanded a lot during the past decade. The sector has become more specific, giving rise to personalized nutrition. Many different branches of nutrition are evolved, like clinical nutrition, sports nutrition, public health nutrition, nutrigenomics and so on.

Nutritionists, apart from the above-mentioned sectors can also work in food industries, schools and college canteens, hotel industries, academics, and research, as well as media and mass communication. Hence it can be concluded that Nutrition and Dietetics is an emerging field providing livelihood services.

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A Review on Effect of Milk Obtained from Hormone Injected in Cattle on Children and Adults

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Abstract : *Milk and milk products are consumed by more than 6 million people all around the world. While household dairy farming is practised by more than 750 million people. Milk plays an essential role in the Indian diet being the major source of protein and calcium. A significant increase in the misuse of steroids is observed in cattle to increase the yield of milk. Steroid injections results in several health conditions in cows and buffalos as well as humans consuming this milk. A small amount of natural hormones such as progesterone and estrogen are present in cattle, goat and human milk. Estrogen is a fat-soluble hormone hence the whole milk contains a higher level of estrogen than that of skim milk. Minor traces of oxytocin are absorbed in the milk by small intestine as it is ingested by intestinal enzymes. The health and productivity of cattle animal is adversely affected by misuse of oxytocin hormone. High level of hormonal residue has been observed in the food, which has raised a major concern worldwide. However, intake of milk with a high level of hormone is associated with type 2 diabetes mellitus, insulin resistance and ovulation disorders, and infertility.*

Keywords : *milk steroids, PCOS, infertility, insulin resistance, oxytocin, progesterone, gynecomastia, cancer, milk yield.*

Introduction :

The consumption of milk and milk products every day around the world is more than 50%.The cattle are given hormonal injections to increase the yield of milk. These hormones then enter the human body through milk and milk products and are thus capable of having side effects. These hormones are capable of interfering the endocrine system and bring about disturbance in the physiological function in the human body which is a serious issue worldwide. Oxytocin is a neurohormone that stimulates lactation by stimulating uterine contractures. 82% of the cattle breeder have been reported for oxytocin injection abuse on cows for milking(Peter *et al.* 2019).

Food processing techniques such as heating and churning has no apparent change in the levels of hormones in milk and dairy product. Most hormonal disorders/imbalance have resulted from the consumption of hormone-containing milk. It was observed in a study that men consuming cow milk at least 600 mL/m² of the body surface area had higher levels of hormones such as estradiol, estrone, and progesterone in urine and serum. Moreover, declined serum levels of testosterone and pituitary gonadotropins were observed in such males immediately after hours of milk consumption. The major concern of cancer, especially ovarian, prostate, and endometrial (in menopausal women) cancers, is linked to the consumption of milk and milk products. This study states that 60-80% of hormones absorbed in the human body come from milk and milk products. It is essential to find out the amount of milk and milk products to be consumed (Nili-AhmadabadiA. 2021).

In a recent study it was observed that milk contains very small / negligible amount of prolactin or luteinizing hormone (LH). While the concentration of hormones such as estrogen, progesterone, oxytocin, growth hormone, and thyroid stimulating hormone (TSH). Hormones are secreted in blood and are secreted in milk through mammary glands. Hormones can severely affect the reproductive system in males and females, such as poor development of the reproductive system and inhibition of sperm. Some studies suggest and report residual hormones being toxic and cancer-promoting. It can lead to various types of cancers such as breasts, ovaries and prostate (Qu X. *et al.* 2018).

The yield of cow milk is adversely affected by many external environmental factors, trauma from a disease (mastitis) or surgery, and by a change in the surrounding by relocation. An increase in corticosteroids may decrease the yield of milk, although the evidence to suggest the same is limited. A study on the same is conducted by treating the cows with dexamethanose (artificial corticosteroid) to confirm its effect on yield of milk (Shamay A.*etal.* 2000).

Polycystic ovary syndrome (PCOS) is a disorder related to the formation of cysts in the ovaries. The general symptoms observed in PCOS are irregular menstrual cycle, infertility, miscarriage, hirsutism and obesity, insulin resistance, and diabetes (Rajaeieh G. *et al.* 2014).

Milk is composed of 87% water, 3-4% lipids, 3.5% protein, 5% lactose, 1-2% vitamin (B2, B12, A, D), minerals such as calcium, phosphorus, potassium, magnesium, zinc and selenium. However, the intake of milk may affect ovulation, and fertility, carbohydrate metabolism disorders like insulin resistance. It is evident that the consumption of milk and milk products alters the level of hormones (Janiszewska J. *et al.* 2020).

Materials and Methodology :

Case study:

Milk formulas were fed to infants, and their effect on the development of their bodies was observed. This observation is a random rather than controlled study. This showed that the underweight twins when fed with milk formulas, turned out overweight within a year of consumption without any history of overweight or obesity in the family. Early puberty in a 10-year-old female was observed after the consumption of milk supplied by milkmaids. Obesity in an 11-year-old female was observed after the consumption of milk formula. Although her medical history includes abnormal thyroid (Peter *et al.* 2019).

Sampling:

Sixty Nine Samples from Hamadan markets were randomly collected in the period of April to September 2020. The storage of these samples was done at -20°C .

Sample Preparation and Hormone Analysis:

Transfer 1mL of the sample into a microtube and add 200 μL of acetate buffer (0.2 M, pH 5.2) and homogenized using a homogenizer for 1 min. Add 20 μL glucuronidase/arylsulfatase and incubate overnight at 37°C for deconjugation of steroid hormones, Transfer 0.5 ml of the sample was into a microtube and add 0.5 ml of methanol to precipitate milk proteins.

After 3 min of vortex shaking, centrifuge the samples (at 25°C for 10 min/3500 g), separate and cleaned the supernatant using solid-phase extractions (SPE). Carry out the analysis of steroid hormones quantitatively using enzyme-linked immunosorbent assay (ELISA) kits (DiaMetra, Spello Perugia, Italy) according to the manufacturer's instructions.

Calculation of Estimate Daily Intake (EDI) and Hazard Quotient (HQ) was done,

$$\text{EDI (ng/kgbw/day)} = \frac{\text{FM (ml)} \times \text{CSH (ng/ml)}}{\text{Wbw(kg)}}$$

$$\text{HQ} = \frac{\text{EDI}}{\text{ADI}} \text{ (Nili-AhmadabadiA. 2021)}$$

In a study 195 raw milk samples were obtained and the hormones in it were measured using high-performance liquid chromatography-tandem mass spectrometry (HPLC-MS/MS). Progesterone and cortisol were found in raw milk in detectable level (Qu X. *et al.* 2018).

Four cows were selected for experiment. They were milked thrice a day at fixed time. The yield and composition of milk were recorded. Then the cows were injected with 40 mg dexamethasone (dexamethsone-HCl, Vitamed, Haifa, Israel) dissolved in 40 ml of saline(Shamay A.*etal.* 2000).

A food frequency questionnaire was given to 400 women to understand the relationship between the food consumed and PCOS (Rajaeieh G. *et al.* 2014).

Result and Discussion :

Observation from recent studies shows that the milk containing high level of injected hormones is more likely to effect on breast cancer, prostate cancer, and infertility. Consumption of such milk by pregnant women can cause abortions, babies born with defects. Moreover, such milk is associated with high risk of pregnant women bleeding during childbirth and it can also terminate breastfeeding (Peter *et al.* 2019).

Table 1: Normal values of hormones in the human body (Peter *et al.* 2019).

HORMONES	NORMAL VALUE IN HUMANS
OXYTOCIN	0-40pg/mL
IGF (INSULIN GROWTH HORMONE)	10- 1000 ng/ml
GLUCOCORTICIDS	20 to 136 ng/ml
ESTROGEN	350pg/ml
PROGESTERONE	3.35- 16.4 µg/L
PROGESTERONE	1) Pre-ovulation 3.18 -5- 20 ng/mL 2) Midcycle Males≥16 years 15.90- 63.60 nmol/L 0.86 3) Women 2.9ng/mol 30 mg

Table 2: Outcome of different steroids in milk (Peter *et al.* 2019).

Steroids in Milk	Animals tested	Concentrations in milk	Health problems in Human if exceeds normal limits
OXYTOCIN	Cows	10pg/mL	Stunted growth, hair loss
	ewes	composition of milk is not affected	Amenorrhea, carcinogenic effects
IGF (INSULIN GROWTH HORMONE)	Cows	4 ± 1 ng/ml	Pilosebaceous, obesity, gynecomastia
	Neonatal pig	1.81 +/- 0.56 nmol/L	Prostate tumors
	Neonatal mice	50 µg/mL	Mucosal growth
GLUCOCORTICIDS	Cows	8 to 18 ng/ml	Risk of ulcers and gastritis
	Rat	144 ng/ml	Risk of cholesterol and triglyceride levels
ESTROGEN	Cow	7.0±12.7pg/mL	Infertility, early puberty
	Mice (consume lactating cow milk)	No effects in mice	The decrease in testosterone function
PROGESTERONE	a) Trail with oral doses in human 12.50ng/ml	a) Trail with oral doses in human 12.50ng/ml	a) Trail with oral doses in human 12.50ng/ml
	Ovarian cancer	Ovarian cancer	Ovarian cancer
	Cow milk	7.6 to 22.5 ng/ml	Hyperplasia
	c) Goat milk 32 to 99 pg/ml	c) Goat milk 32 to 99 pg/ml	c)Goat milk 32 to 99 pg/ml
	Breast cancer	Breast cancer	Breast cancer
PROGESTERONE	Rat	2.4 ± 0.4 ng/ml	Hyperprolactinemia

Cow	15.4 ± 1ng/ml	Hyperthyroidism, accumulation of milk in glands
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To meet the increasing demand for milk and milk products of consumers, steroid injections have been used to raise the level of milk collection. This, in turn, is responsible for influencing the endocrine system of lactating cows, which alters the profile of steroid hormones in milk causing carcinogenic effects on the consumption of milk. It can be suggested that the daily consumption of milk is 175–240 ml; these levels of steroids can be considered safe for children and adults. Consumption of more than 1.5 L/day of milk is capable of putting children at high risk of 17β-estradiol although it is highly unlikely to consume this much quantity of milk daily for an individual. Estradiol has good stability in milk products which is a concern for all consumers. Progesterone exposure, on the other hand, is through milk is very less (Nili-AhmadabadiA. 2021). Hypothetically, hormones are transferred into the milk through diffusion. There is a close association between the feeding of an infant and its growth. Hormonal imbalance in humans is a major concern due to oxytocin-containing milk. Protein oxytocinase, present in the liver and excretory organs, destroys oxytocin in milk. There is an increased production of IGF-I in premenarchal females due to milk consumption, while adult women suffer from acne. Other studies suggest high levels of IGF-1, insulin, or both are potential to the risk of colon, pancreas, endometrium, breast, and prostate tumors. Higher levels of estrogen in males lead to infertility as it reduces the motility and count of sperm. Estrogen and IGF-1 are responsible for the development of breasts. Consumption of r-BGH- treated milk raises the level of IGF-1 in blood, which leads to a condition called gynecomastia (enhancement of breast in males). Cattle are more likely to suffer from udder infections/mastitis when it is treated r-BGH. Mastitis is treated by antibiotics which are speculated to have a resistance to certain bacteria thus, difficult to treat. Milk hormones are responsible for future hormonal imbalance and obesity in infants that consume milk formulas (Peter *et al.* 2019).

Table 3: Concentration of different hormones in dairy products (Peter *et al.* 2019).

PROCESSED PRODUCTS	NO OF SAMPLE	FAT %	PROGESTERONE CONCENTRATION (ng/ml)	ESTRONE ng/ml	17BETA-ESTRADIOL ng/ml
WHOLE MILK	4	3.5	9.5	0.13	0.02
BUTTER	4	79.5	132.9	1.47	0.3
CREAM	4	35	72.7	0.26	0.03
SKIM MILK	4	0.01	2.1	-	-

The level of 17β-estradiol, progesterone, and hydroxyprogesterone in sixty-nine bovine milk samples were analysed by enzyme-linked immunosorbent assay (ELISA). The average content of hormones such as 17β-estradiol, progesterone, and hydroxyprogesterone found in these milk samples were 330.5 ± 190.2 pg/ml, 3.57 ± 2.47 ng/ml, and 1.54 ± 0.41 ng/ml, respectively.

This study suggests that the daily consumption of milk is 175–240 ml; these levels of steroids can be considered safe for children and adults. In this study it is assumed that hormones present in milk and milk products, such as 17β-estradiol, lead to cancer (Nili-AhmadabadiA. 2021)

The government of China has banned the use of steroids/hormones in animal husbandry, hence the milk samples collected contain a natural number of hormones secreted by the mammary glands of cattle in the milk. The Acceptable Daily Limit (ADI) defined by WHO for progesterone is 30µg/kg in natural raw milk. Detection of hormones such as cortisol was 0.61 µg/kg, progesterone was 5.12

µg/kg. This study states these levels of hormones aren't a potential health hazard for children. Detection of hormones such as cortisol was 0.61 µg/kg, progesterone was 5.12 µg/kg. This study states these levels of hormones aren't a potential health hazard for children (Qu X. *et al.* 2018).

A single dose injection of dexamethasone (40mg) was given to cows, reduction in the cow milk yield was observed by 45%. Treatment of dexamethasone also indicated a decline in the level of secretion of protein, calcium and phosphorus. Moreover, the concentration of protein, fat, casein, magnesium and phosphorus also declined along with milk yield. After reaching a peak of 24 hours, the concentrations of fat increased by 45%, of total protein by 45%, of casein by 50%, of whey protein by 9%, of magnesium by 50% and of phosphorus by 21% in the cows treated with dexamethasone. The glucose availability may decrease due to stress (ACTH induced corticoid secretion). Dexamethasone treatment has a lowering effect on the mammary uptake of glucose that increases blood glucose concentration. Minimum milk yield is associated with maximum blood glucose (Shamay A.*etal.* 2000).

36% of age-related infertility is observed by consumption milk (Rajaeieh G. *et al.* 2014).

Women suffering from PCOS suffer are more prone to insulin resistance and infertility because of dairy intake due to increased hormonal imbalance(Janiszevska J. *et al.* 2020).

Conclusion:

To avoid various health issues in infants, it is suggested that mothers breastfeed their children instead of providing them with milk formulas. The physiological activity of the endocrine system can be severely affected even by minute traces of milk hormones. Dietary exposure of milk in children (aged 1–5) corresponded to 1.48–1.60% of the ADI, by the maximum value of hormone progesterone indicating that the detected steroid hormones in raw milk are not a potential health hazard in children. There is a correlation between the risk of PCOS and milk consumption. The research on the effectiveness of food consumed of inhibiting and curing PCOS is limited. Men and women may suffer from issues related to fertility by consumption of milk with a higher level of hormone. Men may also suffer from a condition called gynecomastia.

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Preparation of Organic Colours from Flowers and Leaves for Holi Festival: A Sustainable Approach

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Abstract : *One of the major festivals of India, Holi, is celebrated by throwing scented colours, powders and perfume at each other. Traditionally Colours for Holi were prepared from the various parts of trees, such as flowers, leaves, fruits, etc. In modern times, with the arrival of dry chemical colours, people stopped taking pains to extract the colours of the flowers and the use of chemical colours in Holi is increasing day by day. The objective of the present study is to enhance awareness amongst people about the various dangerous as well as harmful effects of chemical colours and the importance of natural and eco-friendly colours. Also, to make aware the people with some common tips for a safe Holi and methods of preparation of natural & eco-friendly colours and de-pollute Holi and make it in sync with nature.*

Keywords : *Holi, chemical colours, Natural colours, Eco-friendly*

Introduction :

There are several stories associated with Holi in Hindu scriptures, but the colours in the Holi festival have their origin only in the trees and flowers of the spring season. Previously, paints were made from natural products. In fact, all the colours used in various Hindu celebrations, art forms and paintings were made from natural products. Lord Krishna played Holi using Tesu flowers which are found in abundance during the season. Their investigation revealed some toxic chemicals with potentially serious health effects. Black specks of dust have been found to contain lead oxide, which can lead to kidney failure.

In the early days, colours for 'Holi' were prepared from the flowers and leaves of trees that bloomed in spring. Most trees have medicinal properties. The dye obtained from various parts of these plants is also good for the skin. With the rapid commercialization of the festival and the demand for colours, the production of artificial colours, increased. They are cheaper than natural colours, but they are expensive for the environment and health. The festival of Holi is more about spreading love, joy and happiness than colouring others. Play a safe, dry and eco-friendly Holi by placing a simple tilak. In this way, you save not only water, but also yourself and the environment. These artificial colours consist of a toxic chemical that can have serious health effects.[1]

Therefore, this study was undertaken to evaluate the potential of eco-friendly Holi colours prepared using natural dyes extracted from plants, which are not only safe for human health but will also have zero risk to the environment, with a low-cost filler base such as like cornmeal.

The three main environmental concerns about Holi

1) Use of toxic chemical dyes :

In earlier times when festival celebrations were not so commercialized, Holi colours were prepared from the flowers of trees that bloomed in spring, such as the Indian coral tree (parijat) and the flame of the forest (Kesu), both of which are bright red in colour. flowers. These and several other flowers provided the raw material from which the brilliant hues of Holi colours were made. Most of these trees also had medicinal properties and the Holi colours prepared from them were really beneficial for the skin.

Over the years, with the disappearance of trees in urban areas and a greater emphasis on higher profits, these natural colours were replaced by industrial dyes produced by chemical processes.[1]

Table.1 Chemical used in Holi colours and its effects on health

Colour	Chemical	Health Effects
Black	Lead oxide	Renal Failure
Green	Copper Sulphate	Eye Allergy, Puffiness and temporary blindness
Silver	Aluminium Bromide	Carcinogenic
Blue	Prussian Blue	Contract Dermatitis
Red	Mercury Sulphite	Highly toxic can cause skin cancer
Purple	Chromium iodide (CrI2)	Bronchial asthma & other forms of allergy
Shiny	Powdered Glass	Skin problems, eye infections & allergy

2) Play Holi with natural colours :

Playing Holi with eco-friendly colours is the best way to celebrate this colourful Holi festival. Make your own natural colours by simply using flowers, leaves and fruits and making their different combinations with your imaginations. Such colours are harmless and can easily be washed off.

Table.2 List of plants and parts used for extraction of natural colours

Colour	Plants/ Plant parts
Red	Hibiscus flower (dried), Daylilies (old blooms), Portulaca flowers (dried), Redrose, Red sandal wood powder, Annato seed (Sindur), Shimul, Krishnachura, Maddar root
Orange	Dried flower of flame of forest, Orange marigold, carrot
Green	Green leafy vegetables such as loffa, spinach, dhatura leaves extract etc and condiments such as coriander, mint, papaya leaves.
Yellow	Turmeric, Yellow Marigold, Yellow chrysanthemum, Amaltas, Black Babul, dried rind of bael, grass, peach (leaves), Hydrangea (flowers)
Blue	Dried flower of neeli, gulmohar, indigo flower, mulberries, red cabbage, hyacinth (flowers)
Violet/pink	Beetroot, Onion peel, pink flower of Kanchan, raspberries, cherries, strawberries,
Purple	Black Jamun
Brown	Heena powder with amla powder (one part of heena powder with 4 parts of amla), Dandelion (roots), hollyhock (petals), pine tree bark, tea leaves.

Use of wood to burn stick fires :

Burning firewood to make fire for Holika Dahan is another serious environmental problem. Follow your tradition ecologically. Instead of wood for Holi bonfire, use scraps like waste boxes, cow dung, coconut waste etc. This will save precious trees from being cut down to care for our environment.

Wasteful use of water during Holi :

In the current situation where most cities in India are facing acute water shortages, the wastage of water during Holi is also being questioned. It is common for people to throw buckets of water at each other during Holi and children often resort to throwing water balloons at each other. The idea of a dry Holi seems foreign at first, especially as the climate warms around Holi and water provides welcome relief from the heat. Considering that in some urban areas, citizens can go without water for several days, it seems pointless to use so much water just to celebrate.[3]

Material and Methods :

The present study was conducted at CSIBER Trusts CNCVCW, Kolhapur, during the year 2020-21. Corn starch flour was used to prepare natural and eco-friendly Holi. Both raw tubers of corn flour and rice flour were collected from the local market of Kolhapur.

Preparation of Natural Holi :

Aqueous solution of natural dye (green, orange and yellow) extracted from plant parts of rose, hibiscus, Beetroot and turmeric were mixed uniformly with corn (10% moisture content) and in the ratio 1:1 (w/v) and was made into the dough by manual kneading. This dough is manually spread clean surface and exposed to sun drying till the moisture content reaches less than 10% (wet basis). The dried material was then crushed in a grinder and sieved through a 250-micron sieve to get the „Holi□ powder and to avoid any bacterial and fungal spoilage which in turn reduces the shelf life.

Dry Holi :

Green :

Use hibiscus leaves, wash them, and mix the paste with an equal amount of cornstarch to get a beautiful green shade. Use only fresh and uninfected hibiscus leaves.

Yellow :

Mix two teaspoons of haldi/turmeric powder with twice the amount of besan (gram flour). Haldi and besan are extremely healthy for our skin and are also widely used as ubtan while bathing.

Red :

Hibiscus flowers can also be dried and crushed to obtain a pink or red colour. Take some dry red rose petals, spread them on a newspaper and let them dry in the sun. Take the dried petals and crush them and use the red powder obtained.

Blue :

Butterfly pea flowers can be dried in the shade and ground to make a beautiful blue powder. Boil water, and add flowers. Mix for 10 to 15 seconds until the flowers lose colour, filter the contents and mix with flour and dry to obtain a blue powder.

Orange :

Collect the petals of Palash plants and soak them in water overnight. The soaking water was then mixed with the flour filter base to dry the media and grind the material. A smooth orange-coloured powder is ready.

Pink/purple :

Beetroot is a traditional source of magenta and purple colours. We prepare directly boiled beetroot in water with dyed water and mix it with the flour base.

Natural Holi pack :

The prepared Natural Holi colours was air-tightly packed in double-layered paper bags.

Assessing preference for natural Holi colour over commercial Holi

Two groups of participants i.e. teachers and students (A & B) of 20 members, each comprising CNCVCW are identified and selected for the purpose of assessment for preference of natural Holi

dye over commercial Holi. "Holi" powder of nine different shades was evaluated between natural Holi and commercial Holi of the same shades.

Table.3 Analysis of two different groups for natural and chemical Holi

Sr. No.	Particulars	Group A Teachers		Group B Students	
		Natural Holi with cornflour as filler base (%)	Commercial chemical Holi (%)	Natural Holi with cornflour as fillerbase (%)	Commercial chemical Holi (%)
1.	Overall acceptance and preference as "Holi" powder	93	60	90	80
2.	Appearance	85	50	82	65
3.	Texture	88	66	84	74
4.	Allergic reaction	00	80	00	90
5.	Awareness	63	90	70	90
6.	Availability	58	95	60	95
7.	Packaging	72	85	75	92
8.	Cost benefit	50	75	65	80
9.	Overall effectiveness	95	63	90	70

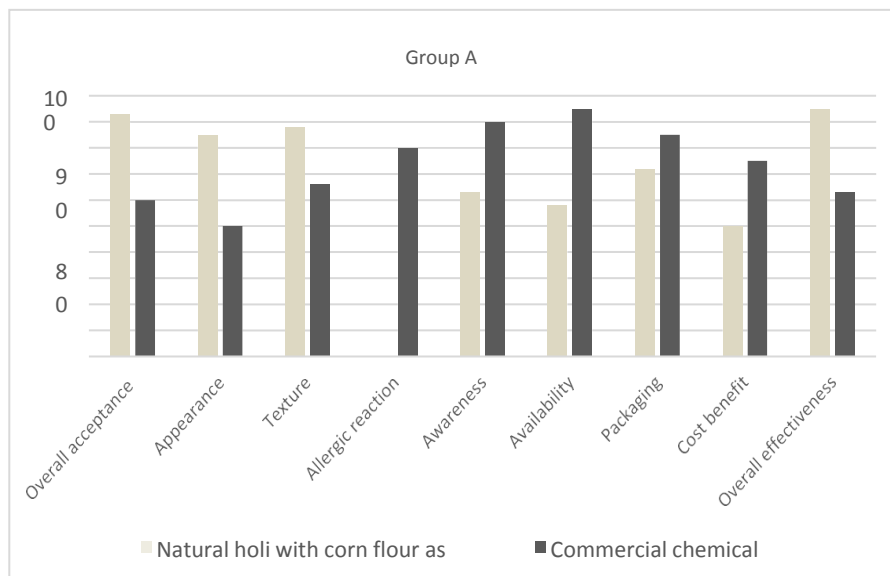


Fig. 1 Histogram showing analysis of group A for natural and chemical Holi

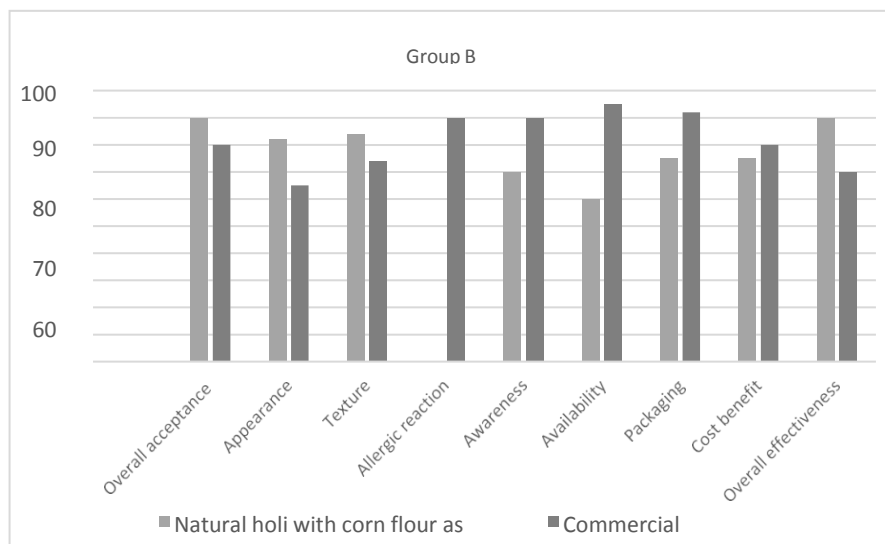


Fig. 2 Histogram showing analysis of group B for natural and chemical Holi

Results and Discussion:

Overall acceptance and preference like "Holi" powder, texture, colour preference of two different types of Holi were analysed between group A and group B.

It was observed from table no.3 that 90% of group A chose natural Holi flour, and 60% of group members preferred commercial Holi after learning about its harmful effects. From group B, 90% prefer natural Holi flour, and 80% of people choose commercial Holi. In terms of total efficiency of natural Holi colours is 95% of group A and total efficiency of commercial Holi colours is 63% of group A. For group B, the total efficiency of natural Holi colours is 90% and the total efficiency of commercial Holi colours is 70% for group A.

Conclusion :

The acceptance of Eco-friendly colour was observed. About 91.5 % of the people in the institute opted for eco-friendly colours over commercial colours, i.e. 70 % of people had choose commercial colour. This activity was done to promote Eco-friendly colours and make awareness about them. But recently, commercial chemical Holi with synthetic dye has replaced the harmless eco- friendly Holi in the market. Also, we realize the harmful effects of the chemical colours and the wastage of water during Holi. Hence, it is imperative for us, as responsible citizens, to practice eco-friendly ways of celebrating festivals such as Holi. The identified natural substances can be used for playing Holi in order to avoid harm to our health and environment.

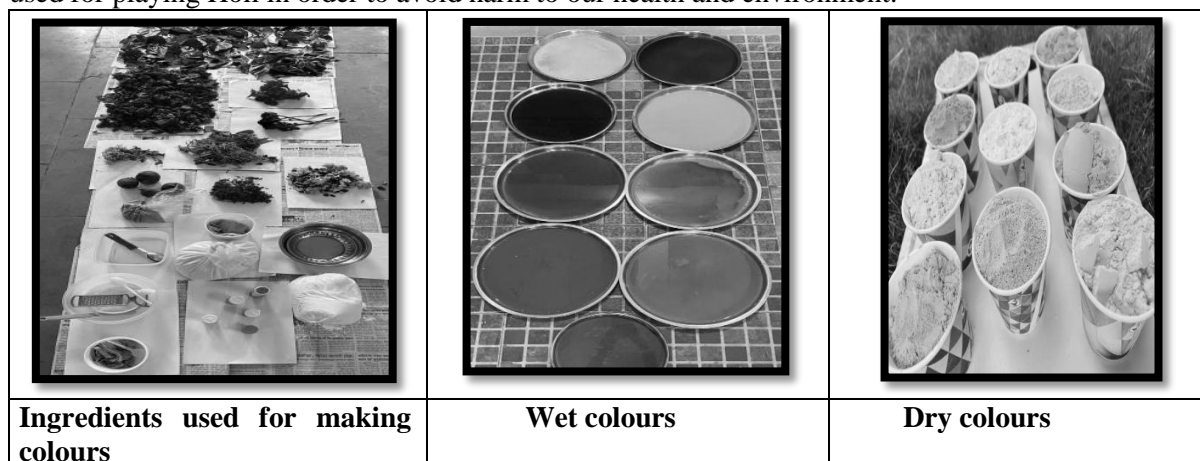


Fig. 3 Eco-friendly Holi with natural dye and corn starch flour as filter base of eleven different shades.



Fig. 4 “Holi” powder just after making (1) and seven months after storage at room temperature, at dark (2)

Quality of the colour during storage (seven months) at room temperature at dark in closed plastic containers revealed that no change in above mentioned quality between just after making and seven months after making (Fig. 4).

Some Suggestions For a Safe Holi :

Due to the global awareness of the side effects caused by chemical dyes, some researchers have suggested the following tips to enjoy a joyous Holi. Here it is necessary to define it in this article.

- Avoiding the use of chemical paints.
- Using natural and ecological colours.
- Oil your hair well; it will make it easier to get rid of the colour stuck in your hair. It will also limit the effect of chemicals on the hair and skin.
- Keep your lips tightly closed to prevent the colours from entering your mouth.
- Do not run or jump on a wet floor, and you could slip and risk broken bones.
- Keep the car/bus/train window firmly closed during the journey.
- Try to avoid going outside your premises during the peak of the festival.
- Prepare antioxidants and other anti-allergy medicines in case of an accident or in case you encounter any skin problems.
- Avoid drinking bhang (*Cannabis indica*) and alcohol during the festival.
- After the Holi celebration, take a bath in hot water.

Remove Holi Colours Naturally :

Before people paint you red and green, check out these simple, natural tips to get rid of the colour after Holi.

Use cold water :

Contrary to popular belief, washing your face and body with warm water will not remove colour spots. Hot water actually makes colours come off faster and harder. The first thing you do after playing Holi is splash your face with cold water and rinse your hair.

Skincare :

Make a paste especially with honey and add Multani mitti, body part scrub or use fruit scrub available in the market. The colours may not come off in one go, but the paste will really lighten the effect.

Mix lemon juice with an equal part of honey and apply it all over your face and body. Put some coconut oil on a cotton pad and wipe the colours with it. Prepare a packet with curd, besan or gram flour, turmeric, olive oil and lemon juice. After washing off the wraps, massage the body with a quality antiseptic cream or body oil. Prepare a mixture of calamine water and rose water on the face and gently rub it into the skin until it is all absorbed.

Hair care :

Rinse your hair with water to wash off excess colour. Before using a mild shampoo, apply egg yolk or cottage cheese and leave for about 30 minutes. Make a hair pack by soaking a few fenugreek (methi) seeds in four tablespoons of curd. After 30 minutes, wash your hair with shampoo. Also, can apply a mixture of honey and olive oil for deep conditioning.

Source :

<https://timesofindia.indiatimes.com/life-style/beauty/Holi-2018-How-to-remove-Holicolours-naturally/articleshow/51526042.com>

Acknowledgment :

We would like to put on record our sincere thanks and appreciation to all students of the Department of Environment Science and those who are involved in the assessment of eco-friendly natural Holi for proper documentation of this research paper. We would also like to acknowledge the people who are still continuing with their traditional knowledge and practices of natural dye extraction to some extent. Lastly, we would like to acknowledge all who are directly or indirectly involved by giving valuable advice, guidance, and unwavering support

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Analysis on 3D Printing or Additive Manufacturing in Food Industry

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Abstract : *3D printing or additive manufacturing is a concoction of traditional manufacturing and complex designs that enhances the visual appearance and creates signature culinary products. Several technical issues were identified, like the speed of printing, cost, complex designs and lack of integration. To overcome these problems, several methods were developed, like Extrusion based printing, ink-jet printing and binder jetting techniques. In the future, the requirement for customized food with personalized nutrition will get increase therefore, there is a necessity for the refinement of 3D printing of food. In this review paper's history, Various 3D printing techniques and the impact of 3D food printing points are foregrounded.*

Keywords : *Complex designs, Customized food, Techniques, Impact*

Introduction :

The use of 3-Dimensional (3D) printing, also known as additive manufacturing (AM), technology in the food sector, has a great potential to fabricate 3D constructs with complex geometries, elaborated textures and tailored nutritional contents. For this reason, 3D technology is driving major innovations in the food industry.

3D food constructs rely on three key factors: (1) print-ability (2) applicability and (3) post-processing. Especial emphasis is devoted to how the advantages/limitations of 3D printing techniques affect the end-use properties of the printed food constructs (Godoi et.al. 2016).

3D printing is an innovation that promises to revolutionize food formulation and manufacturing processes. Preparing foods with customized sensory attributes from different ingredients and additives has always been a need. The competency that additive manufacturing offers has been among the key reasons for its success in food processing applications. A detailed note on the globalization of customized printed foods, personalized nutrition, and applications in food packaging to highlight the range of applications of 3D printing in the food industry is also given. Importantly, key challenges in 3D food printing, emphasizing the need for future research in this field, are elaborated (NachalN. et.al. 2019).

In the 1980s a new way of industrial fabrication, which traditionally was a subtractive fabrication, was proposed the so-called additive fabrication. According to it, 3D objects are produced by adding layers of material starting from nothing instead of removing useless material from a full block. This way of fabrication has been called 3D printing with reference to a similar technology used in ink-jet printers.

Since then, more than 30,000 patents about 3D printing are reported to have been published just in the U.S. Over the years, various additive technologies have been continuously proposed, from photopolymerization to fusion deposition up to bio-printing recently. At the same time, several open-source computer programs assisting the fabrication process have been made available on the web. Nowadays, the cost of a desktop 3D printer is affordable for practically everybody. Therefore probably, we are at the beginning of a revolution in fabrication processes (SaviniA. et.al. 2019).

History :

3D-printed food was developed to create interesting food designs. It also attempted to revolutionize the food production process by creating food efficiently and at a lower cost. 3D food is still a relatively small niche market and has not progressed to be a widely used food production

method. 3D printing food was first developed in 2006. It has since branched out into many different applications and technologies. Typical constituents include powdered ingredients like sugar, meltable materials like chocolate or cheese, and dough or mash. 3D-printed meat is also being developed that makes use of either plant-based proteins or cultured animal cells (McHughT. et.al. 2017).

Category of 3D Food Printing Technique :

The 3D food printing technique has been classified into three categories that are extrusion-based printing, binder jetting, and ink-jet printing.

Extrusion-Based Printing :

The extrusion-based printing constructs a food model by extruding food through a nozzle with constant pressure. This technique is similar to conventional Fused Deposition Modeling (FDM). However, the starting material of extrusion-based printing can be both solid and paste (soft) with low viscosity, while the starting material of FDM is wire. In this extrusion-based printing process, the material is loaded in an extruder (cylinder) before it is extruded through a nozzle by ram pressure to create a food shape layer-by-layer. Examples of food fabricated via this technique are dough meat, paste, and cheese, which tested a variety of recipes to print sugar cookies. The result showed that the variation in ingredient concentration affected to fabricate of the food model, especially the ratio of butter, yolk, and sugar. Therefore, transglutaminase and bacon fat were added to simplify model fabrication. Moreover, applied Extrusion at room temperature to print lemon juice gel using the extruder conveying screw, as shown in figure 2. After that, conducted the experiment via a similar system to print fish surimi gel. The results show that the nozzle diameter, the nozzle movement speed, and the extrusion rate affect the quality of 3D food printing, excluding the nozzle height. To print solid staving material, investigated on melting Extrusion for printing complex chocolate models based on machine design, including mechanism design.

The results show that there are two important areas of design in which Designing the extruder assembly to be as rigid as possible, thereby reducing flexion and enabling more accurate deposition of chocolate and Improving the design of the active cooling system to quench the chocolate at lower temperatures, as shown in figure 3.

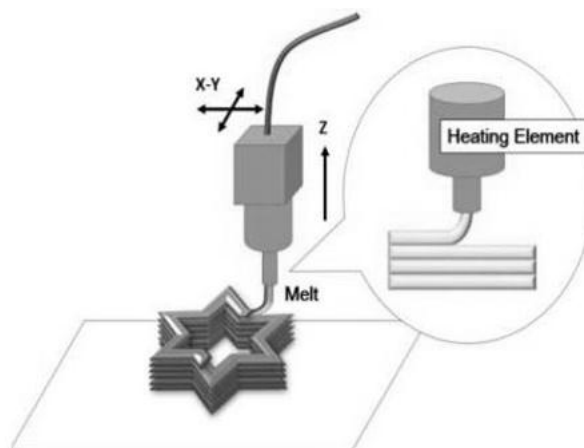


Figure- 1

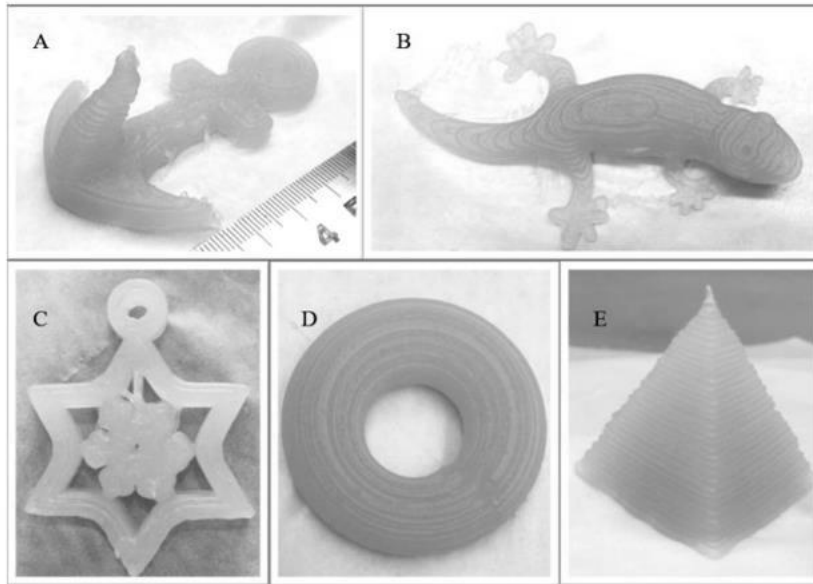


Figure- 2

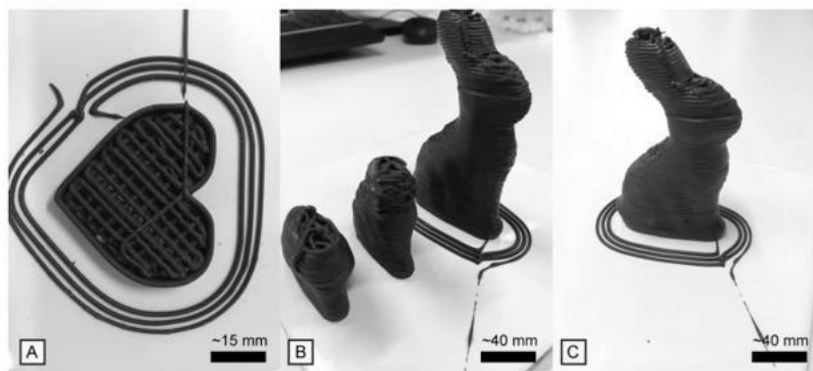


Figure- 3

Ink-Jet Printing (IJP) :

Ink-jet printing dispenses a material stream of droplets from a thermal head to certain regions for creating surface filling or decorating on food surfaces, such as cookies, cakes, and pizza, as shown in Figure 4. This process generally operates by using thermal or piezoelectric heads. In a thermal ink-jet printer, the print head is electrically heated to establish pulses of pressure that push droplets from the nozzle. There are two types of ink-jet printing methods: continuous jet printing and drop-on-demand printing. For the continuous jet printer, an ink is ejected continuously through a piezoelectric crystal by vibrating with a constant frequency. In order to obtain the desired flow ability of the ink, some conductive agents were added. For a drop-on-demand printer, a valve is a controller ink to eject out from heads under designed pressure. The printing rates of drop-on-demand systems are generally slower than the continuous jet systems, besides the resolution and precision of produced images are higher. The inkjet printer normally handles low-viscosity materials; therefore, it does not find application on the construction of complex food structures. Typical deposited materials are chocolate, liquid dough, sugar icing, meat paste, cheese, jams, gels and etc.

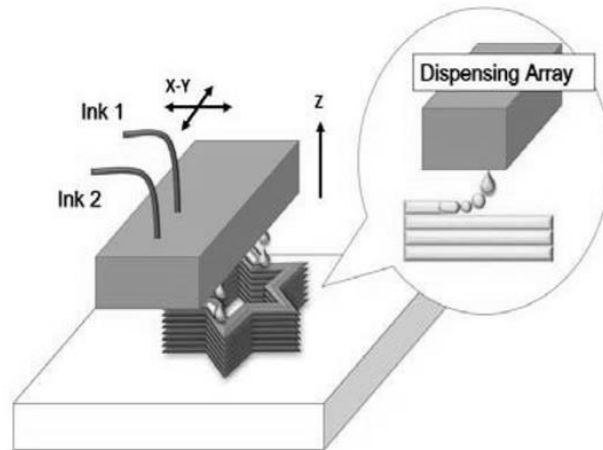


Figure 4

Binder Jetting :

Binder jetting, which is an additive manufacturing technology, constructs a model by using a binder to selectively bond layers of powders. In this process, small droplets of a binder with diameters less than $100\ \mu\text{m}$ are successively deposited onto the powder bed surface, which is a drop-on-demand print head based on a raster scanning pattern. After deposition of the liquid binder, the entire surface of the powder bed is exposed to a fixed amount of heat, which commonly used as a heat lamp, for establishing an appropriate mechanical strength via

partially cured binder within the generated layer to withstand the shear and gravitational compressive forces involved in the spreading and printing of subsequent. As shown in figure 5 (Pitayachaval, P. et.al 2018).

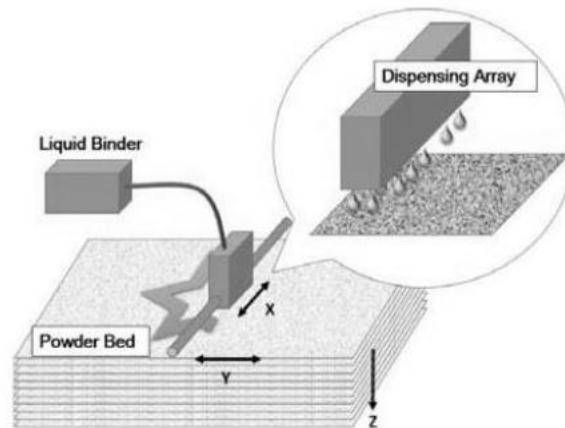
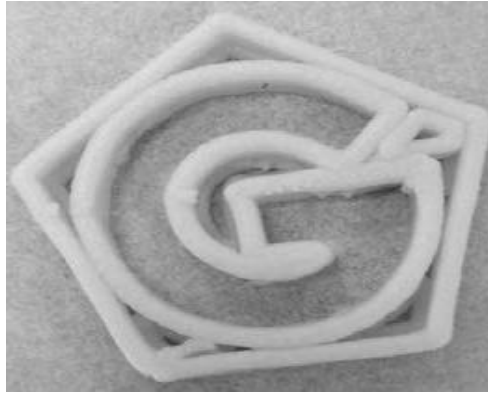


Figure 5

Impact of 3D Food Printing :

Food printers introduce artistic capabilities to fine dining and extend mass-customization capabilities to the industrial culinary sector. This benefits a high-value, low-volume customization food fabrication process that would be impossible to achieve currently. It also provides research tools to manipulate the structure development of solid food materials at multiple scales. This technology is still in the development stage; hence, it is important to understand its core value and potential applications in the market. At the same time, it is also necessary to follow up with technological progress and relevant applications in order to investigate how this new technology will meet the customers' needs and potentially change people's lifestyles.

Customized Food Design :



Most food manufacturing techniques are developed for mass production, while food creativity and user control of shapes, structures, and flavors are usually sacrificed. Food printer provides a platform for consumer experimentation with food forms and flavors. Previously, this customization process involved specifically hand-made skills with low production rates and high costs. Food printing technologies could potentially overcome these barriers by offering more freedom in food customization design on shapes, colors, and flavors for home users. It may generate more design solutions, such as customized chocolate shaping and personalized full-color images onto solid food formats. Fig. 6 shows some customized food pieces samples fabricated by our group.



Figure 6

Personalised Nutrition :

Except for existing nutritional preferences, individual dietary has highlighted the concept of personalized nutrition in terms of an individual's health status and body-type requirement. Food printing can enable precise control of people's diets and ensure fresh and healthy dishes that exactly meet the needs and preferences of individuals. It would significantly improve the population well-being. In this case, food ingredients, even with well-known material properties, must be tailored to specific formulations under each fabrication. More efforts are required to bring such highly customized food products into every home.

Simplifying Customized Foods Supply Chain :

Food printers will facilitate the implementation of a build-to-order strategy with low overriding costs. It is economical to locate production facilities near the end customers. This can help to reconfigure the customized food supply chain and bring products to consumers within a shorter time, an acceptable price while utilizing fewer resources.

Reformulating Food Processing Technologies :

Most food processing technologies associated with chemical and physical changes may not match requirements of 3D printing technologies. This applies to composition (ingredients and their interactions), structure, texture, and taste. Ingredient formulations with varied combinations and manipulation conditions can generate various textures in products, which may go beyond a manageable level. Also, printing material properties should be rigid and strong enough to support the weight of subsequently deposited layers as well as the thermal effects from the post-cooking process. Briefly, conventional food processing technologies are unlikely to fit into such a complicated scenario, and the whole process should be reformulated. For example, pre-conducting some processes (e.g. gluten formation and leavening) and replacing remaining processes (e.g. shaping and baking).

Process Design and Digitalization :

To achieve a better understanding of 3D food printing processing, a mathematic model that can realistically describe this process with inputs, outputs, and process type will be essentially useful. Customized food fabrication processes and food printer design are the major driving force for developing such a model. Key process parameters such as temperature, moisture, and food properties such as density, thermal and electrical conductivity, viscosity, and permeability are often coupled. It is very necessary to digitalize comprehensive cooking processes before mathematical manipulation, which greatly differs from traditional food processing models. Data on food properties can be obtained from measurement, computerized databases, handbooks and theoretical calculations. In reality, food properties often vary from batch to batch due to differences in formulations, etc. By varying the property data and geometry around the expected value in the simulation model, one can bracket the properties and predict the results of particular food processing for a certain range of properties. To develop this simulation model, researchers will further explore to model specifically-designed printing process with the 3D object geometry, perform data quantification for each process (ingredients metering and mixing, printing, baking, and so on), and determine communication protocols between different functions or processes (SunJ. et.al. 2015).

Conclusion :

This paper reviews the history of 3D food printing, its techniques and impact of 3D food printing. Although quite a number of food printing technologies are available, there is still a long way to further develop them for commercial usage. 3D printing is still primitive and with limited internal structure and monotonous textures. It is necessary to develop a systematic way to investigate printing materials, platform design, printing technologies and their influences on food fabrication. Meanwhile, the food design process should be structured to promote user's creativity, the fabrication process should be quantified to achieve consistent fabrication results, and a simulation model should be developed to link design and fabrication with nutrient control.

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Formulation and Development of Multi Pulse Cutlet Premix Incorporated with Dehydrated Vegetables

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Abstract : *Cutlet is one of the most popular snacks eaten across the world. Like the traditional cutlets, multi pulse cutlet is made from dehydrated vegetables and added with spices to enhance its taste. The cutlets were made up of multi-pulse flour i.e. (Kidney bean, Moong dal, Moth beans, and Bengal gram flour) these pulses were germinated (soaked overnight) to make them rich in their nutrient content. After analyzing the results, the premix of germinated pulses found rich in nutrients as compared to the non-germinated one. The nutritive value of prepared premix was Energy-350.76 Kcal, Protein-25.96%, Fat-5.40 %, Carbohydrate- 49.58%, Moisture-8.90%, Fibre -1.40%, Calcium -658.00 mg, Iron-2.40mg. The appearance was acceptable and conducted the sensory analysis by the hedonic points and the average was 7.8 which is good and acceptable. Hence, it is found that Multi pulse premix was formulated by simple processing techniques which provide higher Nutritive value.*

Keywords : *Cutlet, Multipulse, Vegetables, Premix, Formulation, and Evaluation.*

Introduction :

A ready-to-cook nutritious snack mix foods are popular and in demand due to convenience, time-saving, and require no skill in preparation. Nutrition is the key factor in looking at such convenience foods. The premix was formulated and developed by blending the flour from popped pulses (Kidney beans, Moong dal, Moth beans, and Bengal gram) with dehydrated vegetables like spinach, moringa leaves, carrots, beetroot, cauliflower, and other ingredients (ginger, garlic, chili powder, garam masala and salt) in the optimized proportion. Several trials have been performed by varying the proportion of ingredients. The work indicates the potential of using coarse pulses and vegetables for the preparation of nutritious food. Authentic food is a blend of pulses, vegetables, and spices. Pulses are chief constituents of the human diet and are regarded as "poor man's meat" (Dilis, 2009). Pulses play a vital role in cereal-based diets. They are inexpensive and valuable sources of micronutrients/vegetable protein.

Moong dal, a well-known staple pulse of the Indian diet, is extensively rich in protein and dietary fiber and provides considerable amounts of carbohydrates and fats. They offer appreciable amounts of vitamins and minerals. Moong beans are a high source of nutrients, including manganese, potassium, magnesium, folate, copper, zinc, and various B vitamins. They are also very filling food, high in protein, resistant starch, and dietary fiber. Because of their high nutrient density, moong beans are considered useful in defending against several chronic, age-related diseases, including heart disease, cancer, diabetes, and obesity (Singh A. et.al., 2017).

Moth beans are widely grown throughout the world and their dietary and economic importance is globally appreciated and recognized. They are important sources of proteins, carbohydrates including fiber, and certain minerals (Ca, Mg, Zinc, Iron, Potassium, and Phosphorus). Moth beans are normally consumed in India as cooked and seasoned (with spices) beans (whole as well as dhal) or sprouted and cooked (usually stir-fried with suitable spices) beans prior to consumption. Moth bean seeds contained 24.1% protein, 0.8% crude fibre, 1.3% fat and 3% ash (Bhattacharya S., 2010). It is a rich source of iron which is about 9.6mg/100 mg.

Kidney beans consist of mainly carbohydrates & are a good source of nitrogen & protein. It also contains minerals & bioactive compounds (Kimothe S., 2020) On germination of Bengal gram, may provide an efficient amount of nutrients, especially protein and fibre. Sprouting of legumes

improves digestibility and better availability of essential amino acids, iron, and calcium than in dormant seeds. Apart from enhanced nutritional value, germination improves taste and texture (SharmaL., et. al, 2019).

Spinach is a rich source of major micronutrients such as iron, manganese, zinc, and magnesium and also contains small quantities of vitamins E, A, C, K, folate, thiamine (B1), pyridoxine (B6) and riboflavin (B2). Moreover, it is a rich source of fiber and has the added benefit of low-calorie content. It is present in food in many forms, such as raw, canned, boiled, pureed, frozen, dehydrated, cooked, and baked (Slavin.J. L.,2012).

Moringaoleifera is employed as a vegetable, herbal tea, and processed food for its nutritional properties as a source of proteins and essential amino acids (i.e., cysteine, methionine, lysine, and tryptophan) (Stadtlander T.,2017). They can be consumed fresh, cooked, or dried. Since dried Moringa leaves retain their nutrient content, it is possible to convert them into leaf powder.

Cauliflower has a high proportion of water, up to 91%, sugar in an amount of 4.5%, protein 2.5%, crude fibre 1.8%, and low fat, only 0.3%. The minerals in the cauliflower are significantly represented by potassium, phosphorus, calcium, sodium, magnesium, as well as iron and sulphur. Another part is the phytochemicals and vitamins (vitamin C, vitamin B 12, etc.) (Anton, U. H. E. R., et.al., 2013).

Carrots are rich sources of carotene, and ascorbic acid and are known as vitaminized food with moisture, protein, fat, carbohydrates, and sugars (Raees-ul, H., 2015). Beetroot (Beta vulgaris L.) contains high amounts of biologically active substances including betalains, carotenoids, phenols, B-vitamins (B1, B2, B3, B6, and B12), folate minerals, fibres, as well as sugars (KaleR., et. al.,2018).

Materials and Methods :

The present work entitled 'Formulation and Development of Multi Pulse Cutlet Premix Incorporated with Dehydrated Vegetables' was carried out in the laboratory of the Department of Food Technology, College of Non-Conventional Vocational Courses for women, Kolhapur. Kidney beans, Month beans, Moong dhal, Gram flour, Spinach, Moringa Leaves, Cauliflower (stem), Beetroot, Carrot, Ginger, and Garlic were procured from the local market and stored in a dry place at room temperature inside the laboratory were used for the project work.

Processing of Raw Material :

The materials were cleaned and then rinsed to remove dirt, dust, and other impurities.

1. **Cleaning-** The materials were cleaned using handpick method to remove impurities.
2. **Soaking-** All the pulses were soaked overnight for the process of germination.
3. **Grinding-** The germinated pulses were coarsely ground.
4. **Blanching-** All the vegetables were blanched (at 80°C) to slowdown the microbial load and to enhance colour.
5. **Cutting-** All the vegetables were cut down into small pieces.
6. **Dehydrating-** The vegetables and pulses were dehydrated in the cabinet dryer (72°C).
7. **Mixing-** Mix all the dehydrated ingredients together to form a premix.

Formulation of Premix :

The prepared samples were seasoned with ginger, garlic, red chilli powder, salt, and garam masala and then mixed to formulate three dried instant premixes, namely Sample A, B, and C as shown in Table no 1. The sample A was made by using germinated Moth beans, Kidney beans, and Moong dhal. The obtained mixtures were packed into polythene bags and kept at room temperature for further analysis.

Table No.1: Formulation of Premix

Ingredients	Sample A (Germinated)	Sample B (Non-germinated)	Sample C (Control)
Spinach	15gm	15gm	-
Moringa Leaves	5gm	5gm	-
Cauliflower	10gm	10gm	-
Carrot	10gm	10gm	-
Beetroot	10gm	10gm	-
Moth Beans	30gm	30gm	40gm
Kidney Beans	20gm	30gm	40gm
Moong Dhal	30gm	30gm	40gm
Bengal Gram Flour	20gm	20gm	50gm
Ginger	5gm	5gm	-
Garlic	2.5gm	2.5gm	-
Red Chilli powder	1gm	1gm	1gm
Garam Masala	0.5gm	0.5gm	0.5gm
Salt	1gm	1gm	1gm

Preparation of Instant Cutlet Premix :

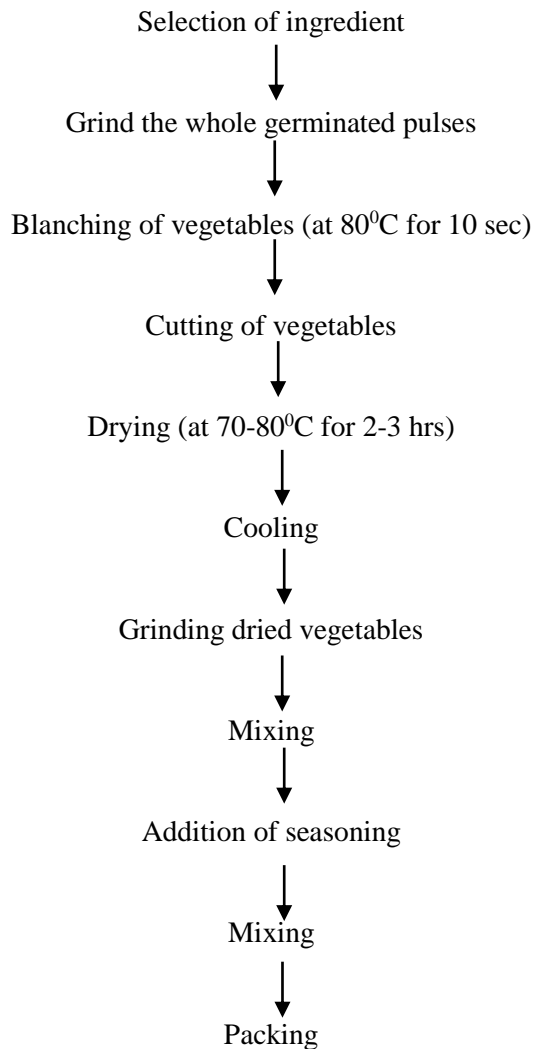


Fig. 1: Flow diagram for preparation of cutlet premix

Result and Discussion :

Physicochemical Analysis of Instant Cutlet Premix :

The proximate composition (i.e. moisture, ash, carbohydrate, protein, fat, fiber) of the instant multipulse cutlet premix was estimated according to the standard analytical methods (AOAC) as shown in Table No. 2.

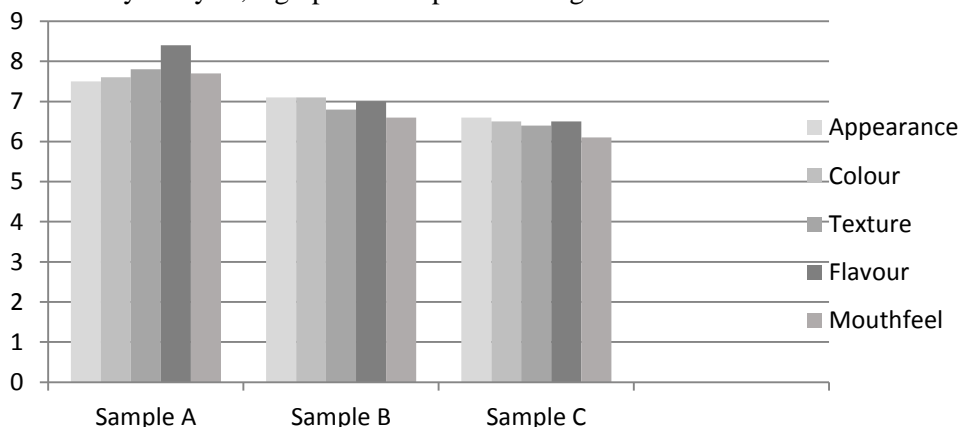
Table No.2: Nutritive value of samples

Sr. No.	Parameters	Sample A	Sample B
1.	Moisture	8.90 %	12.45%
2.	Proteins	25.96 %	15.50%
3.	Total Fats	5.40%	5.71%
4.	Carbohydrates	49.58 %	51.56%
5.	Total Ash	3.30 %	5.10%
6.	Calcium as Ca	658.0 mg	59.00 mg
7.	Iron as Fe	2.40 mg	1.90 mg
8.	Sodium as Na	354.55 mg	89.47 mg
9.	Crude- Fibres	1.40 %	1.95%
10.	Energy	350.76 Kcals	319.86 Kcals

In the above study, it was found that Sample-A was selected among the other samples, contained 25.96% protein, the carbohydrates were 49.58 % and the fat percentage was very low i.e.: 5.40%. Due to germination, there was an increase in the nutrients as compared to the non-germinated one. Several trials have been performed by varying the proportion of ingredients. The nutrient composition, functional properties, sensory qualities and storage characteristics of the product were analysed. The sensory evaluation of the product revealed that colour, taste, texture, aroma, appearance and overall quality were in the acceptable range, with a mean score of 7. The shelf life of the product was about 60 days under normal conditions when stored in low-density polypropylene pouches.

Sensory Evaluation of Instant Multipulse Cutlet Premix :

Different formulations of instant mixes were also subjected to sensory evaluation based on sensory parameters such as color and appearance, texture, taste, flavor, and overall acceptability (Fig.2). The sensory evaluation was carried out in between three samples i.e. germinated (Sample A), non-germinated (Sample B) and Control sample (Sample C). The samples were tasted by an expert panel on the 9-point hedonic scale and it was found that Sample A has a good overall acceptability. Based on the sensory analysis, a graph can be plotted using the data.



Conclusion :

Instant multipulse cutlet premix formulation containing Kidney beans, Moong dhal, Moth beans, Bengal gram flour, Spinach, Moringa Leaves, Cauliflower (stem), Beetroot, Carrot, Ginger, and Garlic was standardized based on sensory and nutritional properties. Sample A, which was made by germinating pulses, was finalized. This multipulse cutlet premix was found most acceptable based on sensory scores (8.4). The prepared premix was found rich in protein (25.96g/100g), crude fiber (1.40g /100g), calcium (658.0 g/100g), and low in fat (5.40 g/100g), carbohydrate (49.58 g/100g) and energy value (350.76 Kcal/100g). The multipulse cutlet can be prepared by mixing 200 g of premix in 100 ml water and boiling/steaming for 10 minutes.

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A Stride Towards Zero Carbon Through Effective Municipal Waste Management of Solapur City: A Case Study

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Abstract : *Solid Waste is one of the environmental problems. Improper management of solid waste causes hazards. Most solid waste is disposed of unscientifically in open dumps and landfills, creating problems for public health and the environment. It is possible to tackle this problem with a proper plan and its implementation.*

In the present case study, an attempt has been made to provide a comprehensive review of the collection and treatment technologies of municipal solid waste in the city of Solapur. Solapur Municipal Corporation has taken the initiative towards recycling solid waste to create bioenergy and fertilizer through public-private partnerships in waste management. This was the first-ever project in India. This is a step towards a sustainable waste management system, which may lead to environmental, institutional, financial, economic and social sustainability. This study explores an alternative approach to solid waste management.

The study is concentrated on the present status of Solid Waste Management in Solapur City. For the study, a survey was carried out on existing facilities of Solid Waste Management such as the quantity of solid waste, the practice of collection, segregation, and treatment of solid waste, etc. Open dumping or non-scientific landfill causes the release of greenhouse gas like methane into the environment. In this present case study, it is found that the problem has a solution through effective solid waste management, which is leading the city towards less carbon footprint. The relevant data was obtained from Solapur Municipal Corporation, Solapur Bio-Energy Systems Private Limited, and individual field visits.

Keywords : *Solapur Municipal Corporation, Solapur Bio-Energy Systems Pvt. Ltd., waste management, bioenergy, fertilizer, zero carbon.*

Introduction :

Waste management involves the collection, transportation, processing, recycling, or disposal, and monitoring of waste materials. It relates to refused materials produced by human activity and is generally undertaken to reduce their effect on health the environment. The problem of municipal solid waste management in major cities has acquired alarming dimensions in India. The present system of solid waste management in India is fraught with many inadequacies in terms of treatment methods and techniques(Bhatia et al, 2019). Illegal dumping is a major problem of significant concern with regard to human health, safety, property values in particular, and quality of life in general urban societies. It imposes an economic burden on the local government, which is typically responsible for cleaning up these open solid waste dump sites(Deshukh et al, 2022). Poor collection and disposal practice is another problem. It attracts and promotes sites for the breeding of insects, rodents, and pathogens that can cause and transmit various diseases in society(Chavan et al, 2013).

For the last four decades, India has been trying to make electricity from domestic waste. But even after support from the government, most of the experiments have failed. All this while, some European countries are supplying clean electricity to their citizens. In India, there's one city that has tasted success in converting waste into energy(Birajdar et al, 2022). It's Maharashtra's Solapur, where a waste-to-energy plant has daily generation of 4 MW of eco-friendly power from 2013. Solapur has a population of near about 10 lakh and generates approximately 300 MT of municipal

waste daily. Earlier, this waste was dumped in a landfill along the Solapur-Tuljapur road. In 2004 Solapur Municipal Corporation and Cicon Environment Technology Limited made an agreement to process solid waste. Afterward, CiconSolapur project was renamed Solapur Bio-Energy Systems Private Limited. It is the first of its kind in India. Now Delhi, Kalyan-Dombivali, Pallakkad, and Varanasi Municipal Corporations are also having such projects (<https://cpcb.nic.in/Actionplan/Solapur.pdf>).

Solapur City:

Situated in the southeastern part of Maharashtra, near the Karnataka border, Solapur City is administered as Municipal Corporation and is also the administrative headquarter of Solapur District. It consists of eleven Tahsils. The city has a mixed population that migrated and settled from Karnataka, Andhra Pradesh, and Telangana. According to the 2011 census, the city has a population of 9,51,558 and is spread over an area of 178.57 sq. km. Solapur is an important junction situated on the north-south railway line. Solapur has many small and medium-scale industries, mainly power looms. Chaddars, towels, and bed sheets fabricated and produced in Solapur have earned a special reputation in the international market. Solapur City has the largest industry for Beedi production. Beedi rolling is classed as a cottage industry.

In Solapur, primary sources of solid waste are local households, commercial establishments, hospitals, hotels, restaurants, and markets. Solapur Municipal Corporation is responsible for the collection, storage, segregation, transportation, and disposal of all solid waste generated in the city.

Demographic Details:

Solapur with an area of 178.57 Sq. Km has a population of 951,118, as per 2011 census. The demographic details are as follows:

Population	Male	Female	Total
Solapur City	4,81,064	4,70,494	9,51,558

Source: Maharashtra Pollution Control Board Revised Action Plan for Control of Air Pollution in Non-Attainment Cities of Maharashtra Solapur Municipal Corporation, 2019.

Review:

Disposing of solid waste out of sight does not solve the problem but indirectly increases the same manifold, and at a certain point, it goes beyond the control of everybody. The consequences of this practice such as health hazards, pollution of soil, water, air & food, unpleasant surroundings, and loss of precious resources. So it is essential to focus on the proper management of waste. Management of solid waste, which generally involves proper segregation and scientific recycling of all the components, is, in fact, the ideal way of dealing with solid waste.

Classification of waste:

Solid waste: vegetable waste, kitchen waste, household waste, etc.

E-waste: discarded electronic devices such as computers, TV, and music systems.

Liquid waste: water used for different industries, tanneries, distilleries, thermal power plants

Plastic waste: plastic bags, bottles, buckets.

Metal waste: unused metal sheets, metal scraps.

Further, it can divide into wet waste (Biodegradable) and dry waste (Non-Biodegradable).

Wet waste (Biodegradable):

Kitchen waste includes food waste of all kinds, cooked and uncooked, eggshells and bones; Flower and fruit waste includes juice peels and house-plant waste; Garden sweeping or yard waste consisting of green/dry leaves; green waste includes vegetables & fruits, waste from food & tea stalls/shops, etc.

Dry waste (Non-biodegradable):

All kinds of Paper and plastic, Cardboard and cartons, Containers of all kinds, Packaging material, all kinds of glass, metal, rags, rubber, House sweeping (dust), Ashes, Foils, wrappings, pouches, sachets and tetra packs, Discarded electronic items from offices, colonies viz. cassettes, computer diskettes, printer cartridges and electronic parts, Discarded clothing, furniture and equipment.

Basic Principles of Solid Waste Management:

4Rs: Refuse, Reduce, Reuse & Recycle

Refuse: Avoid buying anything which does not really need.

Reduce: Reduce the amount of garbage generated.

Reuse: Reusing everything to its maximum and making secondary use of different articles.

Recycle Conversion of the recyclable garbage into manures or other useful products.

Method:

Solapur Municipal Corporation collects waste from all over the city and dumps it on the project site. This plant is run by Solapur Bio-Energy Systems Pvt. Ltd., which uses to convert the dumped garbage into electricity, organic compost, and other products. The company uses the electricity to run the plant and also exports the remaining to Maharashtra State Electricity Distribution Company Ltd. The company initially produces methane gas from which engines use to run, and then electricity is generated. The remaining part of the wet waste is used to produce compost fertilizer and other products like seed balls, palates, bells, etc.

Data:

The data has been obtained from Solapur Municipal Corporation, Solapur Bio-Energy Systems Pvt. Ltd., and other reliable sources, studied, and analysed.

Zone-wise details of Households:

Solapur Municipal Corporation has set up eight zones. The area of the city has been divided into these eight zones for decentralization of the administration. The households that come under each zone are as follows.

Zone	Households
Zone No. 1	19309
Zone No. 2	15972
Zone No. 3	26593
Zone No. 4	18398
Zone No. 5	21843
Zone No. 6	17248
Zone No. 7	20813
Zone No. 8	12836

Source: Solapur Municipal Corporation solid waste management department report, Nov. 2022.

Zone-wise solid waste collection provision:

Solapur Municipal Corporation has arranged the system of Ghantagadi, which collects the waste from door to door. Each Ghantagadi used to run 25 to 35 km/ day. Excluding these Ghantagadi, the authorities have 12 Containers, two hook loaders, which use to carry capsules, and four dumpers. These dumpers carry 1.5 MT of solid waste at one time, which is generated from vegetable markets, road sweeping etc. The number of Ghantagadi per zone is as follows.

Zone	Ghantagadi
Zone No. 1	27
Zone No. 2	25
Zone No. 3	25
Zone No. 4	24
Zone No. 5	25
Zone No. 6	21
Zone No. 7	21
Zone No. 8	22

Source: Solapur Municipal Corporation solid waste management department report, Nov. 2022.

Solid waste collection in each zone:

Generation of waste in Solapur is near about 250MT/day which are collected by the Corporation Solid Waste Management department. The quantity of solid waste per zone is as follows.

Zone	Solid waste collection in MT
Zone No. 1	43.445
Zone No. 2	36.780
Zone No. 3	30.300
Zone No. 4	15.700
Zone No. 5	18.800
Zone No. 6	25.670
Zone No. 7	24.180
Zone No. 8	26.000

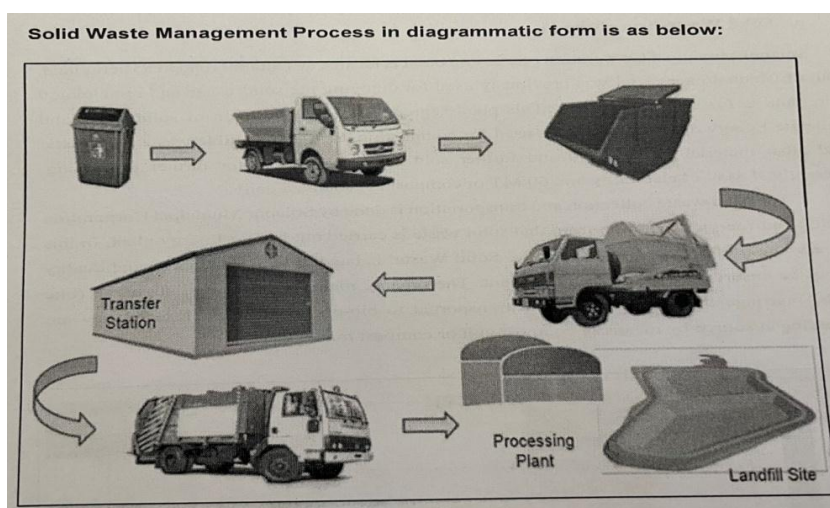
Source: Solapur Municipal Corporation Solid Waste Management Department report, Nov. 8, 2022

Daily collection of solid waste:

Total waste generated in Solapur corporation area is 245MT of which 36% is wet, 11% is dry) and remaining 53% is mixed.

Wet waste in MT	Dry waste in MT	Mixed waste in MT	Total
89	27	129	245

Source: Solapur Bio Energy Systems Pvt. Ltd. report date Nov. 8, 2022.



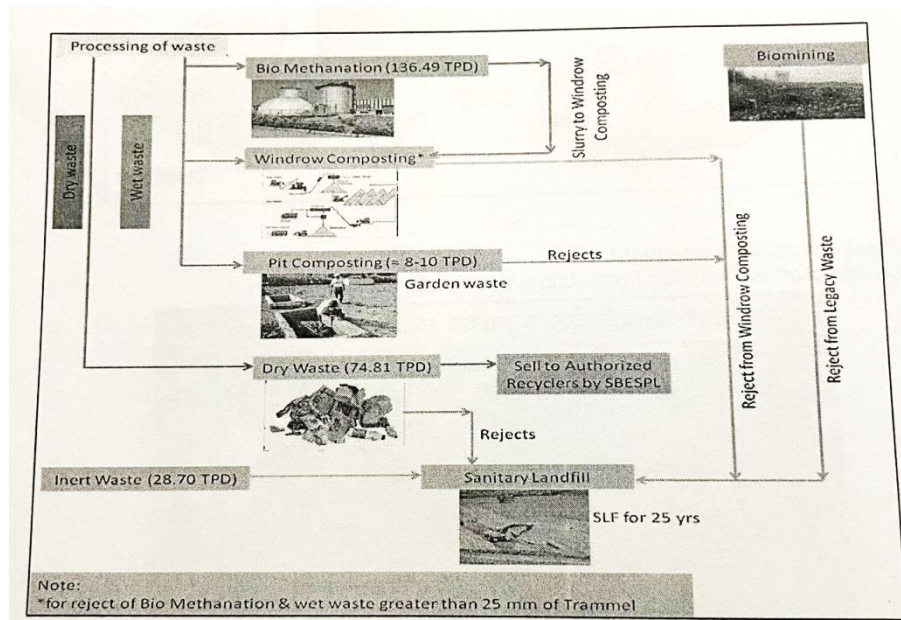
Source: Maharashtra Pollution Control Board Report 2019.

Production of electricity and fertilizer:

The Solapur Bio-Energy Systems Pvt. Ltd. use to process the waste, which is supplied by the Solapur Municipal Corporation and produces electricity, fertilizer, seed balls, palates, and bells (used in boilers). Out of the produced power, two megawatts is used to run the plant, and the remaining two megawatts is exported to Maharashtra State Electricity Distribution Company Ltd. The compost fertilizer is supplied to Zuari, RCF and Deepak Fertilizers, etc.

Electricity	Compost Fertilizer
4 Megawatt/day	40 MT/day

Source: Solapur Bio Energy Systems Pvt. Ltd. Report.



Source: Maharashtra Pollution Control Board Report 2019.

Discussion:

The Solapur Bio-Energy Systems Pvt. Ltd. has developed a technology that can produce electricity from waste and deployed it successfully in the Solapur plant. The plant is then connected to the electricity grid, completing the conversion process. This plant segregates organic fraction of solid waste and generates energy & the remaining is used for composting. Non-compostable waste like plastic and other material is separated and further supplied to scrap vendors for further processing. Presently, 4 MW of electricity and 40 MT of compost is generated daily. The solid waste collection and transportation is done by Solapur Municipal Corporation (SMC), and energy generation from that supplied solid waste is carried out by the Bio-Energy plant.

With the following important issues, the initiative is leading the city towards low carbon footprints.

The energy is generated using lower amounts of carbon emissions such as wind, solar, hydro, or bioenergy. These alternative methods are better as they release less carbon into the atmosphere. The Solapur plant is based on effective waste management, from which green energy is generated. The bioenergy plant in Solapur runs on self-sustaining electricity generated in an environmentally friendly way. No outside energy is used to treat Municipal Solid waste. It also supplies green electricity to the Grid.

Segregation of nonbiodegradable materials for either reuse or recycle, thereby saving on energy consumption, has become possible.

The plant produces high-quality compost, which is maintained to fertilizer standards and helps in soil rejuvenation, and lessens the use of chemical fertilizer, which is produced either by mining or in chemical factories.

Effective management of Municipal Solid Waste is taking place in Solapur, which is helping to maintain good sanitary conditions in the city, thereby increasing the repairable air quality and the quality of life of people. Thus it is helping to save more on carbon by way of reducing medicines, hospitalization, etc.

Conclusion:

Solapur is one of the leading urban centers. The management and disposal of solid waste were not scientific, and they created environmental problems. But, the initiative of Solapur Municipal Corporation in collaboration with Solapur Bio-Energy Systems Pvt. Ltd. has proved the smart use of waste is possible. The problem of Municipal Solid Waste, which has become a serious environmental problem, can be tackled and can produce clean energy as well as other organic products. To achieve sustainability and environmental goals in the field of waste management, there is a need to bring innovation by systematically analyzing the strengths and weaknesses of the community as well as the Municipal Corporation, based on which an effective waste management system can be evolved with the participation of various stakeholders. Solapur Municipal Corporation has created a landmark by recycling solid waste with smart solid waste management and leading towards zero carbon.

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Challenges of Human Resources Development in Non-Profit Organizations

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***Abstract :** Human resources are considered an important part of both profit and non-profit organizations. Human resources are of particular importance in any type of organization. For-profit organizations have a separate human resource department to handle human resources. The majority of non-profit organizations have to face different human resource challenges. Most non-profit organizations have inadequate HRD practices; this affects the overall performance of an employee at the individual and organizational levels. Many non-profit organizations employ non-competent staff due to the paucity of funds, long-term projects, and infrastructure of the organization. A non-profit organization depends on donations from donors. This affects the Non-profit organization's human resource recruitment and retention, Training & Employee engagement, and so.*

This paper is based on the secondary data. In this paper, an attempt has been made to shed light on the human resource development challenges faced by non-profit organizations.

***Keywords :** Human Resource Development, Challenges, Non-profit Organization, HRD Practices, Organizational Development.*

Introduction :

Non-profit organizations are playing an important role in the socioeconomic development of society. Over the last few decades, non-profit organizations increased in huge numbers. As with the increasing number of non-profit organizations, the need for skilled and competitive human resources also surged. Hence Human Resource Development has gained significant importance in the non-profit sector.

Most nonprofit organizations face a variety of resource challenges, including financial, information, and human resources. Human resource challenges are of paramount importance because they are the change agents of the service.

Human resources are an important aspect of every non-profit organization, and from an organizational point of view, human beings are resources, and an organization cannot exist without human beings. The importance of human resources in helping develop an organization's goals and outcomes is immeasurable. Some non-profits recognize the importance of competitive and skilled human resources in organizational development and give priority to enhancing the potential of an individual. Self-development, satisfaction, commitment, and motivation of human beings contribute individually and collectively to the attainment of the desired objectives of an organization.

Nowadays, non-profit organizations are becoming aware of the advantage of sustainable competitive human resources. Nowadays, non-profit organizations are becoming aware of the advantage of sustainable competitive human resources. But the implementation of human resource development practices is not on their list of priorities. Organizational management does not invest adequate time and resources to develop the capacity of their human resources. According to Ullah & Yasmin, in the age of competitiveness, organizations cannot afford to bear the loss of potential human resources.

The success or failure of the organization depends on the attentive implementation of human resource development practices. The sustainable development of an organization is depending on the effective management of its human resources. The overall purpose of human resource development is to ensure that the organization is able to achieve success through its human

resources. Human resource development is defined as the process of increasing the knowledge, skills, and capacities of an organization's most valued assets – the people working there who individually and collectively contribute to the achievement of its objectives. Broadly, Human resource development practices are required not only to maintain the people as resources but also to enhance the capability of the organization through its competent people.

Concept of Non-Profit Organizations :

Non-profit organization is a legal entity organized and operated for a collective, public, or social benefit, in contrast with an entity that operates as a business aiming to generate a profit for its owners. Key aspects of nonprofits are accountability, trustworthiness, honesty, and openness to every person who has invested time, money, and faith into the organization. Nonprofit organizations are accountable to the donors, founders, volunteers, program recipients, and the public community. Theoretically, for a nonprofit that seeks to finance its operations through donations, public confidence is a factor in the amount of money that a nonprofit organization is able to raise.

An Introduction to Human Resource Development (HRD) :

Human Resource Development (HRD) is the integrated use of training and career development efforts to improve individual or group performance and overall organizational effectiveness. Develop the skills employees need for their current jobs and prepare for future roles through planned learning activities. HRD is focused on matching the needs of individuals and organizations. While selecting and retaining the right people for the right jobs has always been the focus of HR, the focus of talent development is on employee motivation and development. This requires HR departments to create policies and programs that lead to employee development and contribute to organizational development.

Human resource development in an organizational context is a process in which the employees of an organization are continuously and systematically supported.

1. Acquire or sharpen the skills necessary to perform a variety of functions related to your current or anticipated future role.
2. Develop your general competence as an individual and discover and use your inner potential for personal and/or organizational development purposes. And,
3. Develop an organizational culture where superior-subordinate relationships, teamwork, and collaboration between sub-units are strong and contribute to employee well-being, motivation, and pride.

HRD is necessary for organizations that want to be dynamic and growth-oriented or thrive in a rapidly changing environment. An organization can become dynamic and grow only through the efforts and capabilities of its people. HR policies can keep employee morale and motivation high, but these efforts are not enough to make an organization dynamic and break new ground. Employee skills must be continuously learned, sharpened, and used. To that end, an "enablement" organizational culture is essential. An organization has an enabling culture when employees take initiative, take risks, experiment, innovate and make things happen.

Definitions of HRD :

According to Leonard Nadler, "Human resource development is a series of organized activities, conducted within a specialized time and designed to produce behavioural changes."

In the words of Prof. T.V. Rao, "HRD is a process by which the employees of an organization are helped in a continuous and planned way to (i) acquire or sharpen capabilities required to perform various functions associated with their present or expected future roles; (ii) develop their journal capabilities as individual and discover and exploit their own inner potential for their own and /or organizational development purposes; (iii) develop an organizational culture in which superior-subordinate relationship, teamwork and collaboration among sub-units are strong and contribute to the professional well-being, motivation, and pride of employees."

According to M.M. Khan, "Human resource development is the cross of increasing knowledge, capabilities and positive work attitudes of all people working at all levels in a business undertaking."

Challenges of Human Resource Development (HRD) :

There are lots of challenges faced by the non-profit organization. The status of non-profit often widens the Human resource challenges. Due to limited financial resources, non-profits find difficulty in recruiting and retaining competitive human resources.

The following are the human resource development challenges identified with the help of secondary data;

Recruitment, onboarding, and retention of competent staff With Limited Resources :

In this era of rapid change, recruitment, and retention are proving to be an undeniable challenge for human resource development. One of the biggest challenges a non-profit organization faces is identifying its recruitment needs. As many of the non-profit organizations are project-oriented, they face recruitment and retention challenges. Project-oriented organizations face challenges in retaining the employee with them till the termination of the project. Onboarding is a vital part of incorporating new employees into the organization. It helps employees familiarize themselves with their new work environment, responsibilities, colleagues, and the relationships between them. However, limited resources in terms of budget and time make it a challenging task.

Project-oriented work, remote workplaces, inaccessible areas of operation, and no confirmed duration of employment are some of the challenges that affect the recruitment and retention of competent staff. Kim and Lee (2007) noted that pay and opportunity for career advancement are effective strategies to retain non-profit employees in the short run, but mission acts as an effective management tool in attracting and retaining nonprofit employees in the long run. From the above discussions, it is clear that non-profit employees are intrinsically motivated. They deserve extrinsic motivations.

Lack of human resource policies :

Human Resource policies provide employees with a sense of security; they feel respected and looked after. It also puts things in order for the organization, and tracking employees' growth, discipline, vacations, etc., becomes easy. It works in favour of employees and also the organization.

Some of the non-profit organizations don't even have model human resource policies to support employee management. This creates ambiguity about the organization in employees. According to DeVaro and Brookshire (2007), non-profit organizations were less likely to use good wage systems, the incentives to motivate workers, and promotions.

Lack of Social Security benefits :

The studies of SudhaVasan (2004); Siddiqui and Ahmad (2012) revealed NGOs as an employer perform worse than the state and market. SudhaVasan (2004) raised the questions of minimum wages, benefits such as insurance and health care, and safe and dignified working conditions, which are rarely raised in the non-profit sector since employees are conveniently classified as volunteers, project staff or part-timers, and their payment labelled an honorarium rather than a wage or salary. Ahmad (2002); Siddique (2009) delineated problems and reasons for the poor performance of NGO workers, namely insecure jobs, financial hardships, family dislocation, unhealthy and non-friendly environments, lack of women employees' safety etc. SudhaVasan(2004) highlighted that most non-profits ignore the oppressive working and livelihood conditions, better wages, equal wages, a safe environment for women workers, and maternity benefits for women, and so on. Any employee working in any type of organization looks for his social security.

Lack of provisions relating to employee incentives and benefits :

Most non-profit organizations depend on the funding of donors. They face limitations in offering competitive incentives and benefits to their employees, as it has high-cost implications on the organization's budget. Salaries and incentives provided to non-profit organizations employees are not competitive to the market standard; it impacts heavily on the staff morale and performance.

According to DeVaro and Brookshire(2007), non-profit organizations were less likely to use a good wages system, incentives to motivate workers, and promotions. The above arguments clear that financial incentives are not considered as an important tool in the work environment of NGOs; hence it is the duty of organizations to consider financial aspects as an important element. Thereby, the turnover problem can be reduced.

Lack of clarity in the Performance Reward system :

Alvurudo (1996) and Watts (2002) opined non-profit employees should be motivated like for-profit employees, by awarding financial rewards,by doing so, employees' perceptions towards financial inequality can be reduced. Hence, effective human resource management is significant to achieve the predetermined objectives of Non-profit organizations. Therefore, Non-profit organizations are accountable for implementing effective strategies relating to human resource development.

Many non-profit organizations fail to address or ignore to give rewards to best performer employees. Failure to give rewards to performing employees affects the performance of competent employees. According to Batti (2014), the criteria for allocation of benefits was not clear and was mostly associated with loyalty to management rather than performance. Lanfranchi and Narcy (2012) opined-governmental organizations workers are enthusiastically motivated by their profession and not by monetary rewards. Contrasting to the study result of Lanfranchi and Narcy (2012),Hafiza et al. (2011) argued that NGO employees are motivated by extrinsic rewards than intrinsic rewards. The studies of Schepers et al (2005); Tippet and Kluvers (2009) concluded that non-profit employees are motivated by both intrinsic (non-financial) and extrinsic (financial) rewards. Mutambara and Mutambara (2012)identified rewards, feedback, and recognition as supportive tools to motivate NGO employees.

Lack of Performance Management system :

The Performance Management system is a systematic approach to measuring the performance of employees. It is a process through which the organization aligns its mission, goals, and objectives with available resources. The Performance Management system does not exist in many non-profit organizations, which results in poor performance in terms of achievement of planned organizational goals and objectives.

According to Batti(2004), there are no tools or mechanisms to support staff appraisals and hence meant that it was not easy to track staff performance. It leads to employee frustration and demotivation, which affects not only employee performance but also the overall organization's performance.

Lack of Career development opportunities in non-profits :

Another challenge facing local NGO staff is the lack of career advancement opportunities. This includes ongoing work to create new employment opportunities and support the staff to develop within our organization to maintain morale.

Traditionally, organizations have equipped their employees through training and development to meet organizational needs. However, the scope and cost of training and development have increased with the reality that trained employees retire before they have made a significant contribution to the organization after training, and as a result, many organizations do not plan to do this.

Low Employee Morale :

Morale describes how employees feel about their job, coworkers, and work environment as a whole. Non-profit organizations that suffer from these Human Resource development challenges are faced with a variety of adverse effects. An important issue that goes hand in hand with low morale is low employee engagement. Less engaged teams are unproductive and unmotivated to go the extra mile.

Frontera (2007) found factors for low employee motivation and high turnover are low salary, job insecurity, employment opportunities elsewhere, lack of personal safety and security, lack of respect and appreciation, underemployment, lack of employment opportunities, etc.

Lack of leadership quality and capacity to manage a diverse workforce :

Many of the non-profit organizations face a leadership crisis. They fail to develop leadership qualities in the employees of organizations. Project-oriented organizations have a diverse workforce to work on projects. They need a versatile leader to manage the diversified staff. Many organization focuses on developing their technical skills and knowledge, but they ignore planning for the development of leadership or management structures. This creates more consequences of serious leadership gaps in the organization.

Inadequate training and development opportunities :

There are fewer opportunities for training provided by non-profits to their employees. It affects employee performance. The skill and knowledge of employees can be enhanced by giving training and development programs. Papadakis et al. (2012) opined education and training play an important role in increasing the employability of the workforce. Kamath (2011) found that on-governmental organizations as an employer fail to provide training programs to their employees. Supporting Papadakis et al (2012) words, Ramzan, Mukhtar, and Achakzai (2012) recommended non-governmental organizations to use innovative training techniques to enhance employee performance. Failure to provide appropriate training can lead to a wide range of desired outcomes in the non-profit organizations; hence effective employee training is essential. It is the responsibility of NGOs as an employer to take appropriate measures to motivate their employees. In order to get better results, employee motivation is significant. Walk, Handy, and Schinnenburg(2013) revealed that underestimation of the motivational aspect of non-profit employees leads to job dissatisfaction.

Recommendations :

Based on the human resource development challenges enumerated, non-profit organizations in the development sector should strategically focus on human resource development and replace traditional forms. Human resource development is important because it is an investment in people that will ultimately lead to a stronger and more effective workforce. Divya and Sreedhara (2014) suggested that the low pay and an absence of opportunities for career growth restrict the nonprofit organizations from retaining a talented workforce. Though non-profit employees are not motivated by financial incentives, their impact on motivation should not be underestimated. Based on the review of the literature, we explore that the reason behind the high turnover in non-profits is recruitment, onboarding, and retention of competent staff With Limited ResourceRs, Lack of human resource policies, Lack of Social Security benefits, Lack of provisions relating to employee incentives and benefits, Lack of clarity in Performance Reward system, Lack of Performance Management system, Lack of Career development opportunities in non-profits, Low Employee Morale, Lack of leadership quality and capacity to manage a diverse workforce, Inadequate training and development opportunities. SudhaVasan (2004) recommends that it is time to demand at least the same level of accountability, transparency, and fair practices from non-profit organizations that we demand of the much-tainted state and for-profit sector. Divya and Sreedhara (2014) suggested that non-profit organizations as an employer have implemented strategies relating to employee training, motivation, and compensation to get good performance and consequently reduce employee turnover problem.

There is a need for the development of relevant human resource policies to resolve the challenges of human resource development. Building good organizational culture should be the main focus of non-profits to promote a healthy environment in the organization. Most of the organizations depend on the funding, so they need proper financial planning. Financial planning decreases the salary and compensation burden of an organization. Non-profit organizations have to prepare for employee leadership development plan for the sustainable development of the organization.

Conclusion :

Providing social services to those who want them is possible only if the non-profit employees are satisfied with their workplace. Employee satisfaction in the working environment of an organization is, therefore, a fundamental requirement for providing social services to society. Employee motivation and other factors play an important role in retaining employees within an organization. Therefore, nonprofits must apply good human resource development practices to provide quality jobs to society and, as employers, care about the health and well-being of their employees. As non-profit organizations are more dependent on donor funding, there is a need for the sensitization of donors and government agencies. The support is required from the donors in building the capacity of non-profit organization employees.

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A Study on Role of Self-Help Groups in Women Empowerment with Special Reference to Kolhapur District

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Abstract : *The basic objective of self-help groups is to develop saving capacity among the poorest sections of society, which over time reduces dependence on financial institutions and develops self-reliance. Every poverty alleviation program launched by the government has failed to empower the rural masses. Women have good leadership qualities, and in social development, women have played very important, but they face the majority of the problems. So, the present researcher has to focus on studying and comparing the factors influencing the performance of different self-help groups in financial women Empowerment.*

Keywords : *Self Help Group, Women, Empowerment, and Kolhapur District.*

Introduction :

The basic objective of self-help groups is to develop saving capacity among the poorest sections of society, which over time reduces dependence on financial institutions and develops self-reliance. Every poverty alleviation program launched by the government has failed to empower the rural masses. Therefore, they are increasingly dependent on financial support. At this juncture, the government should realize that it will provide basic education to all women, men, and children, primary health, rural roads, safe drinking water, sanitation, and a strong public distribution system to the people, especially the marginalized sections. Then self-help groups alone will be sufficient to bring about overall economic empowerment.

There will be 12 to 20 economically backward women members from the same village. For equality and unity, the self-help group avoids caste and caste differences, and tensions. The responsibility of decision-making in family affairs rests in the hands of the female member after her participation. In self-help groups, they create awareness in aspects of family welfare and hygiene. These women teach their daughters and sons at least at the higher secondary level. They also work for gender equality and women's rights. Personal development, like leadership qualities and other activities among women, is promoted in this movement by these self-help groups. Women members of self-help groups have a habit of saving. These groups educated them so that they can avail loan facility and repay it properly. They also get loans from banks and grants from the government. They are able to sell the products they produce in the nearby market. Thus, they get an equal share in the existing output. Therefore, economic empowerment through self-help groups starts in a phased manner.

Definition of Empowerment :

1 According to the Cambridge English dictionary

Empowerment means "the process of gaining freedom and power to do what you want or to control what happens to you".

2 Williams et al.

- The idea of "empower" is at the root of the term empowerment. Power can be understood as operating in a number of different ways;
- Power to: This power relates to having decision-making authority, the power to solve problems, and can be creative and enabling,

-
- Power with: This power involves people organizing with a common purpose or common understanding to achieve collective goals.
 - This power refers to self-confidence, self-awareness, and assertiveness. It relates to how individuals can recognize, through analyzing their experience, how power operates in their lives and gain the confidence to act to influence and change this. (Kadam, et al, 2012)

Concept of Empowerment of Women :

Women's empowerment is changing both the internal and external qualities of a woman's life. Internal qualities are self-confidence and self-awareness and external qualities are education, health, participation in decision-making, family status and level of material security. The concept of empowerment was first introduced in 1985 at the International Conference on Women held in Nairobi. The conference concluded that empowerment means redistribution of power and control of resources in favor of women through positive interventions. (Ganesamurthy, 2008).

The Government of India started the new millennium by declaring the year 2001 as the "Year of Women Empowerment," focusing on the concept of "where women are equal partners as men". The most common explanation of "women's empowerment" is the ability to have complete control over one's actions. Over the past decades, there have been some basic changes in the status and role of women in our society. The policy approach shifted from the concept of "welfare" in the seventies to "development" in the eighties and now to "empowerment" in the nineties. This process has been accelerated by the increasing self-awareness of women's discrimination in many spheres of family and public life. They are also in a position to mobilize themselves on issues that may affect their overall position. (Islam, 2014, p. 94)

Research Problem of the Study :

Women have good leadership qualities, and in social development, women have played very important, but they face a majority of the problems. So, the present researcher has to focus on studying and comparing the factors influencing the performance of different SHGs in Financial Women Empowerment.

Objectives of the Study :

1. To study the revolving funds to self-help groups in Kolhapur District.
2. An analysis of Self-help groups provided credit through banks in Kolhapur District.
3. To study the credit extended to self-help groups through banks in Kolhapur District
4. To suggest measures for improvement if necessary.

Research Methodology :

Only secondary data has been collected from Books, Journals, Magazines, Publication of private organization, Publication of educational and research institute and District statistical office reports (2018 to 2022).

Limitation of the Study :

The major limitation of this research is that the present research is related to only Self-help groups in Kolhapur district and conclusion of this research may not be applicable to other area.

Data Analysis and Interpretation :

Table No. 1: Revolving funds to self-help groups in Kolhapur District

(Amount Rs. Lakh)

Sr. No.	Year	Rural Development Mechanism	Women Economic Development Corporation
1	2018	235.37	52.32
2	2019	217.14	99.60
3	2020	165.54	49.23
4	2021	152.4	13.10
5	2022	78.78	35.10
Total		849.23	249.35
Average		169.85	49.87
SD		61.53	31.82
CV		36.23	63.80
CAGR		-0.24	-0.09
Maximum		235.37	99.6
Minimum		78.78	13.1

Source: District statistical office reports 2018-2022.

This table no. 1 indicates the revolving funds to self-help groups in the Kolhapur district during the period 2018 to 2022. The average revolving funds to self-help groups in rural development mechanism during the period 2018 to 2022 was Rs. 169.85 lakh. It means that revolving funds to self-help groups in rural development mechanism is decreasing in Kolhapur district. The compound annual growth rate of revolving funds to self-help groups in rural development mechanism -0.24 percent respectively. The coefficient of variance of revolving funds to self-help groups in rural development mechanism was 36.23 percent correspondingly. The maximum revolving funds to self-help groups in rural development mechanism has been observed as 235.37 respectively. In the district, the minimum revolving funds to self-help groups in rural development mechanisms were 78.78, respectively, during the period 2018 to 2022.

The average revolving funds to self-help groups in women's economic development corporations during the period 2018 to 2022 was Rs. 49.87 lakhs. It means that revolving funds to self-help groups in women's economic development corporations are decreasing in the Kolhapur district. The compound annual growth rate of revolving funds to self-help groups in women economic development corporation -0.09 percent respectively. The coefficient of variance of revolving funds to self-help groups in women's economic development corporations was 63.80 percent, correspondingly. The maximum revolving funds to self-help groups in women's economic development corporations have been observed as 99.60, respectively. In the district, the minimum revolving funds to self-help groups in women's economic development corporations were 13.10, respectively during the period 2018 to 2022.

Table No. 2: Self-help groups provided credit through banks in Kolhapur District (Number of Groups)

Sr. No.	Year	Rural Development Mechanism	Women Economic Development Corporation
1	2018	8962	1816
2	2019	14527	1511
3	2020	4323	1646
4	2021	7402	1779
5	2022	8542	1806
Total		43756	8558
Average		8751.20	1711.60

SD	3703.96	131.24
CV	42.33	7.67
CAGR	-0.01	-0.001
Maximum	14527	1816
Minimum	4323	1511

Source: District statistical office reports 2018-2022.

In this table no. 2 shows that the self-help groups provided credit through banks in Kolhapur district during the period 2018 to 2022. The average number of self-help groups provided credit through banks in rural development mechanism during the period 2018 to 2022 was 8751.20 groups. It means that number of self-help groups provided credit through banks in rural development mechanism is fluctuating in Kolhapur district. The compound annual growth rate number of self-help groups provided credit through banks in rural development mechanism -0.01 percent respectively. The coefficient of variance number of self-help groups provided credit through banks in rural development mechanism was 42.33 percent correspondingly. The maximum number of self-help groups provided credit through banks in rural development mechanism has been observed as 14527 respectively. On the district the minimum number of self-help groups provided credit through banks in rural development mechanism were 4323 respectively during the period 2018 to 2022.

The average number of self-help groups provided credit through banks in women economic development corporation during the period 2018 to 2022 was 1711.60 groups. It means that the number of self-help groups provided credit through banks in women economic development corporation are fluctuating in Kolhapur district. The compound annual growth rate number of self-help groups provided credit through banks in women economic development corporation -0.001 percent respectively. The coefficient of variance number of self-help groups provided credit through banks in women economic development corporation was 7.67 percent correspondingly. The maximum number of self-help groups provided credit through banks in women economic development corporation has been observed as 1816 respectively. On the district the minimum number of self-help groups provided credit through banks in women economic development corporation were 1511 respectively during the period 2018 to 2022.

Table No. 3: Credit extended to self-help groups through banks in Kolhapur District

(Amount Rs. Lakh)

Sr. No.	Year	Rural Development Mechanism	Women Economic Development Corporation
1	2018	373421.00	1331.82
2	2019	17317.00	3122.15
3	2020	7017.82	3727.31
4	2021	10584.23	4644.46
5	2022	16318.22	5547.40
Total		424658.27	18373.1
Average		84931.65	3674.63
SD		161325.57	1600.36
CV		189.95	43.55
CAGR		-0.54	0.43
Maximum		373421	5547.4
Minimum		7017.82	1331.82

Source: District statistical office reports 2018-2022.

The table, no. 3 indicate that the credit was extended to self-help groups through banks in the Kolhapur district during the period 2018 to 2022. The average credit extended to self-help groups through banks in rural development mechanism during the period 2018 to 2022 was Rs. 84931.65 lakh. It means that credit extended to self-help groups through banks in rural development

mechanism is fluctuating in Kolhapur district. The compound annual growth rate of credit extended to self-help groups through banks in rural development mechanism -0.54 percent respectively. The coefficient of variance of credit extended to self-help groups through banks in rural development mechanism was 189.95 percent correspondingly. The maximum credit extended to self-help groups through banks in rural development mechanism has been observed as 373421 respectively. In the district, the minimum credit extended to self-help groups through banks in rural development mechanism were 7017.82 respectively during the period 2018 to 2022.

The average credit extended to self-help groups through banks in women's economic development corporation during the period 2018 to 2022 was Rs. 3674.63 lakh. It means that the credit extended to self-help groups through banks in women economic development corporation is increasing in Kolhapur district. The compound annual growth rate of credit extended to self-help groups through banks in women economic development corporation 0.43 percent respectively. The coefficient of variance of credit extended to self-help groups through banks in women economic development corporation was 43.55 percent correspondingly. The maximum credit extended to self-help groups through banks in women economic development corporation has been observed as 5547.40 respectively. On the district the minimum credit extended to self-help groups through banks in women economic development corporation were 1331.82 respectively during the period 2018 to 2022.

Conclusions :

After having an overall discussion on revolving funds to self-help groups, Self-help groups provided credit through banks, and Credit extended to self-help groups through banks analysis in the study region, the researcher is now in a position to draw appropriate conclusions about the study, which are classified as per the objectives of the study and it is presented as below.

1. The average revolving funds to self-help groups in rural development mechanism during the period 2018 to 2022 was Rs. 169.85 lakh. It means that revolving funds to self-help groups in rural development mechanisms is decreasing in the Kolhapur district. The compound annual growth rate of revolving funds to self-help groups in rural development mechanisms - 0.24 percent, respectively.
2. The average revolving funds to self-help groups in women's economic development corporation during the period 2018 to 2022 was Rs. 49.87 lakh. The compound annual growth rate of revolving funds to self-help groups in women economic development corporation -0.09 percent respectively. The coefficient of variance of revolving funds to self-help groups in women's economic development corporation was 63.80 percent correspondingly.
3. The compound annual growth rate number of self-help groups provided credit through banks in rural development mechanism -0.01 percent respectively. The coefficient of variance number of self-help groups provided credit through banks in rural development mechanism was 42.33 percent correspondingly.
4. The compound annual growth rate number of self-help groups provided credit through banks in women economic development corporation -0.001 percent respectively. The coefficient of variance number of self-help groups provided credit through banks in women economic development corporation was 7.67 percent correspondingly.
5. The average credit extended to self-help groups through banks in rural development mechanism during the period 2018 to 2022 was Rs. 84931.65 lakh. It means that credit extended to self-help groups through banks in rural development mechanism is fluctuating in Kolhapur district. The compound annual growth rate of credit extended to self-help groups through banks in rural development mechanism -0.54 percent respectively.
6. The average credit extended to self-help groups through banks in women economic development corporation during the period 2018 to 2022 was Rs. 3674.63 lakh. It means that the credit extended to self-help groups through banks in women economic development corporation are increasing in Kolhapur district. The compound annual growth rate of credit

extended to self-help groups through banks in women economic development corporation 0.43 percent respectively.

Suggestions :

1. SHGs are voluntarily formed, functionally democratic, with power solely vested in the hand of group members. To empower women economically self-help group should give ideas for starting businesses to develop their own businesses and improve their economic status for self-employment.
2. Self-help groups should focus on participating in the income group above 25000 and create awareness among the respondents for all Government schemes and use them for their development. It also suggested that SHGs should focus on group growth and active participation of respondents for economic empowerment.
3. It is suggested to the group that they should try to raise more amount of savings from the respondents. The group should focus on increasing the savings as the percentage is low as the savings rate is high.
4. Reason for loans: It has been suggested that personal loans and housing loans should be provided to the members of SHGs; the bank should inform the SHGs about the new scheme or facilitate the formalization of the scheme. Self-help groups and bank officials should take care of the utilization of the purpose of the loan and avoid sanctioning the loan for non-productive purposes. Members have to suffer due to a lack of financial support to expand their activities. Banks and others must be present for this.
5. Financial institutions of NGOs can help them get loans from the Government.

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Issues and Challenges of CSR for Social Development in India

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Abstract : *The concept of Corporate Social Responsibility and the role of companies in implementing this has gathered attention in recent times. Corporate Social Responsibility is more of contributing to the health and welfare of society while at the same time operating transparently and ethically. An added dimension in CSR implementation is to make employees aware of the company's efforts to give back to society at large and celebrate these efforts. The aim here is to help employees become more actively engaged with their work and do better overall. Employees have also been shown to be more engaged and perform better when they feel good about their company's CSR involvement.*

However, the role of companies in implementing CSR has been under the scanner for a while now. There are many media reports which keep circulating on corporate mismanagement of CSR funds and or fraudulent scams. This began with the companies in the oil, chemical and tobacco industries. As a result of media pressure, major disasters, and sometimes governmental regulation, these companies realized that propping up oppressive regimes, being implicated in human rights violations, polluting the environment, or misinforming and deliberately harming their customers, were practices that had to be reconsidered if they wanted to survive in society. Corporations thus have clearly started to take up the challenge to implement CSR more positively and in due earnest. In a country like India, companies such as Tata's and Birla's can pride themselves on more than a hundred years of responsible business practices, including far-reaching benevolent activities and community involvement.

In this paper, CSR practices followed by different companies have been studied, to analyse the issues and challenges that companies face today and how they are gearing up to face them. Through this article, the researcher wants to provide a general summary of the value propositions evident in the research on the business case for CSR. This article tries to analyse the study of CSR status in Kolhapur, Maharashtra India, and it further provides an insight into to what extent companies are following CSR activities. We would try to throw light on CSR of organizations thus helping in both economic and social interests. This article is purely based on secondary data and tries to focus on the issues and challenges faced by organizations with respect to CSR and makes an attempt to provide possible methodologies for better implementation of such activities.

Keywords : *CSR, compulsion of CSR, Social & Environmental developments, Economic growth*

Introduction :

CSR is a term describing a company's obligation to be accountable to all of its stakeholders in all its operations and activities. The Companies Act, 1956 is replaced with The Companies Act, 2013 and 'Corporate Social Responsibilities (CSR) has been made mandatory for a particular class of companies. There has to be an all-inclusive growth of society with the growth of the companies (Scholtens et al., 2006). Perhaps keeping this in mind, Indian lawmakers brought this law.

Studies on CSR are conducted, both in business and academic research, in different fields like Social Work, Sociology, Psychology, Human Resource Management, and Organization. Corporate social responsibility is not just donating money, it is essentially a voluntary activity that serves as a bridge between the corporation and the society as a whole(Choudhary, et al, 2011).

It is about an organisation taking responsibility for the impacts of its decisions and activities on all aspects of society, the community and the environment. Corporate Social Responsibility is more about contributing to the health and welfare of society, operating transparently and ethically(Das, et al, 2012). Most companies have instituted a specialized CSR team that formulates the policies,

strategies, goals and budgets. Employees have also been shown to be more engaged and perform better when they feel good about their company's CSR involvement. By making employees aware of the company's efforts to give back and celebrating these efforts, you can help employees become more actively engaged in their work and do better work overall (Godfrey, et al, 2007).

CSR makes exceptional business sense especially when one considers the consequences that social and environmental responsibility can have for the business. For example, businesses exist in a reciprocal relationship with their external environments where their dealings with the larger environment determine to a significant extent how successful they are in their quest for profits (Khan, et al, 2013). The Resource Based View identifies the strength of this environmental relationship with the business and how the exchange of inputs and outputs with the environment determines the quality of business processes. It can therefore be implied that socially responsible business practices can only be viewed as a positive asset and that recent arguments that have been made against investing in CSR do not hold water (Rose et.al, 2007).

Objectives:

The main objectives of this study are to

- To study the CSR status in Kolhapur.
- To study the policies governing CSR in India.
- To study the issues & challenges faced by CSR in India with CSR in Kolhapur as the basis.
- To make suggestions for better implementing CSR initiatives in society.

Research Methodology:

The present research article is an attempt of exploratory research, based on the secondary data sourced from journals, magazines, articles and media reports. Based on the objectives of the study, the research design employed for the study is descriptive research design. Keeping in view the set objectives, this research design was designed to have greater accuracy and in depth analysis of the research study. Secondary data has been comprehensively used for the study. Information from different news articles, books and web sources were used which are recorded and enumerated.

Review of Literature :

The fundamental objective of the study is to find roadblocks and handicaps in implementing CSR in its true sense. There are many obstacles that loom up while considering successful CSR strategies in making a business case for CSR; intricacy in integrating CSR with organizational values and practices, the lack of organizational buy-in and adherence to the values of CSR being the top ones in them. Another factor that hinders CSR is the lack of time and financial resources to follow CSR practices. When an organization finds it difficult to make a business case for CSR or its association with core organizational operations, it will be averse to commit and allocate resources or time to such practices. Moreover, these obstacles also point to another set of critical findings in the report. Respondents view CSR more so as a means to manage regulatory impacts, reduce risk, and respond to stakeholders' concerns, and to a lesser extent as a strategic source of competitive advantage.

Current Status of CSR in India :

The corporate belief is that a company needs to be responsible for its actions; socially, ethically, and environmentally. CSR has become a need of growing businesses. Big corporates like Reliance Industries, Tata Group, Aditya Birla Group, The Coca Cola Company, and Indian Oil Corporation to name a few, are involved in serving the community. These corporates are committed to fulfilling their responsibilities towards society. Many other organizations have been doing their part for society through donations and charity. However, today, CSR in India has gone beyond mere charity and donations and is approached in a more organized fashion. It has become an integral part of the corporate strategy. Companies have CSR teams that devise specific policies, strategies and goals for their CSR programs and set aside budgets to support them. These programs, in many cases, are based on a clearly defined social philosophy or are closely aligned

with the company's business expertise. Employees become the backbone of these initiatives and volunteer their time and contribute their skills to implement them. CSR Programs could range from the overall development of a community to supporting specific causes like education, environment, healthcare etc.

Some of the best practices followed by Indian Companies related to CSR are as follows: ONGC and Indian Oil Corporation - ONGC and Indian Oil Corporation have been spending 0.75-1 % of their net profits on CSR activities. In 2007-08 Rs. 246.70 crores were spent by oil PSUs on CSR activities. ONGC CSR projects focus on higher education, granting of scholarships and aid to deserving young pupils of less privileged sections of society, facilities for constructing schools etc. SAIL - SAIL has taken successful actions in environment conservation, health and medical care, education, women upliftment providing drinking water. BHEL & Indian Airlines have been acclaimed for disaster management efforts. BHEL has also adopted 56 villages having nearly 80,000 inhabitants. *APJRB Volume 2, Issue 1 (JANUARY 2011) ISSN 2229-4104* .

Issues and Challenges of CSR :

There are a number of challenges in the implementation of CSR. Some are Generic and some have geographical and demographical orientations. Given below are some that have been taken up as part of the study.

Lack of Awareness :

There is a lack of interest of the general public in participating and contributing to CSR activities of companies. This is because of the fact that there exists little or no knowledge about CSR. The situation is further aggravated by a lack of communication between the companies involved in CSR and the general public at the grassroots. CSR- Key Issues and Challenges in India

Need To Build Local Capacities :

There is a need for capacity building of the local nongovernmental organizations as there is a serious dearth of trained and efficient organisations that can effectively contribute to the ongoing CSR activities initiated by companies. This seriously compromises the scaling up of CSR initiatives and subsequently limits the scope of such activities.

Issues of Transparency :

Lack of transparency is one of the key challenges for the corporate as there exists a lack of transparency on the part of small companies as they do not make adequate efforts to disclose information on their programmes, audit issues, impact assessment and utilization of funds. This negatively impacts the process of trust building among the companies which is a key to the success of any CSR initiative.

Non-Availability of Well Organized Non-Governmental Organizations :

There is no availability of well-organized non-governmental organizations in remote and rural areas that can assess and identify the real needs of the community and work along with companies to ensure the successful implementation of CSR activities.

Visibility Factor :

The role of media in highlighting good cases of successful CSR initiatives is welcomed as it spreads good stories and sensitizes the population about various ongoing CSR initiatives of companies. This apparent influence of gaining visibility and branding exercise often leads many non-governmental organizations to involve themselves in event-based programmes; in the process, they often miss out on meaningful grassroots interventions.

Narrow Perception Towards CSR Initiatives :

Non-governmental organizations and Government agencies usually possess a narrow outlook towards the CSR initiatives of companies, often defining CSR initiatives more as donor-driven. As

a result, corporates find it hard to decide whether they should participate in such activities at all in the medium and long run.

Non-Availability of Clear CSR Guidelines :

There are no clear-cut statutory guidelines or policy directives to give a definitive direction to the CSR initiatives of companies. The scale of CSR initiatives of companies should depend upon their business size and profile. In other words, the bigger the company, the larger its CSR programme.

Lack of Consensus on Implementing CSR Issues :

There is a lack of consensus amongst implementing agencies regarding CSR projects. This lack of consensus often results in duplication of activities by corporate houses in areas of their intervention. This results in a competitive spirit between implementing agencies rather than building collaborative synergies.

Best Practices– An Overview of Companies Studied :

Discussed below is a brief of some of the Best practices followed by the selected companies in and around Kolhapur. The Selection of these companies was based on the company size, accessibility and initiatives they have been working on in the CSR domain.

Sanjay Ghodawat Group :

Incepted in 1992, Sanjay Ghodawat Group has an endearing and glorious legacy of over 25 years of business excellence. Agriculture, Aviation, Consumer Goods, Energy, Floriculture, Food Processing, Mining, Realty, Software, Textiles, and Education are some of our key business domains. This group is driven by one common purpose to excel in every endeavour possible to meet customers' expectations through a wide range of superior and qualitative products and services.

Believing firmly in giving back to society what is earned from it, the philanthropist Sanjay Ghodawat has been donating generously to diverse social causes both personally and through charitable trusts. Sou. Sushila Danchand Ghodawat Charitable Trust provides social, medical and educational help to those who most need it. The 'no profit, no loss' Acharya Shri Tulsi Blood Bank has been rated among the best three blood banks in India due to the sheer quality of equipment, infrastructure, and care.

The Khivraj Ghodawat Charitable Trust runs a self-funded 'Shree Gangabai Khivraj Ghodawat Kanya Maha Vidyalaya' in Taluka Shirol. The school has more than 4000 literate girls from 52 villages to its credit since 1995. It is also setting up an Intensive Care Unit (ICU) at Jaysingpur by donating medical supplies. Sanjay Ghodawat's philanthropic leanings have rubbed off on the entire organization. With an unwavering commitment to society, the Group has to its credit some ground-breaking initiatives including the donation of operation theatres, community halls, school buildings for the blind, etc.

The Group's reforestation drive resulted in the planting of three hundred thousand trees in a single year in 2010 and this number continues to grow every year.

- Contribution to Society
- Healthcare Initiatives
- Education
- Preserving Nature
- Disaster Response

Kirloskar Oil Engines Ltd :

KOEL is the flagship company of the \$ 2.1 billion Kirloskar Group. The market leader in fluid management, KOEL provides complete fluid management solutions for large infrastructure projects in the areas of water supply, power plants, irrigation, oil & gas and marine & defense.

KOEL engineer and manufacture industrial, agriculture & domestic pumps, valves and hydro turbines.

OEL's CSR Initiatives :

In accordance with the company's tagline "Enriching Lives", KOEL has been highly instrumental in upgrading the living standards of people residing around the KOEL plant in Kirloskarwadi. The major interventions are in the following sectors:

Sector I: Health :

- 1) Hospital on KOEL Premises
- 2) Conduct Mobile Antenatal Check-up camp
- 3) Conduct Health Check-up camps in schools
- 4) Conduct Garbhsanskar Camp in the target community
- 5) Conduct AsIDS Awareness program for KOEL workers
- 6) Conduct AIDS Awareness program for the Community
- 7) Conduct De-addiction counseling for workers and Volunteers
- 8) Adolescent Health Education
- 9) Conduct Blood Donation Camps
- 10) Health Outreach Activities

Sector II: Environment Promotion :

- 1) Tree Plantation in villages
- 2) Conduct an environment awareness program

Sector III: Education :

- 1) KOEL runs Schools and College for the target community
- 2) Conduct Hand Wash Program in Schools
- 3) Conduct Summer Camp for Children

Sector IV: Youth Empowerment :

- 1) Conduct Career Guidance Workshop for Youths
- 2) Life Style Management Program

Indo-Count Industries Ltd :

Indocount company believes in involving various stakeholders, in all activities, starting from designing CSR activities to delivering the same. The philosophy behind the thought of stakeholder inclusion is to make CSR a sustainable and impactful practice rather than an event. A series of discussions took place to arrive at the activities that really benefit the community.

The adopted CSR Policy outlines various areas like education, healthcare, water and sanitation, environment and women empowerment for undertaking CSR activities. The Company implements CSR initiatives through 'Indo Count Foundation'. And has also tied up with other trusts for implementing CSR Activities. During the year under review, Company / Indo Count Foundation has contributed to Prime Minister Relief Fund and carried out CSR activities in the areas of Education and Healthcare.

Indocount's key philosophy of all CSR initiatives is guided by their belief "EverySmile Counts..." Companies CSR Projects focus on a participatory and collaborative approach with the community. It is observed that CSR projects of the company is focused on areas of education, Women Empowerment, Healthcare, Water and Sanitation, and Flood relief and other disaster management activities and are generally undertaken in and around Kolhapur:

Education is the first focus area, the foundation is working towards the following activities :

e-Learning In this new era, e-learning concept is growing and is being adopted at a very fast pace by schools and colleges. By using state-of-the-art e-Learning technology and programs, the foundation tried to transform the classroom into a modern teaching facility where students can explore beyond their wildest dreams. There is a renewed sense of purpose among teachers, and students are visibly more motivated and enthusiastic about their classes. The Indo Count Foundation e-Learning initiatives were recognized by both the Kolhapur District Council and Kagal Municipal Corporation.

Clean Drinking Water

Clean Drinking Water is a basic need of humans. So, the foundation has taken the initiative on this most basic of needs, each of the schools in the program was fitted with a new stainless steel water tank with water purifying system to provide students with hygienic drinking water.

School Bags :

Indocount supplies school bags and other items required for education to needy school students. In a region where even the simplest school supplies and commodities are not always within the economic reach of many parents and families, Indocount distributed thousands of much-needed school bags to each and every student. This was highly appreciated by the lots of families in the area and created a renewed sense of pride and belonging among students.

Women Empowerment :

Women empowerment being the Second focus area, the foundation is working towards the following activities:

Provided training in stitching skills to women, thereby helping them to be employed in Industry. Helped women to become independent and improve their Standard of Living. One of the key factors for women's empowerment is employable skill development. It leads to economic independence and increased personal freedom. With the help and support of ZillaParishad, the foundation has started an employable sewing training facility for women. The Indo Count Foundation is targeting to train more than 700 candidates in a year. The objectives of the Foundation are

- Quality in skill training and delivery process
- Good quality training infrastructure
- Innovative use of technology in the skills training delivery process
- Creation of work area simulation infrastructure in the building infrastructure
- Independent assessment of training by assessing body of repute

Menon Bearings Ltd :

Menon Bearings functions as Solution Development Partner to leading global auto brands due to its system-wide experience. Their design, development, and validation capabilities coupled with their comprehensive manufacturing lines, and their varied product portfolio makes them a single-source / ship-to-use vendor to various global Original Equipment Manufacturers.

CSR Initiative of Menon Bearings Ltd :

Pursuant to the provisions of Section 135 read with Companies (Corporate Social Responsibility) Rules, 2014, the Company has constituted CSR Committee and has framed a policy on Corporate Social Responsibility. As part of its initiatives under CSR, the Company has identified various projects. These projects are in accordance with Schedule VII of the Companies Act, 2013

Following are details of CSR activities that takes place during the last year:

- Contribution SiddhagiriGurukul / Foundation Mumbai for Kolhapur Flood Relief – For Eradicating hunger, poverty and malnutrition

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- Contribution to Pudhari Flood Relief Fund – For eradicating hunger, poverty and malnutrition
 - Financial Assistance to promote rural sports – For training to promote rural sports of wrestling
 - Contribution to rural sports – For promoting rural sports & nationally aximizati sports
 - Financial Assistance to Latwade School for special education among the Children and the safety of children at school place. – Promotion of Education and safety of Children
 - Contribution to State level Kolhapur Shahu Marathon organized by “Shri Binkhambi Ganesh MitraMandal – Promotion of Health care including preventive healthcare
 - Contribution to Shri Prince Shivaji Maratha Boarding House for New Building Construction for Ladies Hostel – promoting gender equality and empowering women, setting up hostels for women
 - Contribution to GrampanchayatKasbaSangav for help to Corona Affected People – Promotion of Health care including preventive healthcare
 - Financial Assistance for Enhancing Vocational Skills of traditional art and handicrafts – Enhancing Vocational skills
 - Construction of Auditorium at GokulShirgaon MIDC, Kolhapur – Promoting education, including special education and employment enhancing vocational skills
 - Administrative Expenditure for the administration of CSR activities – Administrative Expenditure

Raymond Industries :

Raymond is a diversified group with majority business interests in Textile & Apparel sectors as well as a presence across diverse segments such as FMCG, Realty, Engineering and Prophylactics in national and international markets. Having enjoyed the patronage of over a billion consumers, Raymond is reckoned for delivering world-class quality products to its consumers for the past nine decades.

CSR initiatives of the Raymond :

As a part of its initiative under the “Corporate Social Responsibility” CSR drive, the Company has undertaken projects in the areas of environmental sustainability, preventive health care and women empowerment. These projects are in accordance with Schedule VII of the Act and the Company’s CSR policy. The focus areas of the Company for utilizing the earmarked CSR Funds are as under:

- Eradicating hunger, poverty, and malnutrition;
- Promotion of healthcare including preventive healthcare;
- Promotion of education and employment enhancing vocational skills;
- Ensuring environmental sustainability and animal welfare including measures for reducing inequalities faced by socially & economically backward groups; and
- Other areas approved by the CSR Committee within the ambit of CSR Rules as amended from time to time.

The Company also performed its social duties by contributing to COVID-19 prevention initiatives. Additionally, Silver Spark Apparel Limited directed its production capabilities towards the manufacture of protective masks while Raymond Consumer Care Private Limited launched its sanitizer range in the market to mitigate the shortage of this essential item. The Company also made a contribution towards the set-up of a 1000-bed COVID-19 hospital set up at Thane, Maharashtra through its CSR outlay which was inaugurated by the Hon’ble Chief Minister of the State of Maharashtra. This hospital is expected to assist the Government in combating this deadly and cureless disease. The Report on CSR activities as required under the Companies (CSR Policy) Rules.

Conclusion :

As society is getting more concerned about the working policies of the companies. Society's expectations are increasing towards the social development by the companies. So, it has become

necessary for companies to practice social responsibilities to enhance their image in society. Even though companies are taking serious efforts for sustained development, some critics still are questioning the concept of CSR. There are people who claim that Corporate Social Responsibility underlies some ulterior motives while others consider it a myth. The reality is that CSR is not a tactic for brand building; however, it creates an internal brand among its employees. Indulging in activities that help society in one way or the other only adds to the goodwill of a company. Corporate Social Responsibility is the duty of everyone i.e. business corporations, governments, and individuals because of the reasons: the income is earned only from society and therefore it should be given back; thus, wealth is meant for use by self and the public; the basic motive behind all types of business is to quench the hunger of the mankind as a whole; the fundamental objective of all business

Suggestions :

- Data shows that almost every company has opted for Environment related initiatives. It is suggested that meaningful and combined effort be placed in achieving this initiative. It is proposed that instead of each company having its own smaller initiative, a consolidated approach in a given geography be the driver to bring better results
- It is recommended that appropriate steps be taken to address the issue of building effective bridges amongst all important stakeholders.
- Companies are now expected to perform well even in nonfinancial areas such as human rights, business ethics, environmental policies, corporate contributions, corporate governance, workplace issues and community development. It is therefore imperative that companies assign more focus on CSR activities rather than take this up as a To Do list.
- It is proposed that a dedicated resource/s or Department be created to handle all CSR initiatives. It must be noted that this team be fully aware of the CSR programs and should have deeper insights into its functioning. It therefore becomes a mandate on the Management to ensure this is achieved.
- The Frequency of the activities needs to be increased. Additional focus is to be directed to environmental care and rural sports.
- Societal & Environmental (HSE) adoption is key today. It is estimated that 98 percent of businesses that used sustainability standards reported sales and marketing benefits. Therefore, greater focus must be aligned with it.
- Most Respondent companies adopt a self-assessment methodology. While this is internally ok it is suggested and proposed that a joint committee of Govt, NGO's and Corporate teams be made to have a well-defined and focused approach to assessment. This would go a long way to channelize the efforts of the corporates.
- Data showed that companies would be well off by creating more awareness of CSR among their beneficiaries if they have to increase their revenue streams by identifying themselves clearly from the set of companies that do not do CSR.
- Study data also shows that awareness of CSR has a direct correlation to the effect it has on positively impacting the opinions of beneficiaries and therefore companies should aim to put in more effort on this aspect.
- It would be a great idea if a committee is formed in the general geography of the Organizations, where representatives of the beneficiaries are also involved.
- It would be prudent that the Gram Panchayats and Social Workers in the area educate the recipients of CSR, so that they become more involved in the process. This would also help them to align the companies' strategies to their needs.

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Health Awareness among Women and its Relation With Covid-19 Effectiveness in Urban Slum Families of Kolhapur

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Abstract : *The quality of life in any urban centre depends upon the availability of and accessibility to quality social infrastructure. Urban slums are considered as one vulnerable to various disasters. The structure of the slums, amenities provision and utilization the same become the reason for vulnerability. As people attempt to meet their immediate need for shelter, many low-income urban dwellers end up with poorly constructed shelters in locations that are unsafe and highly vulnerable to disasters and other types of environmental degradation. High population density, lack of proper toilets and close proximity of homes allow diseases to spread quickly. This creates a real risk for large populations who are often unable to access adequate health facilities to get treatment in time.*

The key issue related to slum-dwellers is that they do not possess tenure of the land on which they stay. Also, the resettlement and rehabilitation of the slums is difficult due to the shortage of land with KMC. Health infrastructure in Kolhapur includes poor state of equipment and property in municipal hospitals and dispensaries, inadequate and poorly trained staff and inequitable distribution of medical services. The slum areas of the cities are likely to be more vulnerable to COVID-19 due to poor infrastructure, unavailability of medical equipment and high population density. For example, Asia's largest slum Dharavi in Mumbai recorded more than 1400 COVID-19 cases in May 2020. This clearly indicates how much vulnerable the slum areas are, to COVID-19 in India. It was mentioned earlier that cities across the world are more vulnerable to COVID-19.

Keywords : *Slum dwellers, Covid-19, health.*

Introduction :

According to National Sample Survey Organization, areas notified as slums by the respective municipalities, corporations, local bodies, or development authorities were treated as “notified slums”, they tend to receive a higher level of services and those unrecognized by the local bodies were considered as “non-notified slums. Kolhapur is a well-known ancient and heritage city in the state. From centuries immemorial, Kolhapur has been known for its prosperity, tradition, arts and culture. Slum Population: There are 54 slums in Kolhapur, of which 44 are declared and 10 are undeclared. According to the 2011 Census, the slum population is 94,650, which is about 15% of the total population.

The quality of life in any urban centre depends upon the availability of and accessibility to quality social infrastructure. Urban slums are considered as one of the vulnerable to various disasters. The structure of the slums, amenities provision and utilization the same become the reason for vulnerability. As people attempt to meet their immediate need for shelter, many low-income urban dwellers end up with poorly constructed shelters in locations that are unsafe and highly vulnerable to disasters and other types of environmental degradation. High population density, lack of proper toilets and close proximity of homes allow diseases to spread quickly. This creates a real risk for large populations who are often unable to access adequate health facilities to get treatment in time.

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distribution of medical services. The slum areas of the cities are likely to be more vulnerable to COVID-19 due to poor infrastructure, unavailability of medical equipment and high population density. For example, Asia's largest slum Dharavi in Mumbai recorded more than 1400 COVID-19 cases in May 2020. This clearly indicates how much vulnerable the slum areas are, to COVID-19 in India. It was mentioned earlier that cities across the world are more vulnerable to COVID-19.

Worldwide infection: 642 million people infected, No of deaths: 6.6 million, most severely affected countries include the US, India, and Brazil.

Review of Literature :

Awareness and perception of Covid_19 among the general population: A middle eastern survey: this paper gives the researcher a view of the degree of awareness portrayed by the studied population in mildly adequate, yet lacking in specific dimensions such as transmission and treatment awareness. It seems that both populations exhibit similar trends of attitudes and perceptions towards the covid 19 pandemic, hence there are analogues cultures. Concerned authorities should allocate time and resources to raising awareness through official platforms and extensive social media campaigns. But in our research researcher wanted to know not only awareness but also perception, and practices about Covid 19 in specifically women living in slums. Also wanted to study the impact of covid 19 on them. And research plans to fill preparing a questionnaire for the collection of primary data with respondents who are women in the slum itself not by using the means of social media platforms used in this research.

- Women's Knowledge, attitude and perceptions toward Covid 19 in lower middle- income countries: A Representative cross sectionals study in Bangladesh: This research paper gives a view to the researcher that women also take covid 19 as a superstition. On the other hand, younger and more educated women had a better knowledge level compared to the older and lower-level educated participants. More efforts are required to educate women of older age and lower socio-economic status. Also, the researcher studied that research is also based on socio-demographic status and differentiates from one another. But researcher wants to study not only women's perception and awareness but also to study its impact on them as well as their families. In the end, a researcher wants to suggest appropriate intervention strategies to improve health practices, sanitation and hygiene, especially in slums.
- The impact of Covid-19 on women: This research paper gives an idea about we need effective solutions to ensure that women's health does not remain on the fringes in the post covid 19. Given the evidence, we must apply an international gender lens while designing programmes and prepare ourselves with adequate knowledge, gender-disaggregated data and evidence to address the socioeconomic impact of covid-19. Also, there is a need to step up investments in family planning, also extra efforts are needed to revamp and strengthen public health, especially primary health care and increase the health budget. There is an urgent need for redistribution of health workforce, capacity building of frontline workers and strengthening paramedics and greater investment in medical research. But along with this researcher also wanted to know the severity of the pandemic in urban as well as awareness about it in women. Also, its association and impact on them as well as their family. At the last researcher wanted to know the practices and measures taken by women and their family in urban slums during Covid-19.
- Possible Actions – Women's Right and Covid _19: women and girls are less likely to have access to health, access to information and are more vulnerable to sexual violence. Furthermore redirecting of resources to emergency responses and restrictions on humanitarian movement can result in a lack of qualified female aid workers in camps, putting women at further risk. This paper also gives suggestions for taking possible actions such as including gender perspectives, expanding job measures, delicate support to mental health, protection to midwives and many more. But here researcher also wanted to know the impact of covid 19 on slum women as well as wanted to check their awareness about it. Along with this with the help

of primary and secondary data wanted to study perception, association, health practices, severity, and possible measures taken by slum women about covid 19.

- Slum health: Diseases of neglected populations: The paper is focusing on the negligence of urban slum dwellers in the context of healthy life. The study is high lightening on the world's slum population is facing discrimination towards primary health care and related services. There is the prevalence of communicable diseases in the urban slum due to the structure and congestion of the area. To tackle these issues there is need of an inclusive policy that focuses on the inclusion of slum dwellers in the mainstream of health services.

Statement of the study: A study on health awareness among women and its relation with covid_19 effectiveness in urban slum families of Kolhapur

Significance of the Study :

- People's residing in the urban slums faces many problems like improper sanitation, social, economic & health problems.
- In slums women have different type of work as well as domestic work and they neglect towards the health needs due to this they are anemic don't have required health status.
- Due to the status women were found to have been exposed to infection by virus in both slums and non-slum areas.

Objectives of the Research Study :

- To study the association between awareness among women and its impact on the health condition of the family.
- To study the practices and measures taken by women and family members of Urban Slums during Covid_19.
- To analyze the perception of urban women towards health practices, sanitation and hygiene.
- To identify the severity of such Pandemic in Urban Slums and awareness about the same.

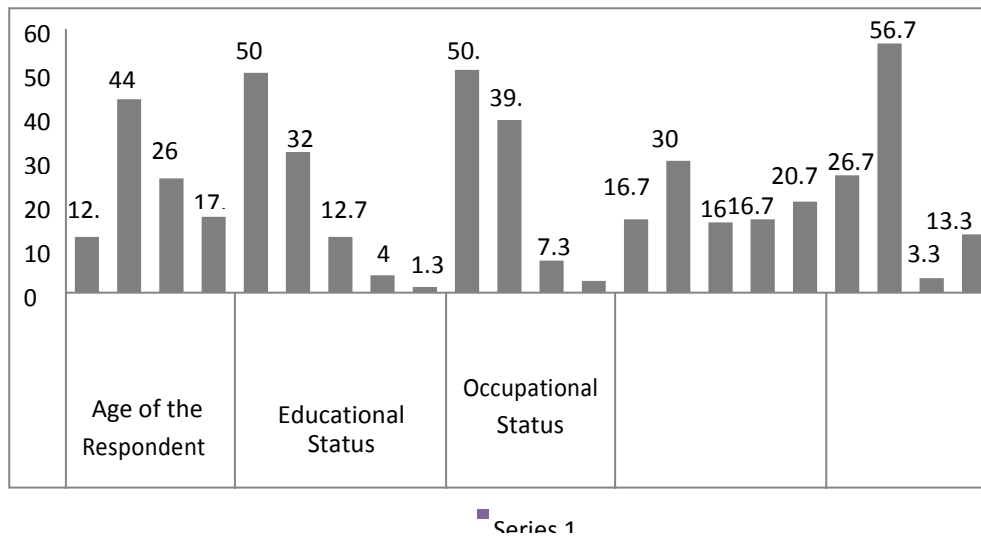
To suggest possible interventions to improve health practices, sanitation, and hygiene.

Research Methodology :

Table No. 1

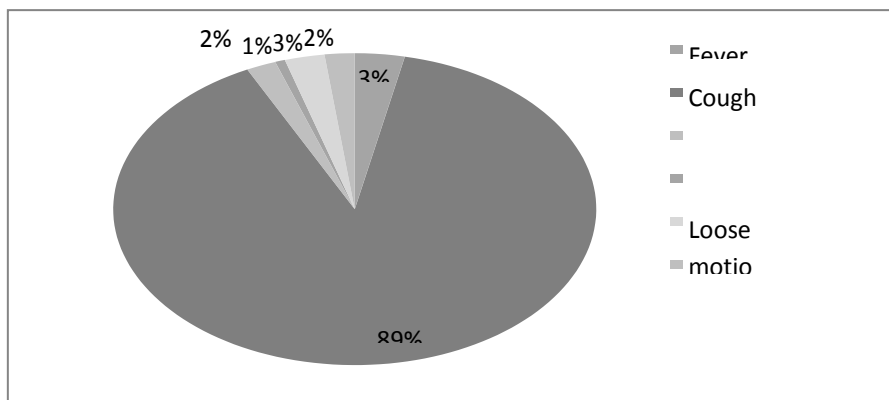
Title	Procedure
Study Area:	Selected slums of Kolhapur City (four slums)
Element of the study:	Slum dwellers and their families
Research Design:	Exploratory study
Sampling Method:	By using simple random sampling method. (150 households)
Tools and Instruments	Individual interview using structured interview schedule
Universe of the Study:	Four slums of the Kolhapur city.
Data Collection Methods:	Primary: Interview Schedule, Observation, Discussion. Secondary: books, journals, periodicals, newspapers, etc.
Data Analysis and Interpretation:	With the help of SPSS (Statistical package for social sciences) and the computerized data was analyzed.
Limitations of the study:	The study is confined to the areas selected in selected Kolhapur city slums. Dueto Covid_19 pandemic restrictions its not possible to Reach out to the sample.

Major findings:



Graph No.1 Basic Information of respondents

- The majority of the respondents belonged to the age group of 26-35 which is 44% followed by the age group of 36-46 and above 47 years, 12% of respondents belong to the age group below 25 years. A part from the age one more thing observed was that all the respondents were married.
- 32% of respondents are educated up to secondary level followed by higher primary, approximately 13% were higher secondary and 4% graduate and the remaining 28% are still illiterate. It is observed that still 50% of women are either illiterate or only educated up to the primary level.
- Half of the respondents are housewives and 39.3% of respondents worked as labour, 7.3% of respondents are working at somewhere as a job and the remaining 2.7% doing other work. Almost 50% of the respondents are housewives who are generally busy in domestic work and child-rearing practices.
- It is seen that 46% of respondents have an income in the range of 1000 to 1500 rs. per month. It means that the majority of the respondents belong to the lower-income group.
- It is observed that in the slums majority of the respondents i.e. 56.7% belong from Scheduled Caste Category. The reflection of the social stratification is seen in this way.



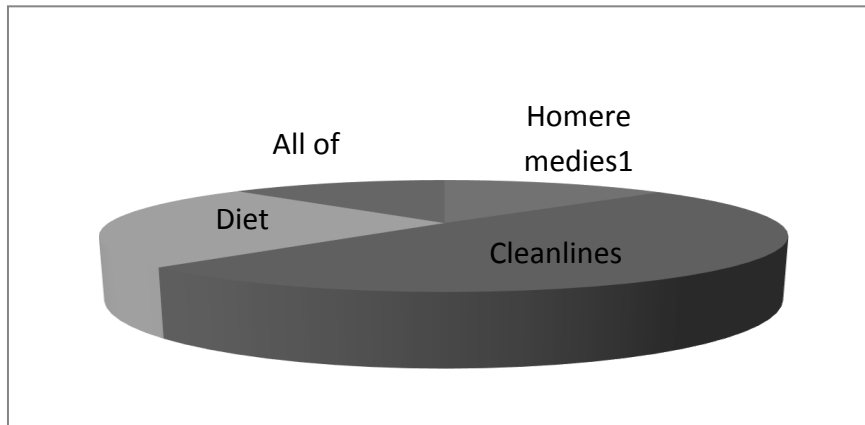
Graph 2 : Disease Severity in the community

The general disease severity occurred in the family contains cough with highest number i.e. 89%, fever and skin disease with 3% and arthritis 2% and loose motion with 1%. Due to water and air pollution the severity of cough is in the highest percentage.

Table No.2 : Covid-19 effect on respondents

Covid_19 contamination		Change in Daily Schedule due to Pandemic		Impact of Covid_19 Pandemic on Personal health		Family member migration during Covid_19 Pandemic	
Food	15.3%	Yes	35.3%	Yes	38%	Yes	2%
Air	84.7%	No	64.7%	No	62%	No	98%

- 15.3% of respondents stated Covid_19 contamination has been spreading through food and 84.7% of respondents stated Covid_19 contamination has been spreading through air.
- 35.3% of respondents stated their daily schedule has changed and 64.7% of respondents stated their daily schedule has not changed.
- Impact of Covid_19 on the health of positive patients 13(8.6%) respondents' health is declined due to Covid_19 contamination.
- The perception of respondents about the precautionary measures taken for the Covid_19 contamination contains 18% of respondents says that washing their hands frequently might be helpful, 15% of respondents say, social distancing is useful, 17% of respondents say the use of sanitizer is helpful, 18% says wearing a mask, 13% says avoiding crowd and 17% says all of these measures are necessary to prohibit the Covid_19 contamination.



Graph No.3 : Precautions for Covid-19 by respondents

- Information about the being women if proper care has been taken then there is a less probability of contamination of Covid_19. Majority of respondent's i.e.131 (87.3%) feel that, being an women if she has taken proper care then there is less probability of Covid_19 contamination, 13 respondents were neutral and 6(4%) says no.

Table No. 3 : Awareness measures from government

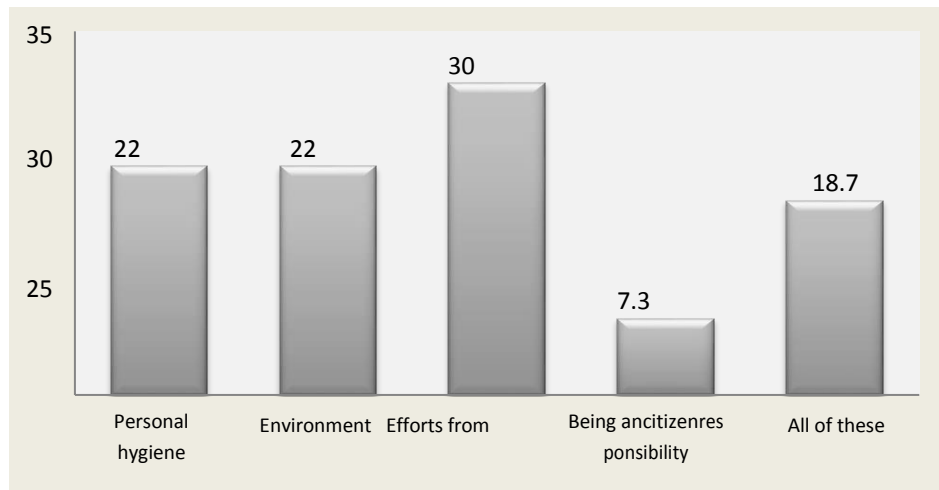
Awareness measures from government	Frequency	Percent
Implementation of health schemes	39	26.0
Health check-ups	72	48.0
Health workers home visit and guidance	32	21.3
Information through different media	7	4.7
Total	150	100.0

The above table explains the information about the respondent's expectations about the awareness measures from the government. 39(26%) respondents expected that there is a need of an awareness campaign regarding the implementation of health schemes, 72(48%) respondents wants health check-ups awareness, 32(21%) respondents wants health workers home visits and guidance and the remaining 7(4.7%) respondents want information through different media.

Table No.4 : Responsibility of unhygienic condition of area

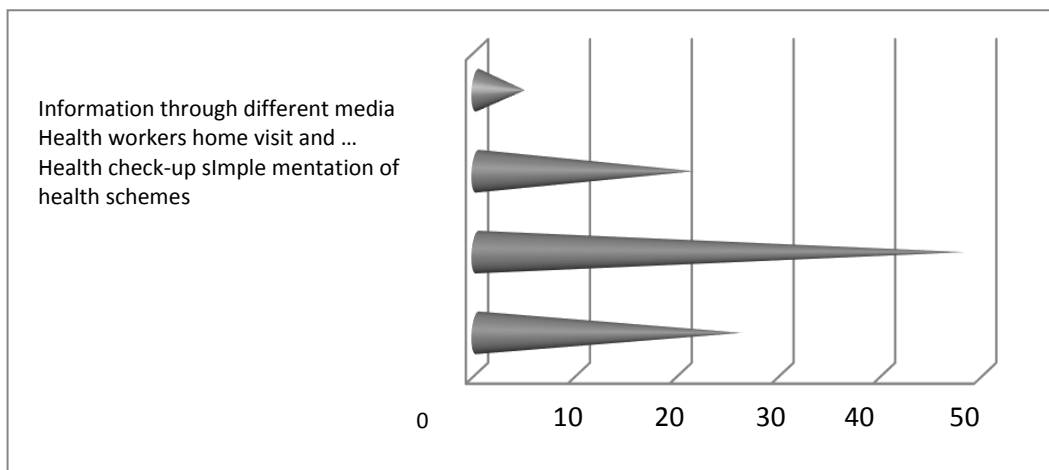
Responsibility of unhygienic condition of area	Frequency	Percent
Self	26	17.3
Carporat or of the respective ward	40	26.7
Municipal Corporation	46	30.7
Allof these	38	25.3
Total	150	100.0

26(17.3%) respondents says that it's their own responsibility, 40(26.7%) respondents says it's an responsibility of Corporator, 46(30.7%) respondents says it's an responsibility of municipal corporation, whereas 38(25.3%) respondents says it's above all responsibility to maintain hygiene in residential area.



Graph No.4 Opinion about hygiene and health care

44(29.3%) respondents were saying that maintain personal hygiene is our own responsibility. 33(22%) respondents says environment care is also our responsibility,45(30%) respondents says it's an responsibility of local government, whereas 28(18.7%)respondents says that all the above efforts are needed to maintain personal hygiene and healthy condition.



Graph No. 5 : Respondents expectation from government

	Implementation of health schemes	Health check-ups	Health workers home visit and guidance	Information through different media
Percent	26	48	21.3	4.7

The respondent's expectations about the awareness measures from the government. 39(26%) respondents expected that there is a need for an awareness campaign regarding the implementation of health schemes, 72(48%) respondents want health check-ups awareness, 32(21%) respondents want health workers' home visits and guidance and the remaining 7(4.7%) respondents want information through different media

Suggestions :

There is an urgent need to give attention to health awareness and related activities in the urban slums.

- The local urban authorities should organize awareness campaigning at the slum regarding personal hygiene and related things.
- The residents of urban slums also need to take precautionary measures during such a Pandemic.
- The focus of the concerned department on primary health care as a preventive measure is also a beneficial one.
- The provision of basic amenities at the urban slums is a prime requirement for the healthy life of its residents.

Conclusion :

Generally, social research provides information on the needs, attitudes and motivations of a population and it plays a vital social role and assisting various implementing agencies. The awareness level and perception about health are responsible for its care and precaution. The slum dwellers are not aware of the consequences of such pandemics and related things. The findings of the study show that the respondents who are women from urban slums are not much aware of the contamination of Covid_19 and its impact. Provision of sanitation and other basic amenities to such communities during the pandemic as part of crisis response. Ensure enhancement of community-based health resources and their better utilization by slum dwellers. Extend helplines and technology-based solutions to assist survivors and include information on how to tackle such pandemic situations. Awareness campaigns by voluntary organizations and NGO's as well as civil society organizations. Direct intervention to mitigate the severity of such pandemics.

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Need of Alternative Livelihood for Women Bidi Workers and Sugarcane Harvesters : A Study of Solapur

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Abstract : *This paper aims to highlight basic information about bidi workers, sugarcane cutters, livelihood, and livelihood services in Solapur. Solapur city situated in the district of Solapur, is home to the largest number of bidi workers as well as sugar factories. Large numbers of women are engaged in bidi rolling and also in sugarcane cutting. Sugarcane cutters are the seasonal migrants who migrate from the drought-prone area to the sugar belt. People from poor economic status, lower castes, and illiterate or with low education levels are involved in the seasonal migration. They face abuse, financial domination, and occupational health concerns. The bidi workers and sugarcane cutters need an alternative livelihood strategy. This paper reviews existing programs, policies, practices, and models for developing an alternative livelihood.*

Keywords : *Livelihood, Livelihood services, bidi workers, sugarcane cutters, alternative livelihood*

Introduction :

Life of many rural as well as urban peoples in developing countries is a constant struggle to make a living. The rural poor can often produce most of their own food, urban residents generally depend on earned income to obtain food.

Livelihood means of living especially of earning enough money to feed oneself. Livelihood is defined as a set of activities essential to everyday life that are conducted over one's life span. Such activities could include securing water, food fodder, medicine, shelter, and clothing. Livelihood can be best defined as the methods and means of making a living in the world.

The concept revolves around resources such as land/property, crops, food, knowledge, finances, social relationships and their interrelated connection with the political, economic and sociocultural characteristics of an individual community. A livelihood consists of capabilities, assets and activities that are required for living.

India has more than 3.6 million bidi workers engaged in bidi rolling under miserable poverty and extremely hazardous conditions. Solapur has 70 thousand bidi workers. These workers constitute one of the most vulnerable segments of the country's workforce. With the gradual disappearance of the factory system and the coming up of a wide-scale contractual arrangement, most of the workers have turned out to be home-based. This process has increased the involvement of women and child labour in bidi rolling activity. Taking into consideration, the health concerns and exploitative work conditions associated with the bidi rolling have compelled the bidi workers to look for an alternative source of livelihood. The policies and legislative provisions for the welfare of bidi workers have done very little to improve the working conditions of bidi workers. The absence of organized production in the bidi industry makes it difficult to improve the working state of the bidi rollers and in implement welfare laws. In the state of Maharashtra, the division of western Maharashtra has a reorganization of the sugar belt of Maharashtra state. Sugarcane cutters are the people who are migrating to the sugar belt of Maharashtra from the drought-prone districts of Maharashtra. It has been said that people migrating from drought-prone areas are poor, and landless and they migrate because of drought.

There are several theoretical and practical perspectives on whom we call unorganized labours. However, in a simple manner, one could say that a labour force that does everything and is

deprived of everything is called as unorganized labour. By considering the severe extent of exploitation of these workers, a few unorganized sectors or industries have been repeatedly highlighted. These sectors involved the workers of brick kiln industries, construction workers, domestic workers, migrant's workers like sugarcane cutters, and more. While discussing labour in the unorganized sector, there is a need to have a separate argument on each different segment.

While understanding the issues of sugar cane cutters from different perspectives one must consider the aspect of seasonal migration which is intensifying and influencing the challenges of these workers. These sugarcane cutters used to migrate from districts like Beed. Most of the women's sugarcane cutters are illiterate. Seasonal migration is the reason for delinked with education.

After migration, these people perform activities related to sugar cane harvesting. Those activities probably include cutting, collecting and binding the bundles, collecting the shoots, and lifting and carrying the bundles of sugarcane. This work is extremely laborious and requires extensive energy. There are few sugar factories that have provided kutchra or pakkahouses to the few workers who are bullock cart-centric and carry sugarcane towards the factory. Although, the people have to live on the farm where there is no housing. They make a tent of plastic sheets or roof of the sugarcane shoots. Sugarcane cutters are migrating along with their children. This is the reason why sugar cane cutters are away from education and the cycle continues in the case of their children.

Discussion:

Bidi workers are not adequately educated, less skilled. Lack of education, skills, the dearth of income and land scarcity might have forced these bidi workers to work in such a hazardous profession.

It was evident that the young generation was not interested to pursue bidi rolling like their family members. There is a serious consideration and need of providing alternative livelihood options to the bidi workers along with training and market exposure to facilitate steady income. The bidi workers were unhappy with their profession and want to change their current occupation. The reason for this were less wages, hazardous working conditions and fear of the bidi industry shutting down.

Most of the bidi workers want to shift from bidi rolling to alternative livelihood if provided with an opportunity followed by training and handholding. For a (Jugale, 2012) (shinde, 2020) (Ashish Supase, 2020) alternative livelihood, there is scope for tailoring, followed by industrial work, pickle making, papad making, and beauty parlour. Mehndi designing, packing work, food processing and phenyl production. The challenges and the remedies for these are as follows.

Challenges:

- 1) Inadequate skill training.
- 2) Lack of technical support
- 3) Lack of Knowledge
- 4) Lack of awareness contributes to a lack of skills and experience.
- 5) Jobs opportunities are limited

Remedies:

1. Conducive policies and institutional support are necessary for smallholder producers to increase their income through better access to markets.
2. Proper training should be provided with technical support.
3. Enhancing nutritional quality of food products along the crops value chain.
4. Breeding for more nutritious crops, promoting health platforms, reducing occupational and health hazards and improving water quality.

The following initiatives may help to improve livelihood.

National Rural Livelihood Mission (NRLM):

NRLM is a poverty alleviation project implemented by the Ministry of Rural Development, Government of India. This plan is focused on promoting self-employment and the organization of rural poor. The idea behind this program is to organise the poor into SHG (Self Help Groups) groups and make them capable of self-employment. In 1999 after restructuring Integrated Rural Development Programme (IRDP). The Ministry of Rural Development (MoRD) launched Swaranjayanti Grameen Swarojgar Yojana (SGSY) to focus on promoting self-employment among the rural poor. SGSY is now remodeled to form NRLM, thereby plugging the shortfalls of the SGSY programme. This program was launched in 2011 with a budget of \$ 5.1 billion and is one of the flagship programmes of the Ministry of Rural Development. This is one of the world's most prominent initiatives to improve the livelihood of the poor. This program is supported by the World Bank with a credit of \$ 1 Billion. The program was succeeded by Deen Dayal Antyodaya Yojana.

National Urban Livelihood Mission (NULM):

NULM is a project under the Ministry of Housing and Urban Affairs. To reduce poverty and vulnerability of the urban poor households by enabling them to access gainful self-employment and skilled wage employment opportunities, resulting in an appreciable basis, through building strong grassroots level institutions of the poor and ultimately linking them to the entrepreneurial and the start-up revolution of India. The mission would aim at providing shelter equipped with essential services to the urban homeless in a phased manner.

Conclusion:

The employment conditions for the bidi workers and the sugarcane cutters are exploitative. The majority of them are dissatisfied and are on continuing because there are not any other options available. If there is training provided for some other kind of work, most of the workers may shift their profession. It is necessary to develop a suitable model which can provide bidi workers and sugarcane cutters with a better means of livelihood economically and socially. There also must be a need for the private sector for supporting activities for alternatives. The central, state, and local governments and civil society should work towards the rehabilitation and provision of alternate livelihood measures so that lives of the bidi rollers and sugarcane cutters can be improved.

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Spirituality : As a Means of Well-Being

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***Abstract :** This research article seeks to learn and understand spiritual practices and their utility for human well-being, which can enable a spiritual community to improve its spiritual practices to promote participation in society. Spiritual fellowships, such as church/temple attendance or meditation, and prayer groups, are sources of social support that provide a sense of belonging, and security to the community. Spiritual practices should share their well-being to lead their organization and community. We know that people in search of spirituality have tried to connect with the holy through rituals and spiritual practices. Such rituals or spiritual practices (Japa, Homa-Havan, Meditation, Parayana, Namasmaran etc.) In my research, I wanted to see if there is any relationship between spiritual practices and well-being. Can spiritual practices lead to human well-being? human Well Being is to be explored in relation to each other, through my research I want to get the answers to all the questions of whether spiritual practices are beneficial for human well beings or not. From this research, I wanted to find out whether the spiritual method is useful for human beings and whether the adoption of the spiritual method will lead to human well-being (such as human, physical, social, economic, spiritual well-being etc). This article is based on secondary review data.*

***Keywords :** Spirituality. Spiritual Practices, Utilization, Human well-being, community*

Spirituality :

Spirituality means self-discovery, knowing oneself, not following the rules of religion without one's own doing. Religion is religion when it develops itself, then it becomes spirituality, and when spirituality goes into the form of service, then it becomes welfare and becomes a human being.

Spirituality in Religions and Spiritual Communities explores the role of emotions in Western and primitive religions as well as some contemporary spirituality. In spiritual practices, i.e., during prayer, during mystical experiences, during the study of meditation or other spiritual subjects, and during participation in religious rituals, the answers to the kinds of feelings and spiritual experiences that individuals and groups experience are sometimes found individually. (Dr. GokarnaNiranjan, spirituality and Social Work) We know that people in search of spirituality have tried to connect with the holy through rituals and spiritual practices. Such rituals or spiritual practices (japa, homa- havan, meditation, parayana, namasmaran and other spiritual activities etc.) may be done in the privacy of one's home or they may take place in holy places and at holy times; They are usually based on a sacred story (sastra). This rite of passage is performed in two ways, the rite of intensity and the passage. The former may include pilgrimages or retreats, some of which people participate in only once in their lifetime, such as the Hajj in Islam. Some spiritual disciplines such as meditation, yoga and martial arts can be practiced anywhere and anytime, in groups or privately. In some traditions, these disciplines may be performed as part of a ritual. Other spiritual practices, such as fasting and living according to monastic rules, certain renunciations or practices, may all take place at special times or in special places. Both rituals and spiritual disciplines are always about the "spiritual growth" of a person - an expression that can mean different things to different people - as well as creating the possibility of spiritual experiences. the everyday ordinary world, and being in touch with one's spiritual nature and touching the sacred (Joseph Marphi, *sanket*, The power of Your subconscious mind 27 to 28). The spiritual path inspires us, like keeping the mind in the right place by adopting Buddhi Yoga, Lord Krishna has mentioned in Buddhi Yogas how much the mind can be directed beyond limits, that is,

when the intellect is stable, a person does not turn to wrong things, according to which he can control his thoughts and emotions (Wilson, et al., 2012)

Definition :

It is a school of thought that emphasizes the importance of morality by believing that something exists in the world beyond the body and mind, perhaps called spirituality.

- Spirituality is the transcendental mental experience of transcendental concepts
- A wonderful word, ubiquitous today and full of possibilities. That is the illusion of both science and religion, politics and business.
- Spirituality is what our world and ourselves seem to lack.
- Spirituality is the depth and truth and inclusive wholeness of life, our lost and mourned connection to the universe.

What is spirituality? It is a study of the concept, what it means now, and how it is used now. We look at its origins and see what it has displaced to occupy the prominent place it now does in our minds, hearts and imaginations. As used today, however, the term is almost completely disconnected from its historical meanings. This transformation has happened very quickly. The spiritual path inspires us, like keeping the mind in the right place by adopting Buddhi Yoga, Lord Krishna has mentioned in Buddhi Yogas how much the mind can be directed beyond limits, that is, when the intellect is stable, a person does not turn to wrong things, according to which he can control his thoughts and emotions. Due to the social work principle of Spirituality altruism, through the role of social worker he leads the society towards social justice and equality, the role is supported by religious as well as spiritual ideologies.

Concept : - Spirituality

“We are not human-being having a spiritual experience; we are spiritual-being having a human experience.” By- Pierre Teilhard de Chardin. Whatever makes you feel peaceful, joyful and content is spirituality. All the acts of kindness and goodness you encounter throughout your day. Having a relationship based on a profound level of mental or emotional communion has deep feelings and belief, including a person’s sense of peace, purpose, connection to others and belief about the meaning of life. Activities that renew, lift up, comfort, heal and inspire both ourselves and those with whom we interact. The word “Spirituality” flows from the Latin term “spiritus” which means “breath” – referring to the breath of life. It is primarily a dynamic, personal and experimental process. If we agree with the meaning of “breath”, - we will find it always within us. It does not belong to any culture, historical epoch, or belief system. It belongs to us. Compassion, discernment (judgment), high ideas, harmony, joy, knowledge, intuition, kindness, openness, patience, self-responsibility, serenity, tolerance, wisdom and gentle love – are the attributes of true spirituality. If we add the period of Buddha, Mahavira, and Samkhya around 500 BC, we can see that, in India, more than in any culture, spirituality has been emphasized for almost 2,500 years of recorded history. Spiritual Gurus came from all castes and religions, e.g. Hinduism, Buddhism, Jainism, Sikhism, Islam and Sufism etc. They were not limited to any particular part of India. In the Indian conceptualization of self, there are four concepts of self the physical self, the psychological self, the meta-physical (atman) self, and the social self.

Spirituality is used to describe an inner, subjective experience that makes us feel a strong interest in understanding the meaning of things in life. We see spirituality as the thread that joins together the pearls of the world’s religions and as the essence that connects all human beings with all of life. Spirituality is somewhat an umbrella, covering formalized religious experience as well as an individual’s transcendental experience. It is one holistic purpose of the world’s religions. It is a unified quality of mind, heart and soul. It is concerned with individual subjective experience. Spirituality is a part of life that guides our behavior as to how to adapt to the internal environment, just as a human being is adapted to live in the external environment. It is a “faith” in a higher

power, “certainty” about life’s meaning and sacredness, a “strong belief” in the power of love to overcome problems in the mortal world.

Spiritual people try to improve their spiritual tendency by using spiritual methods or as it helps the person to improve

- Determining the purpose of life.
- Acceptance of liabilities.
- Higher thinking and behaviour.
- Self-control.
- Behaving ethically, adhering to moral values,
- Develops a positive self-concept.
- Not committing sins like not harming life be it mentally or physically
- This is all because spirituality makes a person disciplined and discipline is the most important quality of a person to succeed in life.

Some other religious and secular practices-

- Ritual practices and other forms of worship
- Visiting temples, pilgrimages and retreats
- Meditation and prayer, chanting, worship, naming
- Reading wisdom literature and scriptures
- Sacred music including hymns and devotional songs
- Selfless, compassionate actions
- Engaging with nature
- Maintaining a stable relationship
- Vratavaiklya, to sacrifice, to keep a promise

From the Indian perspective, people worship stones, hills, trees, plants, animals, the sun, moon, stars, and ancestors etc. Ritual- a ritualized expression of feelings or beliefs or both. Ritual is a framework that preserves religion as well as demonstrates it.

Spiritual Ideologies :

Teach society to respect without discrimination, and to believe in the ability of human beings to create change. Social work considers matters beyond the human mind to be important while using meditation and thinking. Spirituality is said to be an important moral foundation in social work as it serves the development of society. The central point of the book is that you can use your imagination to suggest ideas to your subconscious to get what you want. If repeated often enough, your mind will then steer your behaviour more towards making those ideas a reality, unbeknownst to you. We can activate our subconscious mind using spiritual methods/Practices like:

1. Meditation Your daily exercise routine should include meditation techniques.
2. Visualization. You should spend part of your day practicing visualization.
3. Confirmation.
4. Repeat for results.
5. Music
6. Get enough sleep.
7. Engaging in art.
8. Combat Resistance.

Well-Being :

Well-being is a fundamental component of health through which one realizes one’s own cognitive, affective and relational abilities. Heider (1997) was the first who propose the definition of general

well-being; "it is mainly governed by two important factors- personal powers one possesses and environmental powers for the exhibition of any behaviour". So, well-being is the process of living at one's highest possible level as a whole person. It is not a state that is attained once but is an ongoing, dynamic and fluid process through time and effort. Well-being may be referred an individual's satisfaction with life, with cultural and intellectual conditions. Each individual makes broad judgments about life as a whole as well as about domains such as marriage and work. Thus, the measure of well-being includes several dimensions as life satisfaction, and work satisfaction increase of 102 positive affect and low levels of negative affect. Well-being is – being happy, achieving self-respect, taking part in the life of the community, and appearing in public without shame. These functions make up a person's being and the evaluation of a person's well-being. So, well-being is generally defined as a combination of two factors: positive affect (happiness and satisfaction with life and low level of negative affect (stress, depression, lack of confidence). The central point of the book is that you can use your imagination to suggest ideas to your subconscious to get what you want. If repeated often enough, your mind will then steer your behaviour more towards making those ideas a reality, unbeknownst to you. We can activate our subconscious mind using spiritual methods like 1. meditation Your daily exercise routine should include meditation techniques. 2. Visualization. You should spend part of your day practicing visualization. 3. Confirmation. 4. Repeat for results. 5. Music 6. Get enough sleep. 7. Engaging in art. 8. combat resistance.

Eastern and Western Concepts of Well-Being :

In Indian tradition, control over the senses is considered essential for well-being. It is a state of "good mind" that is peaceful and calm. It is believed that a healthy mind works but does not react, the mind is free from conflicts and performs all duties perfectly. When it comes to spirituality and well-being in the contemporary world, we can say that today mankind is in a miserable state. Despite the tremendous achievements of science and technology, which have enabled us to dive deeper than fish, fly faster and higher than eagles, burrow deeper into the earth than reptiles, and even reach the moon. walking on its surface; Our mental suffering is greater than in the past. Our life has become more comfortable and luxurious than before but this luxury and comfort creates conflict in our mind. However, maintaining good health involves more than taking care of your physical needs. There is something else that plays a powerful role in our well-being. All these show the great achievements of science and technology but the competitive instincts push mankind into the dark depths of despair.

The Western concept is to avoid frustration and stress and to have some degree of control over the environment that fulfils personal and social needs. Anxiety, depression, blood pressure, insomnia, neurotic disorders, and psychosomatic disorders are very common in the current situation. These circumstances are sufficient to answer why nowadays people are coming more to spiritual practices, why people are running to learn the "Art of Living" under the guidance of "Sri Sri Ravi Shankar" and "following the teachings". Osho" is a modern philosophy of life. All this is happening because a healthy body and a healthy mind require a kind of healthy spirituality, and a sense of spirituality gives a sense of peace, patience, maturity and overall well-being. Understanding Spirituality 115 provides a strong psychological basis for nurturing our inner world, a sense of contentment and security. Spiritual people are rarely depressed, have excellent physical health, and are satisfied with meaning and purpose in their lives. Spiritual presence provides social support that protects people from social isolation, gives them a sense of belonging, and self-esteem, and equips them to cope with stress and negative life events.

Spiritual Health :

It is the duty of every human being to be spiritually healthy. Spiritually disciplined people are trained in orderliness, good conduct and have a healthy lifestyle. These qualities are of vital significance for the personality development of an individual. Spiritual discipline can be maintained by the conscious efforts of the individual himself in a nutshell, we may say that spiritual discipline is the discipline of body, mind, heart, attitude and behaviour.

The concept of spiritual health was introduced by Bist in 1978 at WHO. Spiritual health is one of the most important states of the body, mind and spirit. Spiritual health ensures the well-being of people and suggests ways such as yoga, meditation, prayer and offering spiritual practices in life to help people. Spirituality is positively related to health and inversely related to disorders. Spiritual health promotes other aspects of health also and helps people to achieve their well-being. Spiritual health enriches life and improves the quality of life. A spiritually healthy individual is one who feels close to a supreme being, having spiritual virtues like humility, compassion, forgiveness, love and peace. These people have the potential to make strong interpersonal relationships and have a clear humanistic idea. Health is divided into three parts one body second mind and third soul for the health of the mind the cycle of thought must stop and to stop this cycle the Bodhi mind must be stable i.e. if there are many thoughts or the mind is too unstable then the person goes to the disturbed stage and accordingly the mind is out of his control. Surya Namaskar is very helpful in reducing stress, tension, thoughts, depression, and stress.

Improve Spiritual Health By :

- Identify the things of one's life that give a sense of inner peace, comfort, strength, love and connection.
- Doing spiritual activities like- praying, meditating, reading sacred/inspirational texts, taking nature walks, doing yoga, attending religious services etc.

Conclusion :

Spirituality means self-discovery. Spirituality is not just doing spiritual practices, but using those practices in life which would be called practicing, Religion, and Morality with rules and regulations. Spirituality is a kind of positive concept that motivates humans to act morally. (Such as paap and punya) spiritual practices are positive and negative acceptance, if people do good deeds to self to others, they will reach enhancement and if they do wrong things and deceive other people naturally, they will go to hell. So, it is said that to make life easy and free man should workshop towards doing good things and being positive with himself/herself. Positiveness brings satisfaction if we relate hopefully helpfully with others and negativeness brings loneliness and misery in life when we do something wrong with others. The positive role of spirituality in human life suggests that it helps to cope with such things as fear, anger, inferiority complex, depression etc. Spiritual practices improve one's life and make man mentally strong, physical endurance increases, financially he works out and to get satisfaction, his morality works in the society with good human relations. through Spirituality, man reaches the culmination with no expectation from this world.

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Role of Financial Literacy in Rural Empowerment

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Abstract : *The well-being at an individual level as well as at a collective level depends on the effective use of available resources. The rural people facing poverty need to be empowered with financial literacy. The drive to improve financial literacy in various countries on the background of technological revolution resulting in better financial behaviour India also undertook the mission of financial literacy through its national level premiere institute like SEBI, PFRDA, IRDA and RBI. The spread of financial literacy will act as protection of common investors from ponzy schemes and deployment of the financial portfolio with financial goals. This will result in higher growth and welfare.*

Introduction :

Financial literacy is now a basic skill of living along with Reading Writing and Arithmetic. Technological changes are making it easier for tech-savvy people but making it more complicated for the common man. The challenges for managing livelihood with the advent of liberalization, privatization and globalization are becoming multifaceted and complex. The challenge for sustainable rural livelihood is more complex and needs urgent attention considering the size and intensity of the problem. The solution to this multi-faceted problem lies in a holistic approach which needs to be based on financial literacy. In this paper, an attempt is made to highlight the role of financial literacy in sustaining rural livelihood and rural empowerment

Objectives of the Study :

The following are the objectives of the paper

- 1) To study the changing nature of rural livelihood
- 2) To study the level of financial literacy measures
- 3) To evaluate the efforts made for financial literacy
- 4) To suggest a policy frame for linking sustainable livelihood through financial literacy

Livelihood Scenario in Rural area :

In India, although the contribution of agriculture to the Gross National Product (GNP) is around 35%, in the absence of employment opportunities in industrial and service sectors, over 85% of the rural income is generated from agriculture, which spends about 75% - 80% of its earnings on food. Agriculture is the major source of livelihood but most of the illiterate farmers have not been successful in cultivating their land economically. They have been treating agriculture as a family tradition, following age-old practices and adopting new changes only after observing the success of their neighbours. Over 12-15% of the rural families are landless and among the landholders, 69% are marginal farmers with less than 1 ha holding (17% of the total land) and about 21% are small farmers with 1-2 ha holdings (34% of the land). Thus about 90% of families own less than 51% of the land, with a per capita holding of 0.19 ha. Out of the 147 million ha of agricultural lands, about 60 million ha are located in arid zones, which are mostly owned by poor families. As the chances of crop failure on these lands are very high, the farmers generally do not invest in external inputs like improved seeds, fertilizers, and plant protection measures and end up with poor crop yields, even during normal years (Hegde, et al., 2002). Livestock is an important source of supplementary income. Mixed farming has been serving as insurance against natural calamities while supporting food security and nutrient recycling. However, the poor productivity of the land and livestock and inefficient use of forests are the causes of seasonal employment in villages

("Financial Literacy – The CQ Researcher Blog". cqresearcherblog.blogspot.com). Small farmers have to work only for 100-120 days for growing one crop in a year, which is not adequate to sustain their livelihood. After independence, poverty alleviation was the major agenda of the Government of India. Thus various community development programs were initiated to build the capabilities of the poor. These programmes provided skill-oriented training to build the capabilities and supplied critical agricultural inputs either free or at subsidized cost. However, most of these programmes did not succeed due to lack of people's participation.

Strategy change for rural livelihood : NRLM

The challenge of providing access to secure and sustainable livelihood is the key component for poverty eradication. The policy makers designed various strategies in this regard which were supply-driven programs like IRDP. The Rural Livelihood Mission was started in 2010-11 with the restructuring of SGSY Swarn Jayanti Gram Swarajgar Yojana of 1999. In order to build, support, and sustain the livelihood of the poor, NRLM harnesses their capability and complements them with capacities (information, knowledge, skill, tools, finance, and collectivization), so that the poor can deal with the external world. NRLM works on three pillars – enhancing and expanding existing livelihood options of the poor; building skills for the job market outside; and nurturing self-employed and entrepreneurs.

Dedicated support structures build and strengthen the institutional platforms of the poor. These platforms, with the support of their built-up human and social capital, offer a variety of livelihood services to their members across the value chains of key products and services of the poor. These services include financial and capital services, production and productivity enhancement services that include technology, knowledge, skills and inputs, market linkages, etc. The interested rural youth under Below Poverty Line would be offered skill development after counselling and matching their aptitude with the job requirements, and placed in jobs that are remunerative(<https://m.rbi.org.in/financialeducation/home.aspx>). Self Employed and entrepreneurial-oriented poor would be provided skills and financial linkages and nurtured to establish and grow with micro-enterprises for products and services in demand. These platforms also offer space for convergence and partnerships with a variety of stakeholders, by building an enabling environment for the poor to access their rights and entitlements, public services, and innovations. The aggregation of the poor, through their institutions, reduces transaction costs to the individual members, makes their livelihoods more viable, and accelerates their journey out of poverty.

NRLM mission enables :

- a. shift from the present allocation-based strategy to a demand-driven strategy, enabling the states to formulate their own livelihood-based poverty reduction action plans.
- b. focus on targets, outcomes, and time-bound delivery.
- c. continuous capacity building, imparting requisite skills, and creating linkages with livelihood opportunities for the poor, including those emerging in the organized sector.
- d. monitoring against targets of poverty outcomes.

As NRLM follows a demand-driven strategy, the States have the flexibility to develop their own livelihoods-based perspective plans and annual action plans for poverty reduction. The overall plans would be within the allocation for the state based on inter-se poverty ratios.

The second dimension of demand-driven strategy implies that the ultimate objective is that the poor will drive the agenda, through participatory planning at a grassroots level, implementation of their own plans, and reviewing and generating further plans based on their experiences. The plans will not only be demand-driven, they will also be dynamic.

Shortcomings of NRLM suffers from following shortfalls

1. NRLM plans to generate livelihood and provision of other rural services through SHG groups. But making it **mandatory** to be a part of SHG for access to various services may exclude some people from this system. Not everyone in rural areas may be a member of the SHG group and not everyone would like to be a member of such group. Some people may like to form other aggregation mechanisms or would like to start up new livelihoods individually. So, if the government make it mandatory to be part of SHG as a means to access various service, the process will get corrupted and exploitative. This resulted in a new form of money lending under the clout of microfinance. The agents in microfinance helped the banks to attain the target at the cost of the poor.
2. There are a lot of cases where SHG has been disintegrated or **taken over by elites** among the poor. The highhandedness of elites in the group should be checked otherwise the poor will be alienated. So it will be better than NRLM's focus on households as a primary target of the programme.
3. Rural economy is very diverse; many segments are there within the rural low-income group and also across the broader rural economy. So it is important that a range of services are provided to different groups as per their need and necessity. For this, the scheme should be very flexible even at the village level.
4. NRLM has not given serious attention to value-added agriculture which, according to the experience of most countries plays an important role in enabling and sustaining inclusive growth in rural areas. MSMEs are the growth engines of emerging and developing economies and they need targeted intervention. One thing that NRLM can do is developing a vibrant ecosystem for agro MSMEs. With the organization of women, Self Help Groups (SHG) micro-credit could be availed to meet their consumptive and production needs. Through several on-farm as well as off-farm activities focus many families could enhance their income. Some of the important activities

Financial Literacy Need and Nature :

In India, over 60-70% of the people are living in rural areas that neither have adequate land holdings nor alternate service opportunities to produce or procure these commodities. In the absence of adequate employment opportunities, rural people are unable to generate enough wages to sustain their livelihood. As a result, 40% of families, who earn less than Rs.11,000 per annum are classified as poor. The end of poverty within a reasonable time frame requires the spread of financial literacy.

Financial literacy refers to the set of skills and knowledge that allows an individual to make informed and effective decisions with all of their financial resources **Financial literacy** refers to the set of skills and knowledge that allows an individual to make informed and effective decisions with all of their financial resources **Noctor, Stoney, and Stradling (1992)** introduced, conceptualized, and defined the term financial literacy as “the ability to make informed judgments and to take effective decisions regarding the use and management of money”.

An international OECD study was published in late 2005 analysing financial literacy surveys in OECD countries. A selection of findings included:

- In Australia, 67 percent of respondents indicated that they understood the concept of compound interest, yet when they were asked to solve a problem using the concept only 28 percent had a good level of understanding.
- A British survey found that consumers do not actively seek out financial information. The information they do receive is acquired by chance, for example, by picking up a pamphlet at a bank or having a chance to talk with a bank employee.
- A Canadian survey found that respondents considered choosing the right investments to be more stressful than going to the dentist.

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- A survey of Korean high-school students showed that they had failing scores – that is, they answered fewer than 60 percent of the questions correctly – on tests designed to measure their ability to choose and manage a credit card, their knowledge about saving and investing for retirement, and their awareness of risk and the importance of insuring against it.
 - A survey in the US found that four out of ten American workers are not saving for retirement. An international OECD study was published in late 2005 analysing financial literacy surveys in OECD countries. A selection of findings included:
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RBI and Financial Education :

Financial Inclusion and Education are two important elements in the Reserve Bank of India's developmental role. Towards this, it has created a critical volume of literature and has uploaded it on its website in 13 languages for banks and other stakeholders to download and use. The aim of this initiative is to create awareness about financial products and services, good financial practices, going digital, and consumer protection. The booklet **FAME (Financial Awareness Messages)** provides basic financial literacy messages for the information of the general public. It contains eleven institution/product-neutral financial awareness messages, such as documents to be submitted while opening a bank account (KYC), the importance of budgeting, saving and responsible borrowing, maintaining a good credit score by repaying loans on time, banking at the doorstep or at vicinity, knowing how to lodge complaints at the bank and the Banking Ombudsman, usage of electronic remittances, investing money only in registered entities.

SEBI and Financial Education :

The Securities and Exchange Board of India provides Financial Education through the network of empanelled resource persons (RP). The target groups include school children, Middle-Income groups, Young Investors, Senior citizens, and Self-Help Groups. The booklets are provided free of cost and the workshops provide information on

(I) Basics of Savings & Investments :

- Budgeting
- Inflation Effects on Investments
- Risk and Return

(II) Power of Compounding & Time Value of Money

(III) Choosing the Right Investment Options

(IV) Asset Allocation Strategy

(V) Self Portrait

(VI) Savings & Investment Related Products includes · Banks · Government Schemes Bonds · Debentures · Company Fixed Deposits · Mutual Funds · Equity Shares · Investment philosophies

(VII) Protection Related Products

· Insurance Policies · Health Insurance

(VIII) Borrowing Related Products

· Personal Loans · Home Loans · Reverse Mortgage · Loans Against Securities · Credit Card Debt · Steps to Avoid Excess Debt

(IX) Advantages of Financial Education

(X) Investor Protection & Grievances Redressal Mechanism

Relevance of Financial Education for Rural Livelihood :

In the era of the global integrated financial market importance of financial education cannot be overruled. The relevance of financial education for sustainable rural livelihood. Financial literacy and education are of particular relevance to emerging economies. As these economies endeavour to improve the financial situation of their citizens by achieving higher economic growth rates Financial Education offers many employment opportunities to people around the world. Enhancement of financial literacy would help improve the financial well-being of their people even further through sound financial decision-making. Financial education can help a person to understand the risk and returns related to the fund invested in different financial products. Financial education helps in looking into a financial investment from various angles and evaluating the various alternatives

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SEBI.gov.in

www.ncfeindia.org

Developing a National Inclusive Ecosystem for Sustainable Development : Indian Perspective

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Abstract : *The National Policy on ‘Skill Development and Entrepreneurship 2015’ in its vision statement has stated that it ‘to create an ecosystem empowerment by Skilling on a large scale at a high speed with high standards and to promote a culture of innovation-based entrepreneurship which can generate wealth and employment so as to ensure citizens in the country.’ It is essential that such an ecosystem be inclusive. But it is very difficult to achieve inclusive growth in an economy of the size that India has along with a complex social, political, cultural, and economic network and a history of non-inclusion and discrimination. Therefore, it is necessary that an ecosystem of inclusion is developed and understood after gaining deep knowledge of social, economic, and political influencers. There are no boundaries as such for an inclusive ecosystem. There could be overlapping of components of various ecosystems which presently are scattered. For the practical purpose of creating an inclusive ecosystem, we should put them into an enclosing ecosystem. This is an attempt to design such an ecosystem, which is inclusive and an excellent ecosystem. This is a conceptual paper. The research in the area of ecosystem analogies, educational ecosystem, entrepreneurial ecosystem, business ecosystem, and the natural ecosystem is used for developing the framework of the inclusive ecosystem for the Indian economy.*

Keywords : *Inclusive growth, ecosystem, sustainable development*

Introduction :

The National Policy on ‘Skill Development and Entrepreneurship 2015’ in its vision statement states its vision as, ‘To create an ecosystem of empowerment by Skilling on a large Scale at Speed with high Standards and to promote a culture of innovation-based entrepreneurship which can generate wealth and employment so as to ensure Sustainable livelihoods for all citizens in the country (National Policy for Skill Development and Entrepreneurship, 2015). It is essential that such an ecosystem be inclusive. Broadly we can say that the target of faster growth is not always the target of inclusive growth, the inclusive ecosystem will become a pathway to growth process which yields broad-based benefits and ensures equality of opportunity for all. It is very difficult to achieve inclusive growth in an economy of the size that India has along with complex social, political, cultural, and economic networks and a history of non-inclusion. An inclusive ecosystem will lead to inclusive growth. Such an ecosystem is developed and understood after keeping in view the deep knowledge of social, economic, and political influencers. There are no boundaries of such an ecosystem. There are overlapping goals and activities but for practical purposes, they can be put into different components of the broader ecosystem. This is a conceptual-level paper. It attempts to design such an ecosystem so that future efforts can concentrate on igniting the right elements. The research in the area of ecosystem analogies hence literature on the educational ecosystem, entrepreneurial ecosystem, business ecosystem, and natural ecosystem is used for developing the framework of the inclusive ecosystem for the Indian economy.

Understanding the concept of Ecosystem :

The term originally used in ecology or biology is now universally applicable. It is used to describe the interaction in a system of living entities with their non-living habitat. The term has wide usage outside ecology or biology but always it is used to reflect the interrelations of various elements or agents which are systematically connected to produce a unified result while retaining their own independent existence (Gómez-Márquez, 2022). Outside biological science, it is widely used in the business or economic sense. It is used in research related to strategic management, entrepreneurship, and innovations and understanding the dynamics of firms’ competition. Not only

the stakeholders but the non-stakeholders are part of these ecosystems. The management and entrepreneurial literature mainly include innovation ecosystems. In this paper, the main objective is to explore the possibility of developing a National Inclusive Ecosystem by drawing parlance between ecological ecosystems and others outside it.

The Path of inclusive Ecosystem :

Biological Ecosystem and Human Development :

Natural or Biological Ecosystem is the major source of all the raw materials used by human beings for the production of goods and services. Ecosystems and the biological diversity contained within them provide a stream of goods and services, the continued delivery of which remains essential to our economic prosperity and other aspects of our welfare. In a broad sense, ecosystem services refer to the range of conditions and processes through which natural ecosystems, and the species that they contain, help sustain and fulfil human life (Newcome et al., 2005). The natural ecosystem has way included our business ecosystem and entrepreneurship ecosystem but the reverse is seldom happening. Individuals, commercial entities, and governments all are beneficiaries of services generated by natural ecosystems (Newcome et al., 2005). Sometimes there is a conflict of interest between the beneficiaries. Individual interest and commercial interest may be in competition with each other. Government has to protect the interest of Individuals or people at large but allow commercial beneficiaries to grow. The exploitative nature of commercial enteritis and complacent governments can lead to an ecosystem that is not inclusive in the sense that it ignores nature as an important agent in almost all human redeveloped ecosystems that are discussed ahead.

The Business Ecosystem :

The literature on ecosystem applications in the business context has developed to a great extent after the research about the entrepreneurial ecosystem, service management ecosystem, strategic management ecosystem, and knowledge-based ecosystem. There is no way we can have a single definition of a business ecosystem. It is rightly said, ‘Is the business ecosystem a metaphor for a business network or a description of an organizational form that is bigger than a business network?’ (Anggraeni et al., 2007). Different ecosystem analogies are discussed by Peltoniemi&Vuori, (2008). New approaches to business systems are examined to adapt to the complex changing business environment. They explore the industrial ecosystem, economy as an ecosystem, Digital business ecosystem, and knowledge ecosystem. For the purpose of creating a national inclusive in this paper Business ecosystem includes all the above plus it includes the service sector ecosystem and entrepreneurship ecosystem. While the knowledge ecosystem is the main driver of the business ecosystem. The academic ecosystem drives the knowledge ecosystems. The knowledge-based ecosystem was discussed by Michel van der Borgh, MyriamCloudt, and (van der Borgh et al., 2012)the paper explains, ‘how knowledge-based ecosystems create value. The focus is on a knowledge-based business ecosystem in which the participating firms are located in close proximity to each other (i.e. a geographical hotspot centered on knowledge). The network management literature(Johnston & Vitale, 1988) suggests that ‘business ecosystem management’ involves arranging the structures, facilities, and mechanisms needed to maintain the coordination of activities between the ecosystem’s members. This implies that managing an ecosystem implies creating and sustaining an environment where collaboration between (initially) loosely interconnected companies can evolve and take place(Riemer & Klein, 2006) (Riemer and Klein, 2006.)

The Entrepreneurship Ecosystem :

An entrepreneurship ecosystem represents the combination of conditions that shape the context in which entrepreneurial activities take place. GEM(Global Entrepreneurship Monitor 2015-16) assesses the following entrepreneurship conditions: financing, government policies, taxes and bureaucracy, government programs, school-level entrepreneurship education and training, post-school entrepreneurship education and training, R&D transfer, access to commercial and professional infrastructure, internal market dynamics, internal market burdens, access to physical and services infrastructure, and social and cultural norms. This means the entrepreneurial

ecosystem includes them and creates a structure for entrepreneurship development. The Indian economy has seen in recent years a positively inclusive model of the entrepreneurial ecosystem because of the government schemes such as Startup India, MUDRA, and skill development initiatives. The entrepreneurship ecosystem of our country can now focus on those factors which create either Innovation driven entrepreneurs or efficiency-driven entrepreneurs while most of them are factor-driven entrepreneurs.

Service Sector Ecosystem :

The service ecosystem has been addressed on the basis of two points. One is the complex interdependence of various companies just like the biological ecosystem and another is the strategic management perspective. There are researches that use the service quality and the ecosystem approach (Chen et al., 2014). Service quality management and ecosystem theory). The ecosystem reference point of the authors is Moore, (1996) life-cycle concept of ecosystems; Service sector Ecosystem model has been applied to Service Quality Management and the entire ecosystem develops because of the service quality commitment of the dominant leader firm. The life cycle theory-based model of the service sector ecosystem has in the Stability stage given way to a few dominant firms like Amazon or Alibaba and breaks the interdependent entity development pattern of the ecosystem. Even the system-generated leader companies in the final stage either go for self-renewal or face death. The original service ecosystem is then replaced by a new service ecosystem. This time the ecosystem has already a higher-level structure than the earlier where there was no single firm as a leader and all system components were developing with interdependent forces.

The Indian perspective in this regard shows that the entire e-commerce industry and the Information-based technology firms are the drivers of growth of the service sector ecosystem. Every other element of the service sector ecosystem like the financial institutions, the infrastructure development firms, the smaller vendors and sellers, the consumer services, lifestyle consumption goods industries, the educational sector, and all other distantly related elements have got benefit from this growth.

The Academic Ecosystem :

The academic ecosystem is the one where the main agents are from the education sector. Ecosystems may be defined as the full variety of actors (i.e., living species) and all non-living elements in use for education through teaching and learning. The full variety of actors involves the population inside the school (mainly teachers, principals, students, and other staff) as well as the population outside the school (entrepreneurs, associations, institutions, parents, families, friends and private persons etc.). The non-living elements inside this milieu are defined by all available material means (buildings, classrooms, external locations, tools, IT resources, etc.) and they influence the nature of the interaction of populations. All these populations are connected through networks (Toutain et al., 2020).

The Societal Ecosystem :

This is a vast ecosystem including- The Cultural Ecosystem: The Regional Ecosystem: The political Ecosystem: The Religious Ecosystem: and Educational Ecosystem. The knowledge ecosystem is partly a driver of the business ecosystem and part of the educational ecosystem. That section of society which not part of the formal education system is automatically excluded from the academic ecosystem yet they are part of the societal ecosystem. The national inclusive ecosystem should therefore include them as well. The societal ecosystem has evolved in such a way over the decades that exclusion is the default method and inclusion have to be created. The research literature that has taken place for understanding the interface between society and ecology as a study of the societal ecosystem, same with cultural ecosystem research has focused on cultures and the ecology, where the general concept of ecosystem services is often associated with a broadly instrumental view of ecosystem-human relations, the idea of cultural ecosystem services is designed to recognize that ecosystems are filled with cultural values and significance and invite

therefore an expansive understanding of the contributions ecosystems make to human well-being. Cultural ecosystem services thus encompass the “nonmaterial benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation, and aesthetic experiences” (Fish et al., 2016)

To understand the cultural ecosystem as a part of the societal ecosystem if we take culture as ‘culture is commonly taken to signify the intellectual, spiritual and aesthetic dimensions of human life and development, defined by (Oliver & Williams, 1959) then it will lead to exclusion. Therefore, we should use a societal ecosystem rather than a cultural ecosystem as it should include the above aspects of human life and identify their interface with non-human aspects of the world.

The Inclusive Ecosystem :

This paper mainly contributes to developing or designing such an ecosystem which will be inclusive in the sense that the Business ecosystem and entrepreneurial ecosystem will include the failed businesses in its orbit. The knowledge and experience of their business will become learning for future businesses and entrepreneurs. It will include women entrepreneurs; underprivileged and uneducated entrepreneurs should also be part of it with equal opportunities. The system will provide the skills required for becoming an entrepreneur to such people. The vulnerable groups of society remain out of the ecosystem and hence cannot benefit from the services offered by the ecosystem. Every living and non-living element in this world has a unique relationship with the ecological ecosystem. However, the changes in the ecological ecosystem do not have the same effect on each element. The positive changes and the degenerating changes have disproportional effects on different sections of society because of the non-inclusive social, academic, cultural or business ecosystem (Ratner, 2005).

How to Put the Inclusive Ecosystem at Work in India?

For building an inclusive ecosystem at a macro level a national master system can be created. Each ecosystem within the Master (inclusive) ecosystem can be designed without excluding any agent of that system. The objective of an inclusive ecosystem rests on the inclusiveness of each separate ecosystem. We avoid calling them as sub ecosystems because they are complete within themselves but not necessarily inclusive. As each independent ecosystems have an exclusion in it, the cumulative exclusion is big hence the objective of the National Skill Development and Entrepreneurship policy, that is ‘Creating an ecosystem of empowerment’ through skilling may not be fulfilled. Designing a master ecosystem of inclusiveness is envisaged here. The business ecosystem will become inclusive with the inclusion of entrepreneurial and service ecosystems connected through policy. While societal and business ecosystems are to be connected through policy then an inclusive ecosystem will be created. The national ecosystem has a third important component and that is the ecological ecosystem which is the foundation of other ecosystems, which should be commonly connected to all the other ecosystems. The ecosystems should be cross-functional and flexible. To make the operational master ecosystem government can create policy connections but to put it into practice various options can be considered. Like,

Applying Public Private Partnership for inclusive growth:

Applying E-governance for increasing the effectiveness of cross-functional activities: Making National level policies more and more multidisciplinary.

Conclusion:

The ecosystem to become inclusive different ecosystem analogies should be inclusive in themselves and connected to the ecological ecosystem. The National Master ecosystem for inclusive growth can be created only after an in-depth study of each independent ecosystem analogy with respect to its exclusion practices. The process is a complex process but possible and essential for sustainable development.

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A Study on Challenges and Opportunities before Women Entrepreneurship in India: A Critical Analysis

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Abstract : *There is no problem in saying that production and sale through self-help groups is a real indigenous movement because we can sell the products of our own village and increase the industry. One can try to strengthen the economy of the country by selling the products produced by the women of our country rather than buying the products from abroad and everyone should do encouraging work to strengthen the Indian economy. Women's empowerment is considered an important process of economic social and political upliftment. A qualitative process should be created to protect women while facing the traditional situation in the society and the society should effectively protest against the elements of oppression, exploitation, fear, discrimination, and political environment. Women should exist in the traditional male-dominated structure without fearing any trouble in the society. Like men, women also have 50 % reservation as well as concessions, but the ratio is shown to be less or higher according to gender discrimination. Women should be given an ideological vision to deal competently with all sections of society by giving them equal status with men.*

Keywords : *Women Entrepreneurship, Challenges and Opportunities, Economic, Analysis, Social and Economic Conditions, Employment etc.*

Introduction :

This paper analyses the economic empowerment of women in India and attempts to address the issues related to the economic empowerment of women. The economic empowerment of women in India is a major problem (Shettar et al., 2015). In India, more studies have been done on the subject of women's empowerment compared to the rest of the world, but in reality, the empowerment of women in developing countries like India has not been as expected. A major concern of women's empowerment in the 21st century is a major problem in practical and practical terms (Goswami et al., 2013). It is a big problem that many women are victims of various problems due to many social evils happening in society. The economic empowerment of women in India is the need of the hour women should be empowered from all points of view such as social, political, religious, cultural, and legal (Kambleet al., 2013). Women should be protected from all elements and evils in society and injustice and violence against women should be stopped and women should be able to face the injustice. This situation shows that unless women in developing countries like India are empowered, the male-dominated culture will create a huge barrier and Indian women will become inactive (Jakharet al., 2020). According to gender discrimination, women are treated unequally in society; they are known to be women through many factors such as education, and employment in the society (Modiyani et al., 2022, Gupta et al., 2017). There are many factors that enable women's empowerment in society but those prevalent factors should be faced with direct action only then women will be empowered and help in the qualitative and ideological development of women holistically.

Problems of the Study :

In a country like India with a huge population, the role of women entrepreneurs should be seriously considered in terms of creating employment opportunities. Businesses developed by women can play an important role in the development of a country. Similarly, these women can contribute to making other women strong and self-reliant by developing themselves. This process

can empower half of the country's population. For that, it is necessary to get society out of the stereotyped mentality. Business roles are not very easy for women and the social and family environment is also not favourable for them. That is why, with few exceptions, we have a very limited number of women in the professional world. Even as the number of women succeeding in education and other fields are increasing, this situation has not changed.

Objectives of the Study :

The main objective of this research is the opportunities and challenges of women entrepreneurs in India as well as the economic empowerment of women and some specific objectives have been given by the researcher as follows.

1. To Study the Challenges and opportunities of women entrepreneurs.
2. To Study the government policy and responsibility of the family.
3. To suggest remedies.

Significance of the Study :

Increasing entrepreneurship among women is considered as an important source of economic progress in any country. Women entrepreneurs not only become self-reliant but also create employment opportunities for others. At present, some industries in India are being run by women and it is an indication that many women have got employment in such industries. Such industries provide a safer and more open environment for women to work in than other industries and employ women. Women constitute more than one-third of India's labour force and their role in generating employment opportunities in addition to increasing GDP. This share of the female labour force can play an important role in boosting the Indian economy. Looking at history, it seems that not only in the cities and towns but also in the villages, the business of preparing and selling papads and pickles has been done by women for a long time.

Scope of the Study :

In today's era of competition, there are great opportunities for women entrepreneurs in developing and agrarian democracies like India, but the patriarchal culture makes Indian women more dependent on men for capital. The said research researcher has studied the opportunities and challenges in the Indian industry sector, especially the opportunities, and challenges from the point of view of women entrepreneurs. But in India a developing nation needs industries to develop many types of industries can be set up by many types of people but it requires capital. In this, the researcher can only study the scope of many types of entrepreneurs in the Indian women's industry sector but in this, only the entrepreneur has studied the opportunities and challenges of women entrepreneurs so the scope of this research is women entrepreneurs.

Limitation of the Study :

In India, the level of education of women is less than that of men, and many women's education has stopped at the primary level in the current situation women have received a large amount of education but there is no big change in the mentality of women regarding entrepreneurship because the old traditions have had a big impact on their mentality. The majority of women entrepreneurs and first-generation women entrepreneurs in India are because of lack of experience and they are not able to freely succeed in different fields because they depend on male-dominated culture. Any business to be started requires working capital but this problem is acute in the case of women entrepreneurs. As women in India are not financially independent, they lack money and also because of the patriarchal culture, there is a mindset of Indian women that they have to depend on the head of the household. After starting the business, women entrepreneurs have to consider the most important aspect of life. But in the early stage, women start-ups face major marketing

problems because, from the beginning, there is a mindset in society that a women-started business is a weak business, so marketing poses a major challenge to women entrepreneurs.

Research Methodology :

While studying the opportunities and challenges faced by women entrepreneurs in India, the researcher has used secondary research, in which secondary resources like research papers, articles, journals; internet newspapers, annual reports, government reports, various magazines, etc. have been used. The presence of women in India's industry is negligible, so it is an opportunity for women to have more scope in the industry in our country. While studying the opportunities and challenges faced by women entrepreneurs in India, the researcher has used the descriptive analysis research method.

Results and Discussion :

According to the Economic Survey 2019-20, the number of companies with at least one-woman director among the 27 thousand 84 authorized new small businesses in the country till the beginning of this year is only 43 % in 2018. Only 17 % of startup companies had at least one female co-founder. Last year, the number of such companies decreased to just 12 %. It should be noted that India was ranked 52 out of 57 countries in the Women Entrepreneurs Index last year. These statistics show that there are still many challenges facing women entrepreneurs in our country and these challenges are not allowing the number of women to increase in the world of business and industry. The current situation should be considered more seriously, as even the Central Government's ambitious 'Startup India' scheme has not increased the number of women entrepreneurs.

Challenges Before Women Entrepreneurship :

Actually, providing financial support or facilities alone is not enough to empower women entrepreneurs. Apart from the overall change in social and family thinking obstacles in the path of women will not be removed. Of course, the share of women in the country's labour force has increased significantly over the past few years; but there is a big difference between women becoming servants and entrepreneurs. No need to fight. In business, however, one has to fight on many fronts simultaneously. From investing in women-run industries to successfully operating them, many prejudices and other problems are inherent only to women. Due to this reason, the share of women who highlight their position in almost every field is very limited in the case of professions. Business roles are not very easy for women and the social and family environment is also not favourable for them. That is why, with few exceptions, we have a very limited number of women in the professional world. Even as the number of women succeeding in education and other fields is increasing, this situation has not changed. Today, the number of women directors in companies is limited. Not only this, their decisions are not effectively accepted. Over the years some companies have increased the number of women on their boards, but this change cannot be seen in terms of the increasing number of women in the business sector.

Opportunities before Women Entrepreneurship :

The state index is a decision of the special policy environment to promote beneficial women beneficiaries and women entrepreneurs designed for industrial development. This type of policy implemented by the state is being implemented for the first time in the country and this state has provided full access to women. Women in India are turning to entrepreneurship as a result of changes in economic, social, educational, etc. sectors, but their entrepreneurial motivations vary. Success in any task requires achievement and motivation. Accomplishment motivation is also the most important motivation to become an entrepreneur. Achievement motivation is a desire to achieve success. Accomplishment motivation is considered very important to overcome any obstacle or achieve success. Lack of achievement motivation among women in the present scenario is very much seen because women in India do not have independence they cannot think independently they have an attitude of dependence on man many types of becoming so they are not

ready to accept any risk because achievement motivation is low. An important feature of the industry is women's unwillingness to take risks as women entrepreneurship in India lacks risk-taking skills and therefore depends on men. Women have to fulfil two types of responsibilities simultaneously, family and entrepreneurial. Due to the traditional mentality of women in our family system where men earn money and women take care of the house, the success rate of women in industries is less than that of men. There are some natural limitations placed on women such as marriage and childbearing, things like this turn women's lives upside down and disrupt the responsibilities assigned to them and they have to stay away from big industry. As the social system in India is male-dominated, the mindset of the society is that women cannot do business or set up a big business, because, in the traditional view, women have been taking care of the health and children, so a big problem is that women are not able to financially support their families.

Women Entrepreneurs and Family Responsibility :

There are many examples in our country of women distinguishing themselves in the world of business after taking care of domestic responsibilities. But it is a fact that many women are so burdened with family responsibilities that they cannot even think about the world of innovation and business. Despite their ability and aptitude, such women cannot navigate the career path. They are not able to utilize their skills and innovation capabilities in a professional manner. Women entrepreneurs are an important component of manpower. Despite this, most people view women-led businesses with distrust. According to the National Sample Survey, only 14 percent of business organizations are run by women. Most of these enterprises are small-scale and self-financing. Less about schemes that provide financing and business support to women Information is also an important reason behind this. In such a situation, if the government creates policies that support women and open the doors of financial assistance to women for innovation, then a prominent presence of women can be seen in the business world.

Women Entrepreneurs and Government Policy :

Women's entrepreneurship has been considered an important resource in the economic development of the state. Women entrepreneurs are presenting different dimensions in management, organization, and business-related matters in society. However, the number of enterprises managed by women is very small in proportion to the total enterprises. In today's modern dynamic era, women entrepreneurs will play an important role in the global movement for sustainable economic and social development. In the state of Maharashtra, although women have played a valuable role in society, due to many reasons, there has not been enough scope for their entrepreneurial efficiency. Currently, women entrepreneurs face many challenges such as gender discrimination and position in society, insufficient resources to start a business, lack of technical and managerial knowledge, limited financial resources and investment support, lack of affordable and safe business spaces, etc. An enabling policy for women entrepreneurs will be implemented with the vision of creating a globally competitive business centre and creating a conducive environment for women entrepreneurs to promote economic and social change through women-led initiatives for the inclusive development of the state.

Remedies :

There is no problem in saying that production and sale through self-help groups is a real indigenous movement because we can sell the products of our own village and increase the industry. One can try to strengthen the economy of the country by selling the products produced by the women of our country rather than buying the products from abroad and everyone should do encouraging work to strengthen the Indian economy. It is necessary to develop women's entrepreneurship in the changing economic and social conditions. Because efforts are being made for it but the desired result has not been achieved. Complementary conditions are being created for the development of women's entrepreneurship. There are many factors, in which women's movement, women's organizations, changes in social conditions, changes in government policies, innate qualities in women, etc. are complementary to the development of women's

entrepreneurship. The development of women's entrepreneurship should be promoted by taking the support of earlier factors.

- (i) Development of women's entrepreneurship will help in economic development to a great extent.
- (ii) As women constitute almost 50% of the total population in India, the government should encourage women to participate in women's entrepreneurship.
- (iii) Encouraging women for entrepreneurship is essential in developing and democratic nations that have adopted mixed economies like India.
- (iv) Women entrepreneurship is very important for the generation of large employment for women and the use of adequate resources and skills to support economically self-sufficient families and the improvement of social conditions and increase in national income.
- (v) In order to change the social status of women in the general situation, women entrepreneurship is a very important and important option, it is necessary for the government to encourage women and make it available.
- (vi) As the level of education among women in India is less than the level of education among men, education should be disseminated from the perspective of women
- (vii) As Indian society has not changed to some extent, women should be empowered to carry on the old traditions through social change.
- (viii) In order to develop women's entrepreneurship, women's empowerment should be organized by building a women's movement and women's industry should be established.
- (ix) For the development of women's entrepreneurship, it will be more beneficial for women to make efforts than others because women are becoming empowered in the current globalization with the education sector as well as all other sectors but they need encouragement.
- (x) It is very necessary for the government to change the policy and create a favourable environment for women from all these levels, economic, social, political, religious, cultural, legal, and environmental, in order to increase entrepreneurship from the point of view of holistic development of women.
- (xi) Especially, it is necessary to set up a separate entrepreneurship training center for women to master entrepreneurship.
- (xii) It is necessary to provide working capital in the future by providing access to independent capital to women.
- (xiii) It is necessary to give reserved space to women for setting up industrial estates as well as to give priority to providing infrastructure and provide concessions and subsidies in the future by providing credit facilities.

Conclusion :

It is necessary to get society out of the stereotyped mentality. Instead of keeping the mentality of keeping women stuck in a certain frame, their ideas and efforts of innovation should be encouraged. With the help of policy changes and technology, it is definitely possible to reduce the current gap between men and women in the professional world. The social environment is changing now. Women are starting to take their own decisions. They have started choosing the field of work according to their own preferences. These changes in traditional structures are the first step in the process of eliminating gender discrimination. This fundamental change in thinking can be an important factor in accelerating entrepreneurship among women. Similarly, this process will be important in terms of gender equality

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Impact of Social Media on Mental Health of Adolescents in School

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Abstract : *Suicide has become more prevalent over the past ten years among all social classes since the world has undergone a huge lifestyle change due to the development of technology. The second most common cause of mortality for young people worldwide between the ages of 10 and 24 is suicide. National Crime Bureau programme. With 1,834 deaths, Maharashtra had the most student suicides in 2021, followed by Madhya Pradesh (1,308) and Tamil Nadu (1,246). Student suicides increased significantly during the coronavirus epidemic in 2020 and 2021, according to the NCRB's Accidental Deaths and Suicide in India (ADSI) report 2021, and have been climbing gradually over the previous five years. The influence of social media on the mental health of adolescents enrolled in Zilla Parishad High Schools in Kolhapur city is the main focus of this study.*

Keywords : *Social Media, Adolescent, Mental Health, School, Suicide*

Significant of the Study- Because it is the time between childhood and maturity and involves significant physical and cognitive growth, adolescence is a crucial stage in human development. However, it is also characterised by psychological and emotional instability. Adolescence is a period of tremendous change in one's physical, intellectual, emotional, and social development. While these changes happen at every stage of life, the tween and adolescent years are when they might be the most challenging. According to a speaker at the American Psychiatric Nurses Association Annual Conference, digital experiences among adolescents could have a significant impact on their mental health and wellbeing.

Today, suicide is a leading cause of death in every continent. The WHO estimates that every year, up to 800,000 people attempt suicide; this figure is different from those who attempt suicide alone, which can occasionally be higher. Suicide is also known to happen at any point in life, with adolescence being the most common time for it to happen. Over the past ten years, as adolescent social media use has increased, so has the suicide rate among young people, with suicide now ranking as the second-leading cause of death for persons between the ages of 10 and 24. Suicidal deaths are described in media reports in a romanticised or dramatic manner, which could encourage more people to commit suicide. The media frequently popularises films and social media posts to inform the public of the growing unrest, which may appeal to teenagers' impressionable and immature minds. Significant attention has been paid to cyberbullying as a potential suicide trigger. It has been determined that it poses a serious hazard to the health of people who have been psychologically harmed as well as a serious health problem for the affected teenagers.

Teenagers' physical and psychological well-being is greatly impacted by social media. Teenagers spend more time on social media, which has an impact on their minds, because it is so easy to access the internet and has engaging information. Children are becoming less socialised, playing video games more, having more arguments with their parents, and using social media excessively, all of which have a negative impact on children's development. Additionally, more kids are secretly earning money through social media and spending it on luxuries. A research study on the effects of social media use on adolescents in Kolhapur city's schools and colleges revealed that they spend too much time there, are more inclined to play games and earn money there, which

results in a lack of socialisation, a lack of communication, loneliness, and an inability to easily form relationships in society. Adolescent pupils frequently struggle with emotional and psychological problems. Many students feel confident in their ability to express themselves through chat or direct messaging but struggle when speaking with parents or close friends in person. They are impacted by social media's virtual content both badly and favourably. However, the majority of students claimed that using a mobile device or social media makes them feel lonely or empty. Additionally, they claimed that using social media causes them to feel angry, frustrated, tired, or uninterested in interacting with others, which disturbs their sleep. Peer pressure also causes them problems because it exposes them to bullying, rumour spreading, and unrealistic views of other people's lives. There are many boys and girls who struggle with despair, anxiety, and insecurities, and it has been noted that suicide rates are rising as a result of people not being able to express their emotions openly.

According to a UNICEF survey, 1 in 7 Indians between the ages of 15 and 24 experience depression. Depression is associated with low self-esteem, difficulty concentrating, and other unhelpful symptoms. These symptoms can impair communication, prevent people from working or studying productively, increase the risk of substance use and misuse, and even cause suicidal thoughts. Teenagers can find information about suicide on the Internet, and suicide clusters (suicide contagion) may result from media coverage of suicides;

Both (Hinduja and Patchin 2018) and (Van Geel, Vedder, and Tanihon 2014) looked into the relationship between cyberbullying and suicide behaviour in American teenagers. The association between internet use and self-harm or suicidal behaviour is connected with high levels of Internet addiction, Internet use, and websites with self-harm or suicide material, according to research by (Marchant et al. 2017) and (Scottye et al. 2016) on the subject (2013).

The Study was Conducted with following Objectives :

1. To study the socio-demographic background of the respondents.
2. To assess the adolescent's social media use and suicidal attempts.
3. To suggest remedial measures for intervention.

Methodology :

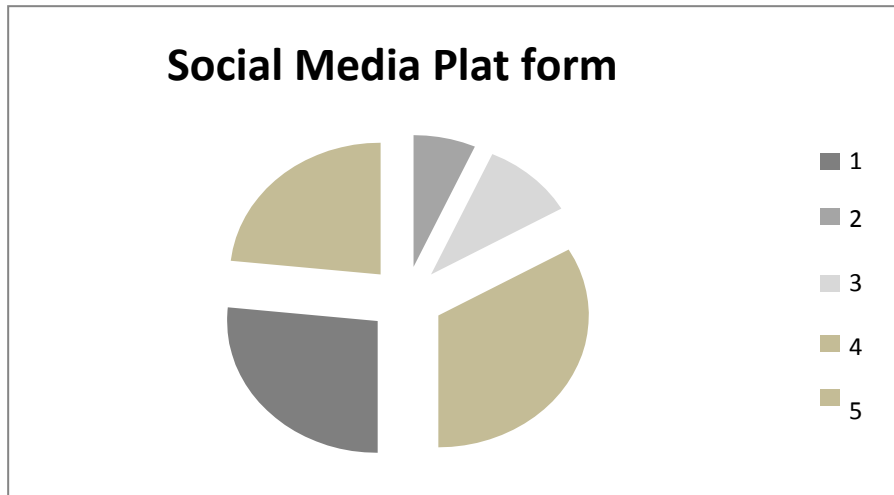
The proportionate sampling approach was used in a descriptive study. Two Zilla Parishd schools in Kolhapur city's eighth and ninth grades each had 20 students, with an equal number of boys (15) and girls (15) in each class. 30 teenagers make up the sample size overall.

The data were gathered using a questionnaire method. The questionnaire was broken down into three main categories: time spent on social media and its effects on mental health; sociodemographic profile of adolescents.

Major findings :

- The data shows 33.3% of the respondents use Dating sites, 23.3% of the respondents are use gaming sites, 10% using Instagram, 13.9% twitter and 11.1% using Facebook other used different social media platforms.
- SocialMedia Platform

Social Platform	Frequency	Percentage
Facebook	0	11.1
Twitter	2	13.9
Instagram	3	10
Dating	10	33.3
Addicted	8	26.7
Gaming	7	23.3
	30	100.0



- The data show 46.7% respondents use social media late night, 36.7% of the respondents use social media in night, 3.3% of the respondents use social media in afternoon, 13.3 % of the respondents use social media at evening.

- **Access Social Network**

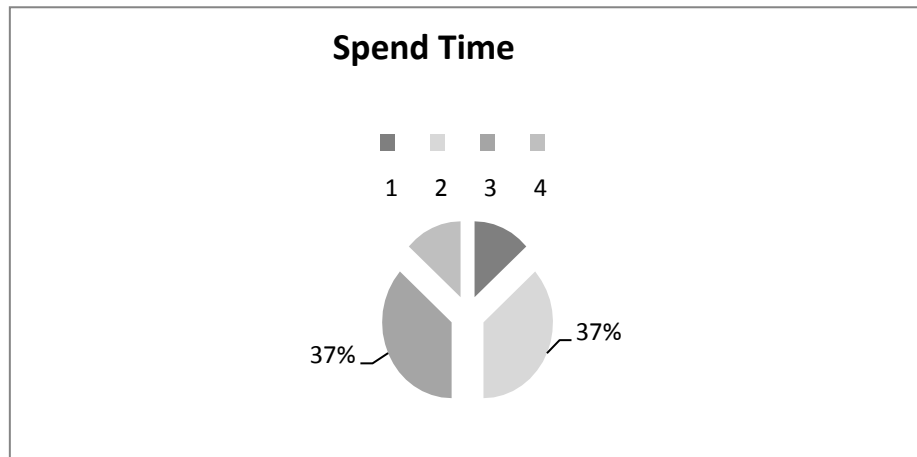
Time	Frequency	Percentage
Morning	0	0.0
Afternoon	1	3.3
Evening	4	13.3
Night	11	36.7
Late Night	14	46.7
	30	100.0



- 25% respondents 2-4 hours use social media, 33.3% are using social media 5-8 hours and other 22.2% respondents use social media more than 8 hours.

- Spend time

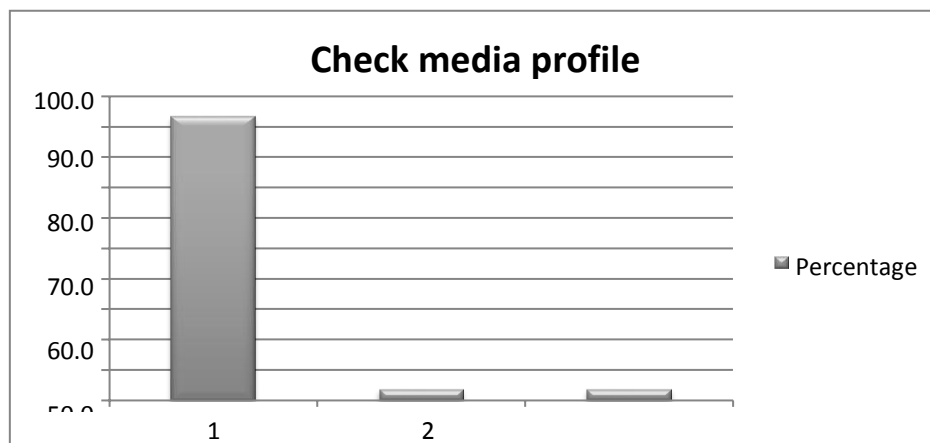
Hours	Frequency	Percentage
0-2 hours	4	13.3
2-4 hours	11	25
5-8 hours	11	33.3
Morethan 8 Hours	4	22.2
	30	100.0



From the collected shows that 72.2% respondents habitual to check social media every half an hour, 16.7% are check their social media every one hour and 2.8 said they check their social media one in a day.

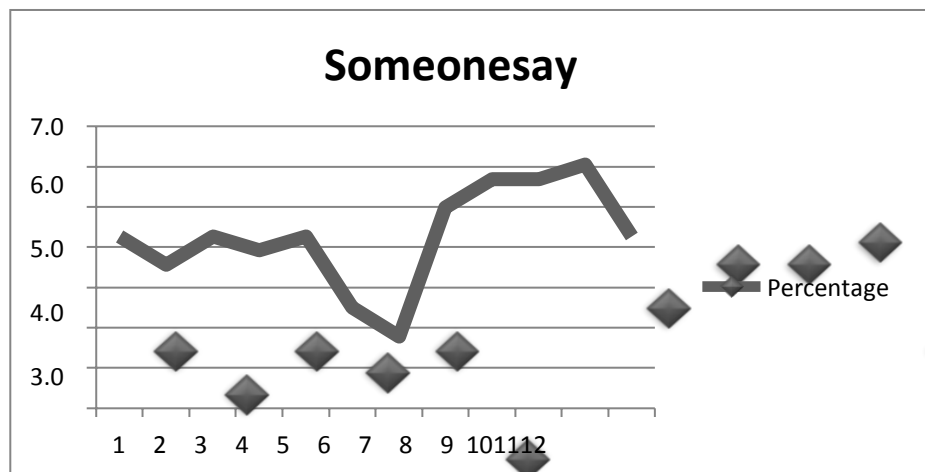
Checking Site	Frequency	Percentage
Every half-an-hour	28	72.2%
Every onehour	1	16.7%
social media use every one hour	1	2.8%
check their social media one in a day.	1	2.8%
	30	100

- The data shows that 61.1% respondents using social media for money making, 30.3% respondents said they using their social media for dating and remaining 3.3 % respondents using social media for information and study purpose.



- 6.1 % respondents said that nobody understands them, nobody feels the way I do, they feel depressed or feeling empty. Their feel like their life is not worth for living.

Have you heard someone say:	Frequency	Percentage
Life is not worth living	12	4.3
My family would be better off Without me	10	3.6
Next time I will take sufficient pills to do the job right	12	4.3
Take my (prized collection, valuables)– I don't need this stuff any more	11	3.9
I may not be around to deal with that	12	4.3
You'll be sorry when I'm gone	7	2.5
I will not be in your way any longer	5	1.8
I cannot deal with everything –life is very hard	14	5.0
Nobody understands me and nobody feels the way I do	16	6.1
There is nothing I can do to make it Better	16	5.7
I'd be better off dead	17	6.0
I feel there is no way out	12	4.3
	144	51.2



- 16.1% of respondents said they feel fatigued and restless after using social media, 13.3% said they feel changes in their weight and appetite, 12.2 % they have changes in mood.

About Post	Frequency	Percentage
Fatigue	10	16.1
Mood status	9	30
Feel changes in their weight and appetite	10	12.2

- Respondents feel depressed after using social media sites.

Have you heard someone say:	Frequency	Percentage
Life isn't worth living	12	4.3
My family would be better off Without me	10	3.6
Next time I will take sufficient pills to do the job right	12	4.3
Take my (prized collection, valuables)– I don't need this stuff anymore	11	3.9
I will not be around to deal with that	12	4.3
You'll be sorry when I'm gone	7	2.5
I will not be in your way much longer	5	1.8
I cannot deal with everything –life is too hard	14	5.0
Nobody understands me – nobody feels the way I do	16	5.7
There is nothing I can do to make it Better	16	5.7
I would be better off dead	17	6.0
I think like there is no way out	12	4.3
	144	51.2

Depression



- 74% adolescents said due to use of social media affects on their academic career.
- 52.2% respondents said due to the use of social media, adolescents feel negative impact on their health.
- According to collected data, 63.3 % respondents have experience related cyber bullying.
- 6% respondents said they feel like killing own self, 3.9% feel demotivated from things, 4.3 said they cannot deal with difficult life situations and 5.7% respondents said nobody is understand them for that reason they feel depressed and anxious.
- 11.5 respondents feel changes in their sleeping pattern and 13.3 said they feel when they Speaking and/or moving with unusual speed or slowness.
- 11% said Withdrawal from family and friends, 12.3 % respondents said they feel diminished ability to think or concentrate, slowed thinking or indecisiveness in their daily life and 5.3% responds have thoughts of death, suicide, or wishes to be dead.

Conclusions :

The study contributes to the conclusion that more frequent use of social media among adolescents is related to a number of mental health issues, that includes depression, issues with one's body image, disordered eating, and externalising issues, among others. Adolescents who use social media without moderation may develop a social media addiction. Adolescents are exposed to fresh ideas and stories on social media more frequently the more time they spend using it. This behaviour gradually develops into an addiction that, if not treated promptly, may have an impact on the child's academic performance, mental health, and even personal growth. Social media can cause suicide and self-harm in addition to being addicting. Teenagers can do anything online to attract attention. They replicate someone else's behaviour without giving it a second thought when they witness them drawing attention to themselves. The relationship between social media and adolescents is strengthening over time as a result of social media's easy accessibility and engaging content, which keeps teenagers occupied physically and mentally for hours. Since teenagers are unaware of the good and bad content on social media, they become entangled in a web of gadgets where it is challenging for parents or educators to exercise control. While media consumption is seen as a useful source of information on the one hand, a new generation is completely immersed in it, which is negatively affecting their mental health.

Suggestions :

- School mental health programs for students, parents and teacher
- Promotion and prevention programs
- Community based programs for mental health
- Peer education program
- Life skill education program
- Teacher training program
- Through suicide prevention program we can increase knowledge of the early symptoms of depression and suicide.
- We can help adolescents for knowing where to get help for themselves or peers who may be at risk for suicide.
- Suicide prevention programs and strategies should be developed.
- School gatekeeper training. In this there could be a staff such as teachers, counselors, and coaches who identify and refer students at risk for suicide.
- General suicide education. All aspects of suicides are included in the regular curriculum. They also have a variety of activities to develop self-esteem and social competency.
- Screening programs. A screening instrument such as questionnaire is designed to identify high-risk adolescents and young adults. They are provided further assessment and treatment. Repeating the assessment can also be used to measure changes in attitudes or behaviors over time.
- Peer support programs. Such programs can be executed in or outside a school. They are designed to improve peer relationships. Increasing competency in social skills among high-risk adolescents and young adults can also be done.
- Crisis centers and hotlines. Volunteers who are trained and paid staff can provide telephone counseling and other services for suicidal persons. Such programs may include a "drop-in" crisis center and reference to mental health services
- Intervention after a suicide. Such programs focus on friends and relatives of persons who have committed suicide. They are partially designed to help prevent suicide clusters.

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The World without Social Media

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Abstract : *Humans are social creatures. Human beings require society to survive. Formerly, food, clothes, and shelter were considered to be basic human requirements. But it appears that social media has added yet another essential demand to everyone's lives. Is it actually a basic necessity, though, is the question? Do we truly need social media to live? This essay will go over the response to that query. This descriptive essay examines the value of social media in modern life and the effects their absence might have on society. Social media now plays a significant role in daily life. Social media plays a significant influence in every area, including the service, industrial, political, educational, and medical ones. But one day we woke up and realized be in the world without social media, what would happen? This paper discusses the impact of the nonexistence of social media on various fields.*

Keywords : *Social Media, Need of human being, Impact of social media, nonexistence of social media.*

Introduction :

The phrase "social media" refers to a computer-based technology that makes it possible to share concepts, ideas, and knowledge through online groups and networks. Social media is internet-based and allows users to share anything quickly, including movies, images, documents, and personal information. Users interact with social media through web-based software or applications on a computer, tablet, or smartphone.

The biggest social media platforms are YouTube, Facebook, Instagram, Twitter, and What's App, among others. Social media usage has significantly increased in recent years. Everyone, from young children to senior citizens, uses social media. The reason is that everyone wants to be entertained, to draw attention to themselves, and to be valued as a person. Although it's normal, anticipating the same things all the time has turned into an addiction. Any form of addiction is detrimental to everyone's life.

Addiction to social media makes users reliant on it for every single everyday decision, which leads to absolute dependence, a lack of knowledge, the loss of decision-making ability, time waste, and a host of other negative effects.

In addition to these benefits, social media has a lot more. Whereas it is impossible in the running lifestyle of today, we can connect to others. It lowers the cost of travel and any other method of communication delivery. We could pick up new skills and vital information about the world. In light of all the benefits and drawbacks, is it possible to envision a world without social media in the present? This paper aims to analyze the response to this query by taking into account how it would affect various sectors.

Literature Review :

Fatemeh Azizi Rostam, Faculty of Psychology Department, Islamic Azad University: In A World without Social Media.

In her study paper, Fatemeh Azizi talked about a world without social media. Consider your life without social media for a moment, she advises. Have you ever pondered why most individuals believe they need or at least need social media? We do this because we want approval. Nobody wants to feel like they don't belong; we all want to feel desired and accepted. Because we are human, that is. You will understand the genuine meaning of private life, which is the first and most significant benefit of living without social media.

Life would undoubtedly be different without social media. It would be necessary to interact with them in person. It would include spending more time in real life and less time on social media. It sounds simpler to request a date via social media, and you won't likely feel as hurt if you're declined. However, making a real-life approach makes you uneasy. You can see your facial expressions, hear the crack of your voice, and feel the rhythm of your heartbeat.

It is usually simpler to play things out behind a screen than to deal with them in person. Using pick-up lines in real life makes the discussion awkward overall. It becomes more difficult when you have 10 seconds to think of a smart, seductive response and are unable to do it before the subject is changed.

An Empirical Study on Effectiveness of Social Media as a Marketing Tool A. Divya1 and S.Bulomine Regi :

People can communicate with one another and form relationships through social media. When businesses use social media, customers may interact with them and get in touch with them directly. Social media revolution has made it abundantly clear that platforms like Facebook, Twitter, Orkut, MySpace, Skype, etc., are widely utilised for communication. The ability for various groups of people to share knowledge and information online is one of the most significant benefits of using social media. It is nearly difficult to create a marketing plan without taking social networks into account. In today's marketing mix in general and in promoting the new product and old ones in particular, social media has grown significantly in importance.

1.3 The impact of social media on youth mental health: Jacqueline NesiNorth Carolina Medical Journal March 2020

Social media increasingly has a key place in the lives of young people as a result of the rapid evolution of the technology landscape in recent years. Both huge new obstacles and fascinating new opportunities have been brought forth by social media. Research is starting to show how particular social media interactions may affect young people's mental health.

Young people's life now revolves entirely around digital technologies. Many children are exposed to screens from an early age; in the US, children under two spend an average of 42 minutes a day using screens. Most young people are thoroughly engrossed in the world of smartphones, computers, and social media by the time they reach adolescence. According to recent nationally representative figures, 88% of teenagers in the 13–18 age range have access to a desktop or laptop at home, while 95% of them have access to a smartphone. In 2018, 45% of US teenagers said they used the internet "nearly frequently," an increase from 24% just three years earlier.

A Study on Positive and Negative Effects of Social Media on Society W.Akram1,R.Kumar, Department of Computer Applications, India

This paper covers every component of social networking, including both its advantages and disadvantages. The emphasis is on a specific area, such as health, business, education, society, and youth. This essay shows how social media will have a broad impact on society.

Objective of the Study :

The objective of the study is to understand the use of social media in different sectors. To study whether use is overwhelmed and what if social media is not there. The effect of nonexistence of social media on the world.

Problem Statement of the Study :

If there is no social media, how would be the world? Is it really going to impact on society and other sectors?

Methodology :

The study is descriptive in nature. The study is based on the secondary data such as articles published, news, research papers and other publications.

Use of social media in various sectors :***Social Media and Business :***

Businesses may reach a large audience with their product advertisements through social media. Advertising a product is highly helpful for new business owners because they cannot afford to spend a lot of money on marketing. One of the new trends for boosting sales on social media is digital marketing.

Social Media and Human Resource Management :

Social networking is being used to recruit the majority of employees. According to their needs, businesses post advertisements on social media, which ultimately lowers the cost of hiring. Consider LinkedIn.

Social Media and Politics :

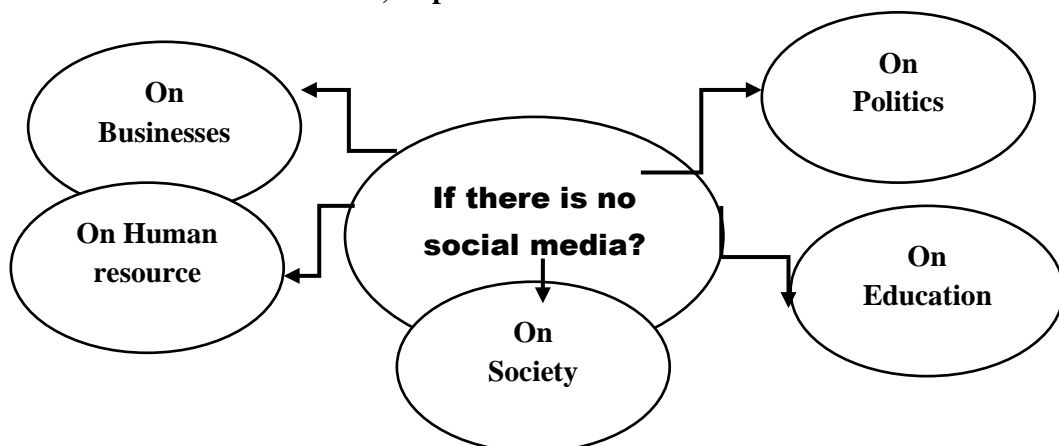
Social media has made it simpler to engage with many people at once, aiding politicians in promoting their parties and views. The majority of political parties use hashtags, blogs, and memes to promote themselves on social media. They use social media to post photos of their charitable events and have a dedicated IT division for social media marketing.

Social Media and Education :

During the lockdown time, the COVID'19 epidemic forced educational institutions to teach their students via video conferences over various social media networks and platforms. Through What'sApp, the students are also advised of their assignments.

Social Media and Society :

Social media now plays a significant part in aiding those in need. The rise of social media platforms has made it easier to identify many types of societal crimes. Additionally, it has aided in gathering volunteers whenever a social need arises. People can now request blood quickly by posting a message on social media about the need for it.

1. If There is No Social Media, Impact on These Sectors.

On Businesses :

Businesses won't be permitted to use social media for marketing purposes, such as digital marketing. If it chooses to use conventional advertising, the cost of its commercials will go up. It will raise both the production cost and the price of the goods. Social media use has many disadvantages in addition to its many benefits for the company. Social media can give a lot of people negative press in a matter of seconds while also promoting businesses and their products. If someone is upset after purchasing a xyz product from xyz firm, they may publish the same thing on social media, which will result in negative exposure for both the product and the company. It's possible that a person is misusing the merchandise or is unsatisfied because of his own perception. However, one negative social media post might result in a significant loss of business. On occasion, it's possible for rivals to post inappropriate content on social media, which could result in a significant loss for the aforementioned organisation.

On Human Resource :

Companies must invest more money in hiring in order to locate the ideal candidate for the job. They must choose different recruitment choices. The amount of individuals will see an advertisement posted on social media, on the other hand. All candidates who are interested will phone, email, and remark. By responding to their enquiries and comments, the business must amuse those who lack the necessary credentials. It has been noted that some people remark negatively on these kind of job adverts, which causes other prospective candidates to get distracted.

On Politics :

Politicians must use conventional methods of advertising. To reach a large number of individuals in a short amount of time, they will need additional workers. The response to post receives on social media may not always reflect the outcome of an election. A politician may have a sizable following on social media, but that doesn't necessarily indicate the real followers. That politician can get overconfident and may lose his seat. E.g. Exit polls. The reputation of that party could be damaged if the opposing party shared irrelevant information or handled any incident improperly.

On Education :

The students won't be able to receive their assignments via social media, and they might not even be able to submit them via social media. They are required to show up for every class and pay attention in class. Overuse of social media is more likely to divert students. The pupils are only concerned with their online reputation, status, likes and dislikes, opinions, etc. Students' primary goal is to study. They represent the nation's future. However, the majority of the students' daily time is spent on social media, which has little real benefit for their life. Students are less likely to read books, show much interest in outside activities, and have less time for parent-child interaction as a result of social media. Students are more interested in uploading their daily updates, photos, and other content than they are in learning. Not just pupils, but teachers and professors too appear to be side-tracked when it comes to education. On social media, they are also interested in sharing their course notes and videos of lectures.

On Society :

If there are no social media people get sufficient time to get connected with the relative's friends etc. The people could be healthier. There will be no stress of getting noticed or liked or viewed. People will get sufficient time to take rest.

The World Without Social Media :

It is quite challenging to picture a future without social media, given all of their benefits and drawbacks. Everyone, from young children (3 to 4 years old) to older folks, wakes up and goes to bed checking for changes on social media.

Social media has many benefits, but we also need to consider its drawbacks. The use of social media developed into an addiction. People are seen to be more eager for social media updates than they are for actual food. Without social networks, you can't upload images of yourself or your day on a daily basis. It also entails that Facebook or Instagram pages will no longer receive likes and comments. No more battling for the most views on your movies and lives, or for the most likes and comments on your photographs. The human eyes, which are creative and entirely natural, are what actually capture the best image of you. People neglected to abandon their real lives because of social media. On social media, they are portraying a false life. Real living entails giving up on Facebook posts about how crazy your life is or how nothing is going right for you. True conversation with your parents about how you feel is a requirement of real life. In real life, having goals and accomplishing them is what makes people happier.

Life would be different if social media didn't exist. The society might live their private and public lives in accordance with their chosen standards. Because of the acceptance or rejection on social media, nobody would suffer from any harm. Reading books would teach young people new things, influence them, and inspire them. They could use this time to work on actual output-focused tasks instead of perusing the web and leaving comments. Without social media, society would be able to get a good night's sleep and wake up with fresh goals to pursue. Without social media, you would have to meet people in person and get to know them for who they really are instead of how they appear on the computer. A new kind of bond is immediately formed, and the bond between the two people grows stronger.

Conclusion:

It is true that no one could survive without social media because it has been ingrained in everyone's lives. However, if we look back to the years before social media, life then was straightforward, and easy. Any family member, friend, or relative who had a birthday was personally wished so that the joy on their face could be seen. Due to the sharing, commenting, personal life exploration, worrying about being accepted or rejected, and the practise of snapping photos of every occasion and sharing them, life has become more stressful in recent years. Such stress was not present earlier. By establishing personal connections, people were connected. Students were more engaged and busy reading and taking notes, playing outside, exercising to improve their fitness, and showing respect for the teaching staff. There were no exchanges of copies or notes.

It follows that the world would be more beautiful if social media didn't exist. We shouldn't compare ourselves to others since doing so compels us to measure ourselves against unattainable standards, which leads to depression, low self-esteem, and low self-confidence. With more free time, we may spend it with our loved ones, friends, or devote it to improving our own health and wellbeing. We could start a new activity, apply for a new position, get a new certification, work out, or take care of ourselves.

Without social media, we would be exposed to less false information, which would lower our general levels of dread, anxiety, and sadness.

But it doesn't mean that we should stop using social media, considering its advantages we should limit the use of social media. Social media is for us we are not for social media.

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The Impact Of Social Media On Youth Mental Health: Jacqueline Nesi North Carolina Medical Journal March 2020.

Advertising, Publicity, and use of Social Media for Marketing of Tourism Products with Reference to Kolhapur District

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***Abstract :** Social media has been playing a great role in our every day's life and in every industry, it plays a crucial role in one or other way. Tourism industry also as it helps in easy decision making for Tour Operators & traveler through the information available on different social networking platform. This paper provides an informative survey framework – media for promoting tourism, social media for promoting tourism.*

***Keywords :** Social Media, Tourism, Travel, Tour Operator, Marketing, Business, Promotion*

Introduction :

The Strategic Marketing Plan hopes to expand the scope of the state's strategic marketing efforts by collaborating and forming cooperative alliances with the culture and tourism industries as a whole, including the arts, history, film, and tourism industries. Tourism is a term that refers to a set of events and customers. The advantages and disadvantages of marketing these experiences to potential customers effectively.

Market planning in the fifties and the sixties was not really feasible because the base of Indian tourism was narrow. The resources for promotion were even more limited and, tourism being a new industry, personnel was not well trained. For preparing any successful marketing plan, we deal with four variables, popularly known in the marketing jargon as the four Ps.

Product : It means attractions or tourist resources that a country can offer- beautiful monuments, scenic beauty, beach and mountain resorts, transportation services, good hotel accommodation, polite and friendly people, etc.

Price : It implies the optimal rates at which the tourism product can be sold.

Place : Most suitable distribution channels. In other words, the markets where the product should be sold and the network through which it is sold.

Promotion : It implies the communication process, public relations, advertising, promotion, etc. Advertising has several inherent advantages in this method. The biggest advantage is its wide coverage. Advertising is especially appropriate for communication with a large number of prospective purchasers of a commodity or a service. A uniform sales message is directed towards all prospective purchasers. An advertisement can be placed before a large number of prospective customers as compared with the efforts of a salesman. Frequency is another advantage. It can make its appeal more frequently, whereas the calls of salesmen are usually not so frequent. Another advantage is its find difficult to interview, owing to lack of interest, or inaccessibility to salesmen. The advertisement may reach such prospects through many types of media and under a variety of circumstances, and may thus attract their attention and arouse their interest. Lower cost is another major advantage. Large numbers can be reached economically, i.e. at a lower cost per contact than in any other technique available.

Advertising may be used to do a variety of selling tasks. A great deal of advertising attempts to win acceptance for the product. Such advertising may produce few specific demands for the advertised brands, yet when retailers display or show for the advertised goods they sell more

readily than non-advertised ones. Therefore, retailers often hesitate to handle non-advertised goods unless they are obtainable at low prices. Advertising thus directly stimulates sales to retailers. Some direct mail and periodical advertising attempts to make sales by requesting readers to forward orders accompanied by the necessary payment. When the number of potential buyers is small and when they are widely scattered, it could be extremely costly to reach them through salesmen. Advertising then becomes the most economical means of doing the entire sales job.

The advertiser should give careful attention in planning to the selection of the medium or media especially adopted to his needs. The selection will depend upon the factors like the area to be covered, the type of audience to be reached, the appeals to be used and upon the services and facilities of the particular medium in relation to costs. The important factors which influence the media selection are the media habits of the target audience; product characteristics; and cost of the media.

Objective of the Study :

The main objective of the study is to assess the advertising, publicity, and use of media for marketing of tourism products with reference Kolhapur district. The other specific objectives are as follows-

1. To analyze the role and effectiveness of media towards promoting tourism in Kolhapur district with respect to; Tour Operator
2. To examine the factors responsible in deciding satisfaction quotient of tourists, visiting the different tourists places; and
3. To suggest integrated promotional frame work of marketing tourism products and services in India.

Research Methodology :

Descriptive methods of study were used for this research paper and for data collection the questionnaires’ technique and observation method were being used. The Tour Operators were covered for the present study in the Kolhapur district.

- a) Primary data was collected from being through questionnaires and interview schedule & interview method.
- b) Secondary source collected from Kolhapur district gazette, socio-economic abstract of Kolhapur, and internet. Collected data were tabulated and presented in the appropriate form

Sample size- The tour operator has selected for the present research study existing in the Kolhapur district. 30 Tour operators was chosen from Kolhapur.

Social Media For Advertising And Promoting Options :

There are many social media options where tourists (customers) can search, interact and share information with other users. There, in the table below, we can see some of the interactive communication options that are now available.

Communication Options	
Website	Companies must design web sites that embody or express their purpose, history, tour products and vision. The key challenge is to design a site that is attractive at first sight and interesting enough to encourage repeat visits. Dedicated websites for mobile devices are on the increase.
Social Media	Companies are embracing social media because of its potential for engagement and collaboration with consumers. Social media advertising will yield relatively stronger results because of its ability to tightly target

	audience based on social media activity.
Mobile Marketing	Mobile phone marketing will become increasingly important. Smart phone use in particular is growing amongst travelers.
Internet Specific Ads and Videos	With user-generated content sites such as YouTube. My space video and Google Video, consumers and advertisers can upload ads and videos to be shared virally by millions of people.
Display Ads	Display ads are small, rectangular boxes containing text and perhaps a picture that companies pay to place on relevant web sites. The larger the audience, the more the placement costs.
Microsites	A microsite is a limited area on the web managed and paid for by and external advertiser. Microsites are individual web pages or cluster of pages that functions as supplements to a primary site.
Search Ads	Paid Search or pay-per-click ads represent 40 % of all online ads. 35% of all searches are reportedly for products or services. These arch terms serve as a proxy for the tourists costumers consumption interests and trigger relevant links to product or service offerings alongside search results from Google, MSN and Yahoo! Advertisers pay only if people click on the links.
Online Communities	Many companies sponsor online communities whose members communicate through postings, instant messaging and chat discussions about special interests related to the tour products.
Blogs	Blogs are usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video. Most good quality blogs are interactive, allowing visitors to leave comments and even messages each other.
E-mail	Email uses only a fraction of the cost of direct mail campaign.

Review of Literature :

The review of literature has got it is by any monographic work because it provided information about the different angles through which the subject is handled by others. Some studies have investigated the topic of digital marketing for the tourism industry. The property's details are listed below.

Karatzas (2010) analyzed the mobile web tourism applications in modern times. The study revealed that people had relied upon web technologies in all walks of life including tourism. The scholars noted that the new technologies had influenced the developers to provide tourism-based web services. The researcher recommended that policymakers provide web services for tourists.

Morrison et. al. (2004) researched the role of digital communication in tourism management. The study revealed that online tourism communication was based upon the unique characteristics of the tourism product. The scholars observed that the tourism product. The scholars observed that the tourism websites (at both the destination and hospitality level) dealt with issues related to website functionalities including completeness, quality, scope, and performances by using different methodologies and outcomes.

Prodan (2017) analyzed the application of digital technology for travel and tourism in America. The study revealed that travel and hospitality stakeholders had adopted digital marketing in modern times the researcher pointed out that new technologies had enabled the users to understand the travel destinations and interact with travel consumers. The researcher suggested that new digital technologies should be adopted to boost the travel and tourism sector in the new millennium.

Rasingeret. Al. (2007) studied the role of smartphones and mobile devices in tourism management. The study revealed that smartphones and mobile devices had enabled travelers to gain easy access

to information all the time and everywhere. The scholars reported that these new devices had also enabled the travelers to understand new travel opportunities and avail better services.

Zivkovicet. Al. (2017) assessed the impact of social media on tourism management in modern times. The study revealed that modern tourism had relied on ICT for publicity, trade, and customer relationships management. The researchers reported the improvement of social media and adapting in the tourism industry is the core concern of tourism marketing activities. The researcher suggested that tourism should be developed based on proper engagement with tourists and multichannel integrated communications to gain good experiences.

Data Analysis & Interpretation :

Media For Promoting Tourism :

Social media has bought the shift from traditional means to use of social portals and websites. What differentiates social media from traditional media is user generated contents and user participation. Social media serves as an easy source to share the information and has easy and wide reach. Traditional media is one way communication whereas the social media provides an opportunity to interact and share views and experience about a particular situation or the place. Social media helps in creating communities of like minds are free to share their viewpoint which can be helpful for other travelers. As the number of internet users increased it has bought significant impact on the business too.

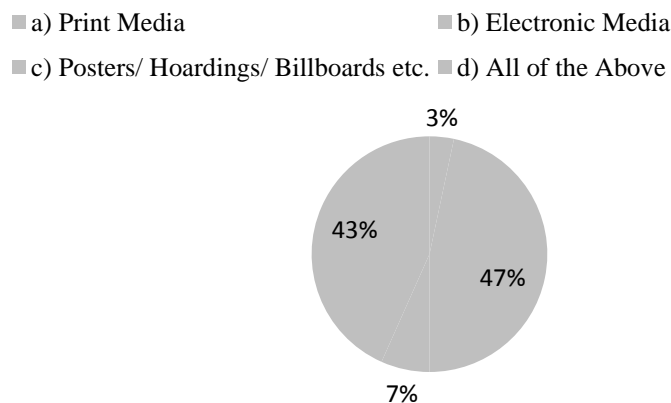
Table No. 1 : Media wise distribution by Promoting Tourism

Media	Frequency	Percentage (%)
a) Print Media	1	3
b) Electronic Media	14	47
c) Posters/ Hoardings/ Billboards etc.	2	7
d) All of the Above	13	43
Total	30	100

The above table indicates that the media for promoting tourism.

➤ **Graphical Representation**

Media for Promoting Tourism



When we analyzed media for promoting tourism of advertising we find that most of the tour operators used the electronic media platform. Which is about 47 percent of tour operators used

electronic media. Were 43 percent is all types of media platforms used in advertising and print media used were 3 percent. Posters/ Hoardings/ Billboards using are 7 percent.

Social Media For Promoting Tourism :

Social media marketing is a form of marketing that involved creating tour packages and sharing content through the online network to achieve the promotional goals for their tour business. Social media marketing includes activities such as posing text and image updates, videos, and other content through tourism business social media accounts that ultimately drive tourism engagement. Facebook in particular has a great effect over consumer choices especially in the travel sector

Table No. 2 : Classification of Social Media for Promoting Tourism

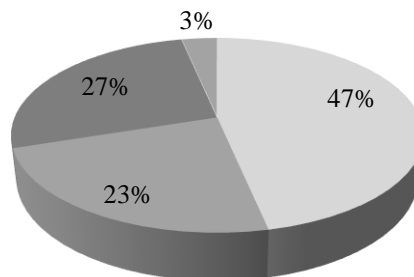
Media	Frequency	Percentage (%)
a) What’s app	14	47
b) Facebook	7	23
c) Instagram	8	27
d) Twitter	1	3
Total	30	100

The above table informed that the classification of Social Media for Promoting Tourism.

➤ **Graphical Representation**

Social Media for Promoting Tourism

■ a) What's app ■ b) Facebook ■ c) Instagram ■ d) Twitter



When we researched social media for tourism promotion and advertising, we noted that the majority of tour operators utilize What’s an app as a social media platform. While evaluating table no. 4.6, it's used that 47 percent of What's app. 27 percent respondents use Instagram for Advertising & publicity of tourism products. 23 percent of tour operators' respondents have used Facebook to approach the tourists' customers and very low 3 percent of tour operators used Twitter.

The Age Group of Tourists Approached :

The age group of the tourist's customers plays a vital role in various levels of expectations and also their preference and attitudes towards the expectation from tourism services offered by the tour operators.

Table No. 3 : Classification of The Age group of tourists approached

Age group	Frequency	Percentage (%)
a) 18 - 30 years	0	0
b) 31 - 45 years	26	87
c) 46 – 60 years	4	13
d) Above 60 years	0	0
Total	30	100

The above table shows that the information about the classification of the age group of tourists approached.

➤ **Graphical Representation**

The Age Group of Tourists Approached



As per the data, approaching tourists with age group 31 - 45 years old are having more attraction towards tours. Their percent is almost 87 and 13 percent of the age group of 46 – 60 years old were attracted to tours.

Classification on E-Commerce and E-marketing are not applied effectively by tour operators.

Table No. 4 : Classification based on E-Commerce and E-Marketing is not applied.

Rank	Frequency	Percentage (%)
a) Agree	6	20
b) Strongly Agree	10	33
c) Neutral	8	27
d) Disagree	3	10
e) Strongly Disagree	3	10
Total	30	100

The above table indicates that the information about E-Commerce and E-marketing is not applied effectively by tour operators.

➤ **Graphical Representation**

Classification based on E-Commerce and E-Marketing are not applied effectively by tour operators.

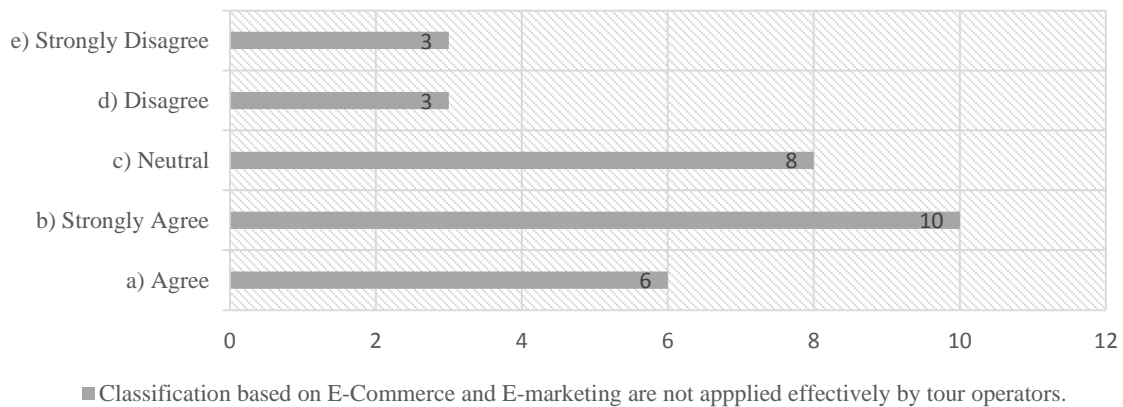


Table No 4.10.3 indicates that 33 percent of the total sample selected Strongly Agree with the statement of E-commerce and E-marketing are not applied effectively by the tour operator in respondents, 20 percent of them just Agree, 27 percent of them Neutral, 10 percent of them Disagree and remaining 10 percent of them are Strongly Disagree.

Findings :

1. Most of the tour operators have used Electronic media & all types of media platforms adopted in promoting tourism. (Table 1)
2. The majority of tour operators have used the What's app social media platform to Advertise and publicity of tourism products. (Table 2)
3. The largest of tour operator respondents were most attracted to the age group of 31-45 years. (Table 3)
4. Most of 33 percent of respondents were Strongly Agreed with the statement of E-commerce and E-marketing is not applied effectively by the tour operator. (Table 4)

Suggestions :

1. Tour Operator must give some suggestions to the government for development of tourism sector.
2. The Development of the tourism sector is not possible only with the contribution of tour operators; it also needs contribution from the government and local people. As tour operators are dependent on tourism, they need to protect the environmental aspects. Statistical data reveals that tour operators join the government in creating awareness among prospective tourists which leads to the development of the tourism industry. The trend remains unchanged in Kolhapur.

Conclusions :

Social media continues to grow. It increasingly influences on many social and economic aspects. Social media plays a very important role in the tourism industry. The tourism industry deals with potential travelers, people on trip, and people returning from a trip and sharing their experience. Tourism is one of the important activities in the present situation. There are many numbers of tour operators are external and some are internal to the tourism activities, but both are essential in tourism. The development of the countries also depends on its tourism sources and some countries mainly depend on tourism for development. Through tourism, a country can introduce itself to the world.

A Tour operator has a direct relationship with tourism activities. When tourists plan a trip, they consult the tour operator to analyze the exactness of the upcoming tour. Providing detailed information to the tourists is also one of the roles of the tour operators. Many tour operators provide tourism services to make some profit but there may be few tour operators who provide services with the view of service and may be development-oriented. Tailor-made packages, as well as readymade package trips, are also available with the tour operators. They provide the package tour according to the requirement of tourists. Tour operators mainly depend on tourism. They are supposed to adopt some policies and guidelines which are made by the government. Through the incorporation of policies and guidelines, there may be chances for the development of tourism activities in the Kolhapur district's destinations.

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The Impact of Social Media on Social Work and Development

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***Abstract :** Online technologies, communication and interaction through social media have transformed and totally changed the communication between social workers and service users, those who are engaged in working with clients through social networking sites. The social worker should update and link their knowledge which is related to the professional practice. In doing the practice through online and social media the social worker must retain their commitment to ethical values and critical reflective practice. Development cannot happen in isolation whether it may be in the micro or macro level. So, there is a need for a strong tool to connect people instantly so that the knowledge transfer is never ending and instant.*

Media for development uses to convey messages on issues such as health care, poverty reduction, good governance, environmental protection and community development, and socio-economic and cultural development. Today the world is becoming a small place to live in and share knowledge, and ideas and pass over valuable culture to the next generation, all the above-said things are possible through social networking and media. Every aspect in society has positive and negative externalities so we need to see how these negative externalities can be balanced and surpassed through positive externalities to reach development in all dimensions. For the study, a survey was conducted with 100 samples as primary data.

***Keywords :** Development, Social Network, Externalities, Culture, Media. Networking Technologies.*

Introduction :

Now a days the social work departments and other NGO's recently uses social media and other online technologies for their social practice through videos, e mail, text messaging, telephone therapy and social networking sites, the use of online social worker easily connect with clients and colleagues. Social media comprise platforms to create and exchange user-generated content Sometimes social media are called consumer-generated media (CGM). Social media are different from traditional media, such as newspapers, books and television, in that almost anyone can publish and access information inexpensively using social media. But social media and traditional media are not absolutely distinct. For example, major news channels have official accounts on Twitter and Facebook.

Social media has some or all of these seven function blocks: identity, conversations, sharing, presence, relationships, reputation and groups. Different forms of social media have different points of focus. Social networking service is a set of online sites and applications, which at least consist of three parts: users, social links, and interactive communications. In fact, SNS is a subset of social media, which include the social network.

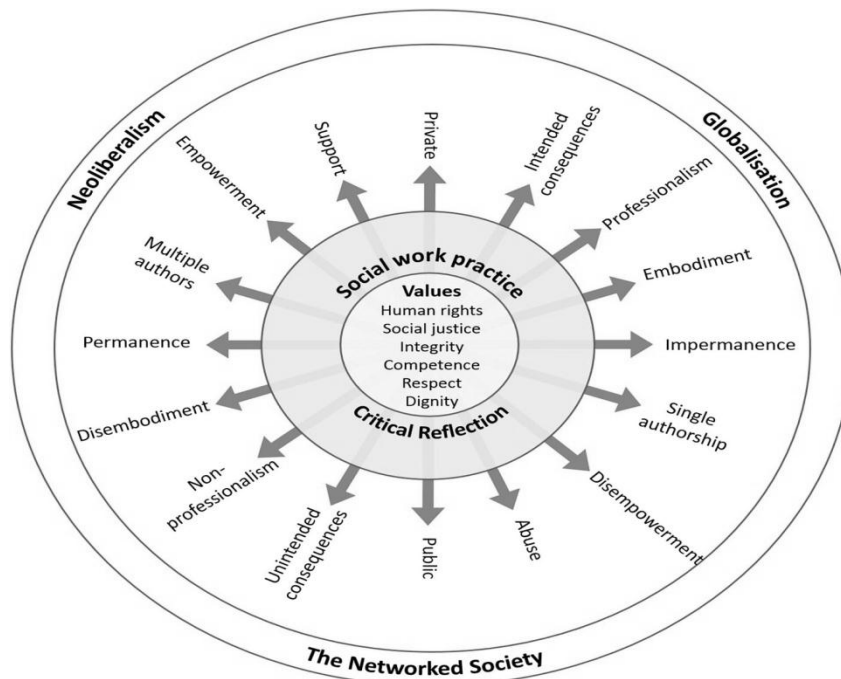
On SNS, communication is interactive. The user's major motivations could be recording one's daily life, providing commentary and opinions, expressing feelings and emotion, demonstrating ideas via text and keeping community. All SNS providers have two core focuses: social relations and user-generated content. In terms of social relations, they might reflect the social network of persons in real life, and build new social connections based upon interests and activities or both. For user-generated content, they provide an easy way to create, share, rank and exchange information.

Conceptualising Social Work, Social Media, Opportunities and Dangers :

Social workers use social media literature to trained the graduates, with an increasing number of educators using social media in teaching. The use of social media by social workers as an advocacy tool, a method of practitioner peer support, and for facilitating client support groups. The use of social media in social work complicates the social work practice it is perversely witnessed the online communication benefits and challenges that create ethical issues and have impacts that can not be understood in simple binary or linear ways. Considering the description of the methodology, literature and a case study to contribute to the development and understanding of social media and its impact on social work and child protection.

Social media provides benefits of social media for communities business groups, individuals and organizations, and also people can develop friendship easily and to research on current affairs. Through social media the children can contact their birth parents and care should be taken. Online communication has created a global audience for example health departments, police departments fire ambulances and other essential services. Because of online communication, interaction and technological developments, these departments can quickly issue warnings. Social media minimizes the stress of young men who speaks online and have dialogues with friends and family members about their problems and difficulties. Because of online interaction, young men become fresh and work stress-free and work happily in their workplace and that results into an increase in productivity. Democratic participation and engagement in politics, coordinate successful political action, strengthen relationships, and be inclusive.

While doing all this social media should take care of individuals at the time of empowering troulbers, stalkers, predators and pedophiles who use social media to access victims. Others bully children and young people online, The social media should focus on terrorist acts and disseminate rumors in disaste situations. The Govt. departments and agencies should control unhealthy practices and unethical matters. The misuse of communication tools increases the surveillance of citizens and online communications. So it is the challenge in front of the social worker to use of social media without causing harm and reflect critically on the incorporation and citizens into everyday practice and day to day life and further, the social worker should protect the benefits and opportunities that social media enables.



Objectives of the Study :

The specific objective of the study is to know the efficacy and effectiveness of social media in the web of society and its influence on various developmental organizations. The objectives of the study are as follows,

- 1) To identify the social media role in development.
- 2) To analyse the impact of social media on development.

Hypothesis :

H0: There is an impact of social media on Development.

H1: There is no impact of social media on Development.

Methodology :

To investigate the hypotheses and research questions, a survey was conducted in multiple directions which cover 100 samples in different aspects with 52 females and 48 males respectively. Respondents were selected randomly with different ages to avoid bias in the study. Among 100 samples 2 persons were not using social networking sites; therefore, the sample size is reduced to 98. Out of 98 samples, 49 respondents belong corporate sector, and 49 respondents belong to the educational sector (students). Correlation and regression analysis were conducted with different variables to know the role and impact of social media in the development sector.

Situation Analysis :

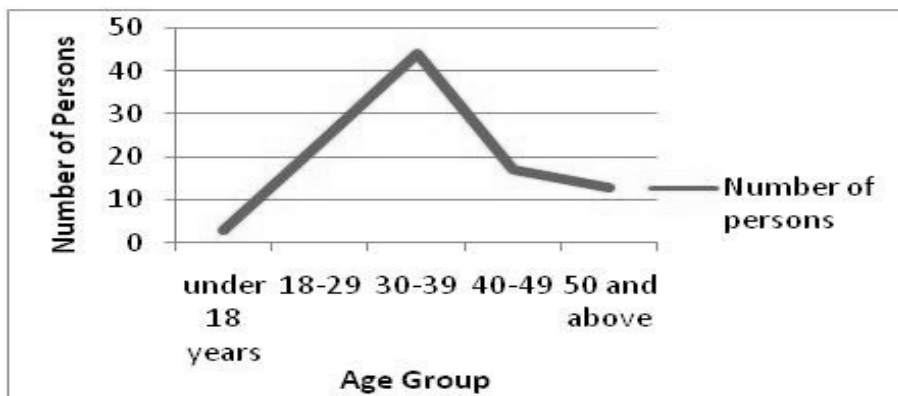


Figure 1. Number of persons using social networks (agewise)

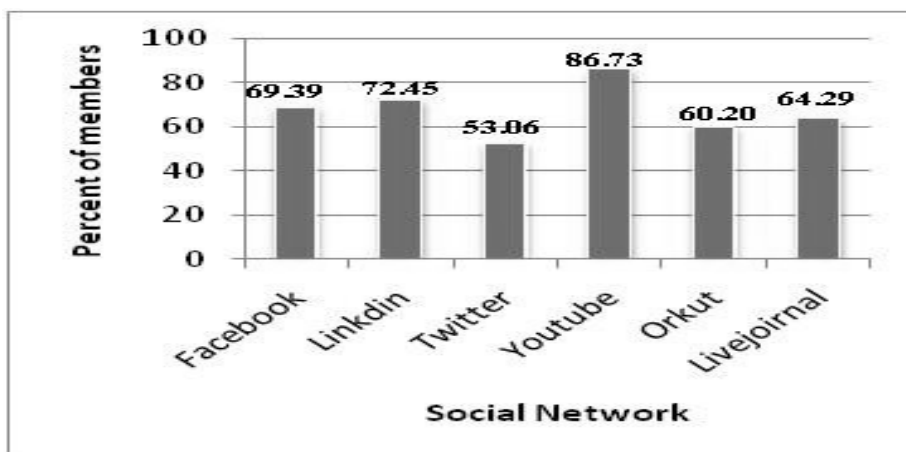


Figure 2. Percent of persons using different Social Networks

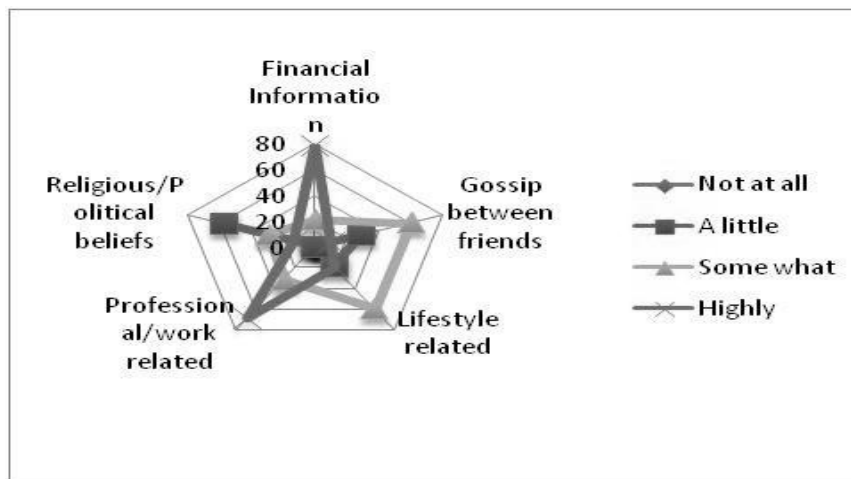


Figure 3. Representation of Purpose of using Social Network

From the survey it is found that the age group between 29-39 was constantly using social networking, followed by 22- 28-year age group. From the analysis, it is found that Out of 98 samples, 86.73% of persons visiting/using YouTube, followed by 72.45% on LinkedIn, followed by 69.39% in Facebook, followed by 64.29% in live journals, followed by 60.20% in Orkut and 53.06% on Twitter which is an indication of development in regard to professional and educational sectors which indirectly helps to improve the country economy.

Among above mentioned social networking, 42.86% & 39.80% of people have more than 100 and more than 200 connections respectively, followed by 17.35% of people with 50-99 connections. And it is found that 56.12% of people were joined up to 10 communities, 39.80% of people were joined 11-50 communities and 4.08% of people were not joined in any communities.

It is clearly found that 20.41% of people used often to find out information, 71.1% of people use rarely to get opinions, 74.49% of people use rarely to entertain themselves, 75.5% of people use rottenly for socialize purposes, 81.63% of people use rottenly to stay with friends, 70.41% of people used to share their experience and 60.20% of people quite rottenly use to get freebies. 38.78% of people fairly often using to talk with close friends, 26.5% of people fairly often using to talk with co-workers, 48.98% of people using rarely to talk with families, 53.06% of people fairly often using with friends, 46.94% of people using to talk with the people who lives faraway. 68.37% of people are highly confidential in professional or work-related information and 57.14% of people are a little confidential about Religious or Political beliefs.

People Intensions to use social networks :

From the analysis, it is found that 44.90% of people are joining a community with the intention of getting new connections to build professional networks, and 30.61% of people intention is to know the latest updates or news regarding the community. 54.08% of people participating in professional communities to watch communities' updates and 26.53% of peoples are reader than a commenter, and 14.29% of peoples are actively participating in the discussions. 45.92% of people are visiting the communities for updates and discussions several times a week. 83.67% of people are noticing advertisements on social networks in the last three visits and 16.33% of people did not notice due to the advertisement being irrelevant to their interests. 62.24% of people are visiting the ads to recognize the brand/company/product which will be helpful to

build a professional network to develop their carrier.

From the above analysis, it is found that majority of the people are using social media to build professional contacts and to get information about new innovative things which helps to improve carrier growth and regarding financial information regarding business, etc. To check the significance, student-t test is used. Student t-test is used for the social network which is used by people and reason to use the networks. From test it is found that p-value (0.067) greater than the level of significance ($\alpha=0.05$). So, it is directly said that to accept a null hypothesis that there is an impact of social media on development.

Correlation analysis was conducted to know the association between the intentions of the people to use social networks, it is found that the association between professional networks and financial statements is highly and positively correlated i.e., 0.978. So, it shows that the people who are all using the social network are highly concentrated on professional carrier.

Regression analysis was conducted to know the functional relationship between the age group and the intentions to use social networks. Here also it is found that the p-value (0.087) is greater than the level of significance ($\alpha=0.05$). So, it is directly said that to accept a null hypothesis that there is an impact of social media on development.

Suggestions and Conclusions :

The national and global professional associations should work for the development of social media policies through their employers' social justice and social workers should be responsible for helping citizens understand ethics and realize their citizenship rights. Young people are not interested to communicate via traditional media, nowadays these all people use only online links for any purpose, the majority of social workers for their profession uses and implement online sources instead of the traditional method, but the problem with network is difficult to reach the grass root level. Hence there is a need to do more research into social media to help social workers. They should be trained with rapidly changing technology and cope up with changing communication technologies their use and misuse. Social workers have core values and principles related to human rights, integrity, competence, and respect to deploy online.

- 1) The complexities of online interactions must be informed fully and latest research is essential in this field.
- 2) Social media helps citizens in the form to become digitally, and ethically literate, informing them of issues related to privacy, authorship and so on. While educating the social worker about the possible benefits and dangers of online interaction and communication and also programming the rights of disempowered people in not only face-to-face interaction but also online ones.
- 3) While receiving the material from the audience benefits and consequences of online behavior are considered while placing the order. The privacy consignment limits and professional values are very important factors for online communication.
- 4) When accepting contact from former clients their reference and professional association guidelines should be taken into consideration in making the decisions for contract requests.
- 5) Have a general duty of care towards vulnerable others whether online or not.

From the analysis, it is clearly found that social media is a boon to the development of the economy in building professional networks, and increasing knowledge by utilizing the information related to innovative things in social networks.

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A Study on Stress of Working Parents due to Excessive use of Social Media by their Children in Pune.

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Abstract : *Parents are children's first teacher. Parents help them to choose the best career. They understand the needs of children's and which things keep them motivated and engaged with learning. The working parents because of their job wander outside at home. In the same situation, mobile can help the children's for online learning. It creates obligations including a full-time job. Nowadays school going children's appearing various competitive exams like the National Olympiad exam, the International Competitive exam and other competitive exams. By the reason of these children's have more knowledge of technology and are smart in using social media. There have some benefits of social media like Digital media literacy, collaborative learning, Creativity, Mental health and wellbeing with connecting with extended family and friends. It will be taking part in local and global online communities. It can give children a sense of connection and belonging. Virtual education offers many benefits for nursery to 12th standard students including flexible scheduling, personalized learning and a safe learning environment. For working parents, those benefits seem out of reach for their children's as they worry about balancing job responsibilities with online school. It's difficult for working parents to manage virtual classes with their children. It's difficult for working parents to look after their children's other competitive exams and extra tuition classes. There have some advantages like time management for study, children's can keep time for rest, more time spent with family members, keep time for reading and writing apprehension etc. There should have some disadvantages of social media like chatting with friends, watching various youtube channels, facebook, Instagram, twitter, social advertising, etc. Researcher want to study this topic because so many working parents suffering by these problems. When parents are outside the home or in the office children's spend more time on social media. Throughout this study main objective was to know the stress in working parents due to their children's excessive use of social media and strategies to improve the bonding among parents and children's in Pune. The quantitative research methodology used for the study. There were total of 25 working parents from Pune as respondents involved study intake sheet and data was collected through Google form and respondents' reply also noted through email. The data is processed through the Google platform. Findings and references were noted online.*

Keywords : *social media, virtual education, personalized learning, stress.*

Introduction :

In a nuclear family, when both parents are working they have difficulty managing kids at home. Parents have to report to their respective workplaces. Most of the parents kept their children in daycare, keep maids or keep kids in day-care centers, and even the traditional Anganwadi. With the COVID-19 lockdowns, maids are not allowed to households, and childcare centers are also closed, leaving the onus entirely on the working parents to spend for themselves to take care of their children and manage their work. Belonging to a joint family is providing a backbone to working parents in terms of provision for childcare by other members of the family. When Parents are outside the home or in the office then children spend more time on social media. Social media is a big part of many young people's social and creative lives. Children and teenagers use social media to have fun, make and maintain friendships, share interests, explore identities and develop relationships with family. It is an extension of their offline and face-to-face interactions. Senior citizen and teenagers always connect with friends via social media. Social media can connect children and teenagers to online global communities based on shared interests. These might be support networks for example; for young people with disability or medical conditions, teenagers,

or children from particular cultural backgrounds. They might be sites for commenting on and sharing content about particular interests like games, TV series, music, or hobbies. There are some benefits of social media like digital media literacy, exploring and experimenting on social media can help children build knowledge and skills to enjoy online activities and avoid online risks, collaborative learning, children can use social media to share educational content, either informally or in formal school settings, it starts creativity in children. Children are becoming more creative with profile pages, photos and videos, and modifications for games. It keeps updating children's mental health. It keeps connecting with extended family and friends and taking part in local and global online communities can give children a sense of connection with others. Throughout this study main objective was to know the stress in working parents due to their children's excessive use of social media and strategies to improve the bonding among parents and children in Pune. The quantitative research methodology used for the study. There were a total of 25 working parents from Pune as respondents involved study. Intake sheet and data collected through Google form. Respondents' reply noted through email. The data is processed through the Google platform.

Research Methodology :

Objective of study

The study was to know the stress in working parents due to excessive use of social media reason of online education in Pune

Research questions

1. What are the reason of school going children using social media?
2. Which strategies can apply to reduce the stress of parents?
3. How can keep children away from social media?
4. Which strategies can apply to involve parents in online education?

Scope Of This Research Study: This study is useful for analyzing all parents' attitudes toward social media. Parents will involve in children's studies. They will build up healthy relationships with kids.

Universe of Study: From the Pune area selected both working parents. Respondents have tight work schedules. The majority of respondents working in private set up.

Method of Data Collection: Planned to collect a total of 25 respondents. But the limitation of time collected information from 25 parents through Google form.

Data Interpretation : Through Google Forms data was collected.

Research Design: The researcher use "Descriptive research design" for this study

Sources of Data: Researcher used a secondary source of data for data collection.

Operational Definitions

Social Media: The term social media refers to a computer-based technology that facilitates the sharing of ideas, thoughts, and information through virtual networks and communities. Social media is internet-based and gives users quick electronic communication of content, such as personal information, documents, videos, and photos. Users engage with social media via a computer, tablet, or smartphone via web-based software or applications.

Stress: Stress is a feeling of emotional or physical tension. It can come from any event or thought that makes you feel frustrated, angry, or nervous feelings. Stress is your body's reaction to a

challenge or demand. In short bursts, stress can be positive, such as when it helps you avoid danger or meet a deadline.

Excessive use: Excessive usage means a level of use of a Product or System that is greater than the normal usage level. Excessive usage means usage more than the maximum possible usage.

Working Parents: A working parent is a father or a mother who engages in a work life. Contrary to the popular belief that work equates to efforts aside from parents' duties as childcare providers and homemakers, it is thought that housewives or househusbands count as working parents.

Review of literature:

Ankit Kumarsiha, Survipatra published in Indian Journal of Psychiatry journal (3 rd September 2021). Screen media use by children has been a subject of constant concern by parents, teachers, pediatricians, psychiatrists, and policymakers. The disadvantage of its misuse often shadows media use in terms of its educational and communication opportunities. Adding to the concerns is that excessive screen media use is associated with poor physical and mental health. In the pandemic situation, school closures, and online classes have increased media exposure to children. Preventing risky situations has prompted health agencies and professional societies to issue guidelines for safe media use. Parents in their day-to-day life understand this problem and try to know the advantage and disadvantages of media. Whether working from home or outside the home working parents face more complex problems. This point discussed the problem and the possible solutions for parents' stress. Parents are already under the burden of official work and childcare. In a nuclear family, when both parents are working and need to report to their respective workplaces, childcare was provided by maids, creches, day-care centers, and even the traditional Anganwadis. Belonging to a joint family is proving a boon to working parents in terms of provision for childcare by other members of the family. They learn from their parents how to balance work-life situations. Working parents provide a better lifestyle for their children. Children start learning the value of time and sharing responsibilities. These opportunities ultimately help them become more mature with adaptive life skills.

Ankit Kumarsiha, Survipatra published in Indian Journal of Psychiatry journal (3rd September 2021), Haruessampasa-Kanying Gary S. Goldfield Mila Kingsbury, Zahra Claybornelan Colman published an article on social media use and the parent-child relationship. He says about a cross-sectional study of adolescents in the Journal of community psychology on 28 November 2019. They examined the association between social media use and the parent-child relationship. Data says that 9,732 students aged 11–20 years were obtained from a provincially representative school-based survey. Heavy use of social media was associated with negative relationships between mothers and children. There were no significant associations between regular use of social media and parent-child relationships. These findings suggest that heavy use of social media is associated with negative parent-child relationships.

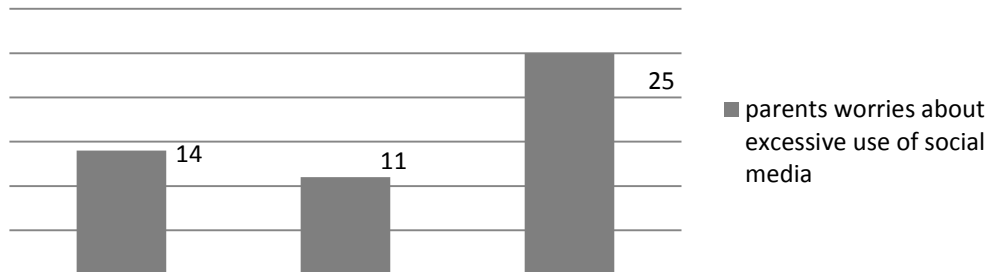
Hilun Ho, WalsonsShine, MyoLwin published in their article in January 2017: Social networking sites (SNSs) have become common avenues for young people to share their life experiences with peers. Although prior research on the media effects of SNSs. It has shown how online communication on SNSs promotes various volitional behaviors, current understanding is limited with respect to how young people's use of SNSs is associated with their consumption experience and materialistic value.

The outcome from study:

Haruessampasa-Kanying Gary S. Goldfield Mila Kingsbury, Zahra Claybornelan Colman published an article on social media use and parent-child relationship 3Hilun Ho, Walson shine, MyoLwin published in their article in January 2017: Social networking sites (SNS)

In this study total 25 parents involved in study. Out of twenty five parents 21 parents are both working and 04 parents are single working.

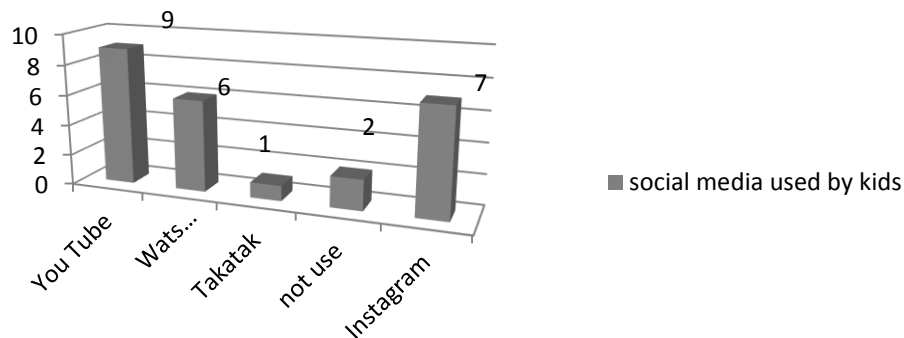
parents worries about excessive use of social media



In this study total of 25 parents were involved in the study. Out of twenty-five parents, 21 parents are both working and 04 parents are single working.

From this study it is shown that out of 25 parents, 14 parents worry about excessive use of children's social media .11 parents said that their children are not using social media.

social media used by kids



In this study there were 25 parents shared their opinion about children use of social media. The 9 children's use you tube, 6 students use whatsapp and Googlechat,one kid use takatakyoutube channel for entertainment and 7 children's use instagram.

Conclusion :

Working parents need to balance work and their parenting. Regulating screen media use in the child requires a predictable and flexible routine of daily activities, including study time, and a plan for physical and creative activities. Screen media use regulation needs parental supervision regarding timings of use, and content regulation with setting up parental controls. Parents can be setting time limits for screen media use and family plans for screen media use. While these are challenging times for parents. They provide a unique opportunity for working parents to supervise their children to grow and learn; parents can use this opportunity to shape their children's future lives.

We can apply some safety essentials for children. Parents suggest them blocking and reporting people on social media. Parents should restrict kids from uploading unnecessary comments and unnecessary posts. Parents who take care of a child cannot click on pop-ups. Some pop-ups that

seem safe can lead to pornography sites or ask for personal or financial information. Parents restrict them from accepting new friend requests. They can accept requests only from people whose identity they know.

Suggestions :

1. Keep communication with children.
2. Spend more time with children.
3. Parents suggest them blocking and reporting people they don't know or people who post upsetting comments or content.
4. If parents notice some pop-ups that seem safe can lead to pornography sites or ask for personal or financial information. Keep restrictions for this site.
5. Parents restricting them from accepting new friend requests for online sites.

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Use of Social Media and its Impact on Youth in India

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Abstract: *The excessive use of social media has increased fiercely among youth. Social media are both full of opportunities and threats. The present study aims to examine the use of social media among youth in the age group of 16-41yrs. The effect of excessive use of social media is tried to correlate with clinically diagnosed depression, anxiety, and divided attention. The paper aims to systematically review and meta-analysis the studies describing threats of using social media and associated risk factors for Psychological Effect among youth. The search returned 55 records, out of which 40 studies were examined in full text and included 25 studies describing 2050 participants. The study narrowed to 14 and those studies described social media and anxiety, depression and psychological effect. The result was classified into categories such as social media & Socio-Economic Impact, Increased risky sexual behaviours and effects on mental state, Impact on academic/Career Growth, Psychological effect and attention deficit among youth.*

Keywords : *Attention, psychological Distress, Depression, Anxiety, Self-Denigrating, Self-Esteem, Influence, Impact, Negative-impact, Social Media (SM) , Bullying, Mental Health, Psychological Effect.*

Introduction :

The Merriam-Webster dictionary defines social media as "forms of electronic communication (as websites for social networking and blogging) through which users create online communities to share information, ideas, personal messages, and other content (as videos)" According to the World Health Organization (WHO), mental health is "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community". As per Ministry of Youth Affairs and Sports 2014, National Youth Policy of India defined Youth as "age group of 15-29 Years"

Social media is having both positive & negative impacts as it mostly focuses on creating awareness, gaining knowledge, organizational and individual growth, and empowerment. On the same page, social media has become the most used and relevant social platform for youth, the elderly, students, professionals, job seekers, job recruiters and to make people frightened, bullying, personal commenting, unit people for good or bad cause as well, on the other hand, users may be using the internet as a surrogate for happiness "though it may lead to "self-perpetuating cycle that could be dangerous if continued."

Research methodology:

Paper aims to review and meta-analysis the studies describing threats of using social media and associated risk factors for mental health among youth.

Electronic databases and platforms were searched for studies published during the last 5 Years (2018,2019,2020, 2021&2022). The search returned 55 records, out of which 40 studies were examined in full text and included 25 studies describing 1057 participants. The study narrowed to 15 and those studies describing social media and anxiety, depression and psychological effect & attention deficit among youth. The result was classified into 4 categories such as social media Socio-Economic impact and mental health, increased risky sexual behaviors and effect on mental health, social media & Impact on academic/Career Growth, social media & Psychological effect

and attention deficit among youth. Homogeneity sources followed in the study, including assessment methods and population studies have been tried to use in the analysis.

Analysis and Interpretation:

Social media use becomes unhealthy when we notice our emotion, relationships and health seems to be hurting (Williamson) It's no secret that we post our best or ideal selves on social media, which can give the impression to others that we are perfectly content and happy with our lives. When we view someone else's post who seems to have it all together, we may draw comparisons between their lives and ours, causing us to feel separate and different from that person and we start self-denigrating which leads to low self-esteem.

The analysis is based on major three parameters such as interpersonal relations, cyber pornography, academic and career performance among the users in the age group of 18 to 30. Data is analyzed, interpreted and presented in the following tables.

Association Between S.M, Interpersonal Relationship and Mental Health:

The below table illustrates the findings regarding social media dependency and its impact on interpersonal relationship and mental health.

Table No: - 1

Sr. No.	Author/ Year/ Country	Title	Age Group	Mental Health (Interpersonal Relationship)	Social Media Dependency
1	Rahul Chauhan, India,2021	Impact of social media on everyday life of youth.	18-29 above	Fear of unsafe of leakage of sensitive /classified information	<ul style="list-style-type: none"> • Out of 200 participants, 45% participant has decreased face to face interaction. • As per the preferable interaction medium, out of 200 participants 56% responded for SM & telephonic rather than face to face interaction. • Out of 200 participants 80.5%respondents gave priority to, friend, classmate & new people rather than family member in the case of interaction in SM. • Out of 200 participants 66.5% agreed that SM has more disadvantages than advantages. • 22.5%, out of 200 participants are feeling detached from family issues and social relationships.

2	Monika Choudhary 2021, India	Media and society: a sociological study of the influence of social media on youth.	18-29	Feeling of guilt afterward devoting all the time in social network.	<ul style="list-style-type: none"> • 57.7% participants out of 300 strongly agreed that, information overload feature of social network, appeal them for continuous engagement. • 24.7% respondent agreed that they ignore bodily need like food and call of nature due to involvement in SM. • 60% of participant agreed of physical difficulties due to involvement with SM
3	Maria Choudhury 2022	Social media usage, its relationship with psychological distress, self-esteem and family functioning among college going youth	18-22	Participant urge to use SM more and more, Mood modification is very often among 9.0% participants. 7.3% of relapse of participants trying to cut down the use of SM. participants faced withdrawal as they troubled to prohibited to use SM.	<ul style="list-style-type: none"> • Out of 600 participants , 58% used to find new people. • 98.7% out of 600 used SM purposely to communicate with friends and family. Family functioning was unhealthy among 62.5% of participants.
4	Saibana.Eranna, 2019, India	Impact of Social Media on youth in cities of Hyderabad-Karnataka Region: A study.	18-30	SM addiction and indispensable habit and high dependency is here among youth. Intelligence declined due to SM was high here 41.68%. Health problems like poor concentration	<ul style="list-style-type: none"> • Study stated that, importance of SM in life for living was high here, out of 950 participants, 26.84% gave very much statement, High importance was 38.42%. • Frequency of searching, communicating and updating SM, out of 950 participants, 33.05% respondents are always on online. • Out of 950 participants, 48.53%, participants used for entertainment, Media. • Diverse entertainment is here of 80% among youth. Financial burden is here due to increased companies

Inference:

Among 4 studies, it is found that significant relationship between the number of social media users and social dependency. Social Media users have decreased face-to-face interaction, As per the preferable interaction medium are SM & telephonic rather than face to face interaction, Users are giving priority to, friend, classmate & new people rather than family members in the case of interaction in SM, SM has more disadvantages than advantages accepted by users, Users feeling detached from family issues and social relationships. In another study, social media users strongly agreed that, the information overload feature of the social network, appeal to them for continuous engagement and agreed that they ignore bodily need like food and call of nature due to involvement in SM. Studied says that, more than half of social media users agreed that they used to find new people and 98.7% purposely communicated with friends and family, and unhealthy among 62.5% of participants. Moreover, the relationship between Social media and mental health, 2 studies found a higher significance of mental health issues being faced by social media users. Social media user facing problems such as 7Mood modification is very often among 9.0% of participants,7.3% of relapse of participants trying to cut down the use of SM,8.7% of participants faced withdrawal as they troubled to prohibited to use SM,10% Extreme level of depression was 40.8%, anxiety 66.8%, Stress 25.7% among the participants. Study shows that, SM addiction and indispensable habit and high dependency is here among youth. Social media increases marketing and internet rates, Intelligence declined due to SM being high here 41.68%, health problems like poor concentration at 19.26%, sleeping disorder21.37%, depression/anxiety/frustration is 10%, Fatigue/stress is 8.63%, Memory disorder is 14.95%.

3.1 Association Between Crime & Risky Sexual Behaviors & Impact On Mental Health: The table below illustrates 5 studies on cyber pornography addiction and sexual assault through the use of SM among Youth. It shows the random search of online sexual content, and the presence of Anxiety, and Depression for inaccessible of sexual content.

Table No-2

Sr. No.	Author/ Year/ Country	Title	Age Group	Mental Health (Crime & Risky Sexual Behaviors)	Social Media Addiction
1	Rahul Chauhan, India, 2021	Impact of social media on everyday life of youth	18-29	Youth, between the age group of 18-29 moderately conscious after using social media	<ul style="list-style-type: none">• Out of 200, participants, 55.5% responded of SM responsible for increase of cybercrime rate in society.• Out of 200 respondents 28% of Youth, do not feel safe about the privacy on SM.• 58%, out of 200 are moderately face problem• 47.5% agreed that SM creates conflicts of different religion and caste.

2	Monika Choudhary 2021, India	Media and society:a sociological study of the influence of social media on youth.	18-29	There is the presence of diminishing impulse control that, 58.4%, out of 300 participants keep thinking about their online experience, even they are offline.	<ul style="list-style-type: none"> • In the vulnerability of Cyber Space 50% participants out of 300 are partially aware. • 92% aware found completely aware of offensive and defaming activity.
3	Maria Choudhury 2022	Social media usage,itsrelationship with psychological distress,self-esteem and family functioning among	18-22	Partial effect on mental health	<ul style="list-style-type: none"> • 72% participant aware of SM and 28% are unaware about SM.
4	Saibana. Eranna, 2019, India	Impact of Social Media on youth in cities of Hyderabad-Karnataka Region:A study.	18-30	Significance related to immoral crime, cyber bullying is here	<ul style="list-style-type: none"> • Study stated that, out of 950 participants, 26,21% responded of increased immoral /crime through SM. • Out of 950 participants, negative impact and SM stated, Waste of time frequency was 36.21%, Cyber bullying was 13.89%, Indecent representation of Women was 7.26%,Spread of fake news is harmful 38.96%. • Out of 950 participants, 36.52% believe in unreliable and fake knowledge.
5	Divya Vinnakota, S.M Yasir Arafat, Sujitakumar Kat,SNGE, 2021, India	Pornography and sexual violenceagainst in india: a scoping review	15-30	Pornography addiction is here. Sexual assault and sex crime through internet is here.	<ul style="list-style-type: none"> • Out of 600 participants, 33.3% of Medical students found more vulnerable to develop more pornography addiction. • 16% study found assed the influence of media awareness on sex crime and significant association between web utilization and assault

Inference:

Among 5 studies, there is a significant relation between the use of social media and risk of sexual behavior, assault and youth facing mental disorders and health issues reduction of impulse control as well. Out of 5 studies, 3 studies showed a significant relationship between SM use and the problem of pornography addiction among youth, cyber bullying and etc. Moreover, the Study stated that, in 26,21% responded of increased immoral /crime through SM, the negative impact and SM stated, Waste of time-frequency was 36.21%, Cyber bullying was 13.89%, Indecent representation of Women was 7.26%, Spread of fake news is harmful 38.96%. 36.52% believe in unreliable and fake knowledge, 33.3% of medical students were found more vulnerable to develop more pornography addiction, 16% study found assessed the influence of media awareness on sex crime and a significant association between web utilization and assault, 47.5% agreed that SM creates conflicts of different religion and caste. In the vulnerability of Cyber Space, 50% of participants out of 300 are partially aware. 8% were found completely unaware of the offensive and defaming activity. 72% of participants are aware of SM and 28% are unaware of SM. Out of 5 studies, 2 studies stated moderate significance among youth refers to the use of social media such as, 55.5 % responded of SM responsible for the increase of cyber-crime rate in society, 28% of Youth, do not feel safe about privacy 58%, moderately.

Association Between Academic / Career Growth & Social Media :

Sr. No.	Author/ Year/ Country	Title	Age Group	Mental Health (Academic/ career)	Social Media Influence
1	Rahul Chauhan, India, 2021	Impact of social media on everyday life of youth	18-29	Moderate help through social media in academic growth	<ul style="list-style-type: none">• 47.5% are disagree that SM use help information related education and career growth
2	Monika, Choudhary, 2021, india	Media and society: a sociological study of the influence of social media on youth.	18-29	Academic & Career significance is higher	<ul style="list-style-type: none">• Out of 300 respondents, 68% respondent agreed, 19.3% neutral and 12.4% disagreed on the SM role in influence and career growth.• Diminished impulsive control faced by 58.4% participants out of 300.• Time track lose by 80.3% participants asserted out of 300
3	Maria choudhury, 2022	Social media usage, its relationship with psychological distress, self-esteem and family functioning among	18-29	Academic/ Career Growth by SM	<ul style="list-style-type: none">• 50% above used for academic purpose. 70.2% used social media tool for assignment.• SM also cause of distraction during study.

4	Saibana Eranna, 2019, India, Impact of Social Media on youth in cities of Hyderabad-Karnataka Region: A study.	Impact of Social Media on youth in cities of Hyderabad-Karnataka Region: A study.	18-29	Partially affected by SM	<ul style="list-style-type: none"> • Out of 950 participants, 39% respondents getting information and knowledge from SM among youth • Out of 950 respondent, only 14.95% used SM for education purpose, Disturbing due to Habits of SM 25.05% among youth. Reading and Studying is declined 28.11% • Out of 950, respondents only 90% used SM for spread non-educative idea.
5	Ankitaashish malpani, 2021, influence of social media on youth with special reference to engagement with facebook and whats app during 2013 to 2018.	Influence of social media on youth with special reference to engagement with facebook and whats app during 2013 to 2018.	15-29	Academic growth correlated with SM	<ul style="list-style-type: none"> • The study stated that there is positive correlated and rank higher in terms of study. Prolonged use of social media not only is bad for eyes, but also damaged brains. It also causes mental, physical and behavioral changes.

Inference:

Among 5 studies, 4 studies stated of partially influence the youth by the use of social media in a negative manner. Such as 47.5% disagreed that SM uses help with information related to education and career growth, 68% of respondents agreed, 19.3% were neutral and 12.4% disagreed on the SM role in influence and career growth. diminished impulsive control faced by 58.4% faced by youth, time track loss by 80.3% of participants, 50% above used for academic purposes, 70.2% used social media tools for assignment., 39% of respondents getting information and knowledge from SM among youth, out of 950 respondents, only 14.95% used SM for education purpose, respondents only 10% used SM for spread an educative idea.

Finding and Conclusions:

- Excessive use of social media has adversely affected the interpersonal relation of young persons with family members, friends, and the community at large.
- The gap between fantasy life and real life is one of the causes of growing anxiety among youth.
- Youth between the age group (18-35) feel unsafe using social media due to fear of leakage of sensitive information

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- Fear of missing out, self-comparisons-denigrating, and cyberbullying, leads to Depression, Anxiety and Stress among youth.
 - Female percentage is high compared to males in browsing social media on a daily basis.
 - The study found that there is a positive association between the increased risk of sexual behavior among youth, through the excessive search of social media and sexual content online.
 - inability of accessing online sexual content is an important reason for suffering from Anxiety, Depression and Stress among others.
 - Per day approximately 100 sexual text messages through social media are sent by youth between the age group (16-29), which diverts the attention from a healthy social life towards risky sexual behavior.
 - 80% of youth completely lose time after entering social media sites which is the cause of attention deficit. It shows that uncontrolled engagement on social media would have a dysfunctional influence on academic and career growth for Youth.
 - The study shows that excessive use of social media and its psychological effect is high between the age group (16-35), after the age of 35 to 41, social media's influence on social, and psychologically is found to be reduced gradually.

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The Impact of Social Media on Education with reference to Tirpude College of Social Work, Nagpur

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Abstract : *In today's advanced technical era, every generation is involved with social media. Social media is nowadays an essential part of everyone's life. Social media platforms such as Facebook, Instagram, Twitter, YouTube, WhatsApp, Telegram, etc give one-tap access to communicate anywhere around the world. These platforms are meant to communicate, share thoughts and interact with people or relatives or socialize yourself. The first social media site "SixDegrees.com" was founded in 1997 by Andrew Weinreich. Social media plays a vital role in every student's life. It promotes self-directed learning, creative learning and helps in collaborative learning. Students must focus on education. Social media has some hazardous effects also but it depends on the usage of students whether they use social media for educational purposes or not. Social media platforms are widely used by college-going students. This study aimed at finding out the positive and negative impact of Social media in the education of UG and PG level students of the Social Work department. This present research paper was based on the empirical study conducted by the researcher during the period of 2021-22.*

Keywords : *Social Media, Learning, Impact, Education, Students*

Introduction :

Dave Willis once said, 'Don't use social media to impress people; use it to impact people.' Social media also referred to as interactive media has a great power to impact people. Social media is a collective term for websites and applications that focus on communication, community-based input, interaction, content-sharing, and collaboration. People use social media to stay in touch and interact with friends, family, and various communities. It is a large part of our everyday lives. The total population of India is 1.40 billion and the active social media users in India are 0.467 billion. The average daily time spent using social media is 2 hours 36 minutes. The first company to create social networks based on web technology was SixDegrees.com. It was the first true social networking site. It was launched in 1997 with most of the features that would come to characterize such sites: members could create profiles for themselves, maintain lists of friends, and contact one another through the site's private messaging system. The five most popular social media platforms (including messaging apps) in India are WhatsApp (534.30 million active users), followed by Instagram (503.37 million users), Facebook (491.53 million users), Telegram (374.40 million users), Facebook Messenger (324.39 million users). Social media is widely used by students for educational purposes and others. Social media plays a vital role in every student's life. It helps to find out the solutions to problems within a few seconds. It boosts the academic performance of students and improves creative elements. The impact of social media on education is becoming a driving factor. Social media has positive as well as negative impacts on the education of students. This research paper will employ primary as well as secondary methods for data collection through a review of literature, journals and previous research papers and a questionnaire survey. This report will be developed using a representative sample of students from Tirpude College of Social Work, Nagpur. This paper focuses on the positive and negative impact of social media on the education of students.

Review of Literature :

An important study was made in our country – "A Study on Impact of Social Media on Educational Efforts in Guwahati City, Assam (2015)" was conducted by Ms. Pratisha Padmasri Deka, Department of Education, Cotton College, Guwahati, Assam. This study is taken from the International Journal of Advanced Research in Education Technology (IJARET). In this study, the researcher focused on the impact of social networking sites on the educational efforts of students

and their dependability on social media for educational purposes. The study was conducted on 40 students of different colleges of Guwahati city from higher education level and used tools i.e., Questionnaire and interview in her study. The study stated that social media has a 75% of positive impact on education and 10 % of negative impact and a 15% no impact on Education. The study also suggested that students should act like a "Good Participants" and not become "An Addict" of SNS and should be aware while using Social Media Sites.

Objectives :

- I. To study the positive and negative impact of social media on education.
- II. To study the student's views on the impact of social media in educational purposes.
- III. To know the benefits of social media in Education.

Methodology :

To meet the objectives of the present study 25 students from Tirpude College of Social Work of Nagpur city from undergraduate and post-graduate level (BSW I, II, III and MSW I, II-year students) were selected as representative samples (i.e., 5 students from each class). The data of the present study was collected through a Questionnaire survey and some previously studied research papers and journals by different authors. The researcher collected necessary information from the sample with the help of a Questionnaire comprising of 10 questions related with the positive and negative impact, usage, Addiction and benefits of social media on education. The researcher also gathered some information through previously studied research papers and collected some statistical data related to the social media of our country through websites.

Findings and Discussion :

While studying the opinions of students through a questionnaire survey regarding hours spent on social media per day, it was found that 70% of students spend 3-4 hours every single day while 30% of students spend 2 hours approximately on social media. Regarding the most used social media platform, it was found that for 75% students, Instagram is the most famous and used platform of social media, while 15% of students use WhatsApp and the remaining 10% use Facebook and Snapchat most.

Table 1: Student’s response on the most used social media platform

Instagram	WhatsApp	Facebook and Snapchat
75%	15%	10%

Question-related to the purpose of using social media among students shows that, 50% of students use social media for communication and interaction with friends, 40% of students use social media for educational purpose, and the remaining 10% of students use social media for exploring different things around the world.

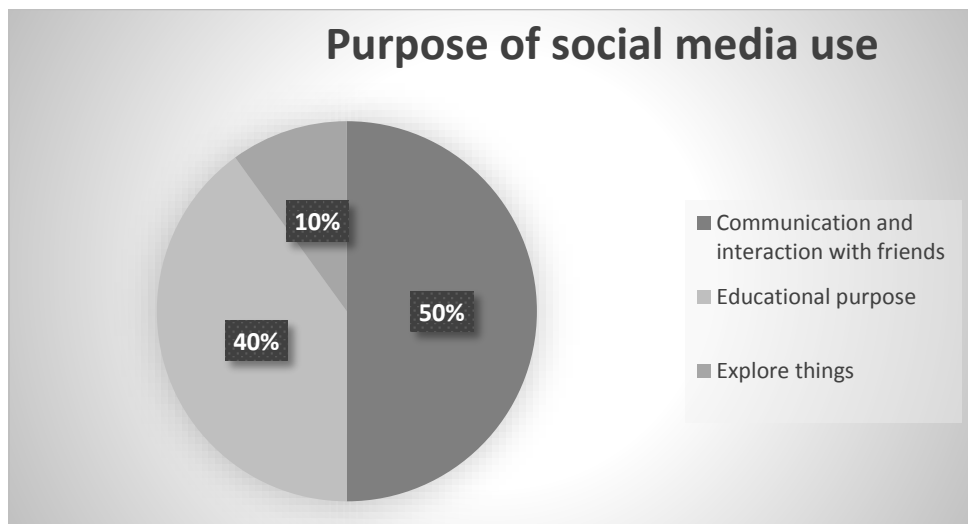


Fig.1 – Percentage of students’ responses for using social media

In response to the positive and negative impact of social media on education, it showed that social media has a positive impact on 85% of students, while it has a negative impact on education for 10% of students and the remaining 5% of students have no impact of social media on their education.

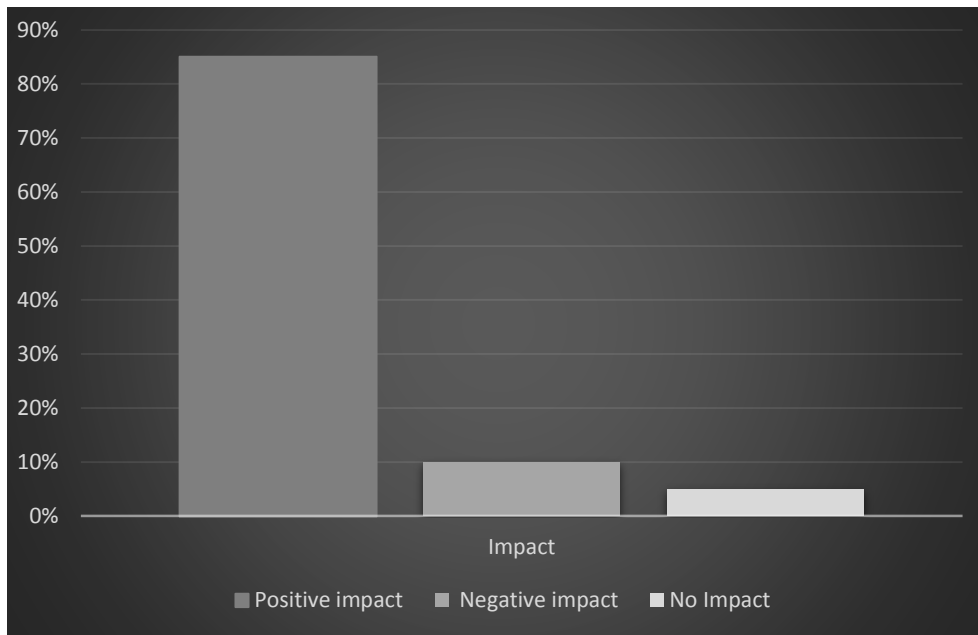


Fig.2 – Students response to impact of social media on education

Positive Impact of social media on Education :

Positive Impact Social media did make the world a smaller place, now we have more information, more knowledge, and better opportunities to use it. Social media improved our ability to absorb information, what would have seemed to be overwhelming to someone 20 years ago is normal to us, we have an extreme ease in processing and we are evolving quickly. Following are the Positive Impacts of social media on Education: -

1. Google and education, Google has helped over 20 million students in their education using its tools.
2. By spending so much time working with new technologies, students develop more familiarity with computers and other electronic devices.
3. With the increased focus on technology in education and business, this will help students build skills that will aid them throughout their lives.
4. Talents got discovered faster, students who were good at programming got their name out there easily, and student who was good in music got their videos out and shared leading them to their dreams.
5. A lot of the students were able to inform the public about their issues – using social media which brought awareness and helped solve a lot of problems.
6. The ease with which a student can customize their profile makes them more aware of basic aspects of design and layout that are not often taught in schools.
7. The ease and speed with which users can upload pictures, videos or stories has resulted in a greater amount of sharing of creative works. Being able to get instant feedback from friends and family on their creative outlets helps students refine and develop their artistic abilities and can provide much-needed confidence or help them decide what career path they may want to pursue.

Negative Impact of social media on Education :

The prime bad effect of social media is addiction. Constantly checking Facebook, Twitter, LinkedIn other social media updates. This addiction could negatively affect other valued activities like concentrating on studies, taking an active part in sports, real-life communication, and ignoring ground realities. There are hundreds of thousands of fake accounts on social networks who are boys pretending to be girls to be friends with girls and in most cases, this leads to embarrassments and disappointments which finally result in depression. If there is awareness about the risk of social media in our community it will not lead to anything bad but there is always a lack of public awareness and as mentioned above that the graph of internet users is getting higher and higher while we are still far behind in the field of education thus public awareness is very difficult in societies with lack of education. Following are the Negative impact of social media on Education:

1. The popularity of social media, and the speed at which information is published, have created a lax attitude towards proper spelling and grammar. This reduces a student's ability to effectively write without relying on a computer's spell-check feature.
2. Many students rely on the accessibility of information on social media and the web to provide answers. That means a reduced focus on learning and retaining information.
3. Our ability to retain information has decreased, and the willingness to spend more time researching and looking up good information has reduced, due to the fact that we got used to the ease of accessibility to information on social media.
4. Students, who attempt to multi-task, checking social media sites while studying, show reduced academic performance. Their ability to concentrate on the task at hand is significantly reduced by the distractions that are brought about by YouTube, Facebook or Twitter.
5. The more time students spend on social sites, the less time they spend socializing in person. Because of the lack of body signals and other nonverbal cues, like tone and inflection, social networking sites are not an adequate replacement for face-to-face communication. Students who spend a great deal of time on social networking are less able to effectively communicate in person.
6. The degree to which private information is available online and the anonymity the internet seems to provide has made students forget the need to filter the information they post. Many colleges and potential employers investigate an applicant's social networking profiles before granting acceptance or interviews. Most students don't constantly evaluate the content they're publishing online, which can bring about negative consequences months or years down the road.
7. Students are having a harder time getting to communicate face to face with people, and are losing their people skills, due to that they are spending more and more time talking from behind a screen.

Conclusion :

Throughout this study, one thing that has remained constant is that interactive media platforms have had a huge impact on education. According to the above study, we came to know various positive and negative impacts of social media on education. Social media is widely used by students for educational purposes and other purpose. Social media is very useful as well as harmful. One can get easy access to all over the world within a few seconds. The study showed that a maximum number of students agreed that social media has a positive impact on education as it motivates creative learning, boosts academic performance, and motivates E-learning through Google Classroom, Google Meet, and zoom, etc. Social media helps to find solutions to our subject-related issues. It helps to share information online with others. It does have some negative impact but it depends on the use of an individual and it can be controlled by using social media most for educational purposes than any other.

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A Study on Psychological Problems Faced Due to Social Media Addiction by College Students with Reference to Tirpude College of Social Work, Nagpur

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Abstract : *Social Media is the most relevant and dependent aspect of today's world. As social media is the dependent aspect, there are more chances of getting addicted to it. Addiction can be both positive and negative according to the usage of an individual. Anything used in excess can cause harm. The aim of this study was to focus on the psychological problems faced by the excessive usage of social media. College students are more dependent on social media and their dependence cause addiction. The study was done on the students of TCSW, Nagpur. The study is emphasized on the causes of Social Media Addiction. Research on social media addiction can help the students to solve their social media addiction problems.*

Keywords : *Media, Television, psychological problems, Facebook, Instagram, Twitter, Addiction Problems,*

Introduction :

Social Media a term which is used worldwide .Checking over social media has become very much common these days. Now day's social media has become a basic and an important part of life. Social Media is new oxygen for one's life. Social Media usage is increasing day by day. Now the basic need of humans is not just only food, shelter, water, clothes and sleep but now it also includes social media. Psychologists say social media addiction is a concerned addiction which actually develop an urge to use social media again and again (Masthi, et al., 2018).

Social media usage can actually change mood of an individual and can cause problems in their day to day lives. If social media used in a proper and a time bound manner can actually be beneficial to one's life. There are many social media addiction apps which students use for their time pass or for their entertainment purposes (Pellegrino et al., 2022). These apps includes face book, instagram, twitter, whatsapp, snap chat, telegram, tinder, happen, LinkedIn, pub, free fire etc.

In the study the researcher found that students are much more addicted to social media apps like whatsapp, face book, and snap chat, instagram. Because these platforms are used for connecting new people and students are using it for their entertainment purpose and to know people. Sometimes these apps usage can give trouble to the user by adding unknown people. Addiction also reflects negative on an individual. Excessive use of anything can cause damage to one's life.

Review of Literature :

Systematic Review Article, Font. Psychiatry Sec. Addictive Disorder, article by Alfonso Pelligerno and Veera Bhatiasevi from Sasin School of Management, Chulalongkorn University, Bangkok, Thailand studied about psychological problems faced by the students. The study is beneficial for the researcher because it emphasis on the excessive usage of the social media addiction on young individual. The study overall gives a view of the mental and psychological imbalance faced by the younger people through the usage of social media. Social media can cause insecurity in the students because of uploading image through editing and then being compared by the actually appearance. This leads to the mental issue of low esteem. Also it causes mental problem of getting addicted to a person via online social platforms which can actually lead to the mental stability of an individual. Students in their free times use the social media only for their entertainment purpose and this entertainment gets in excessive amount and leads to psychological and mental problems.

Objectives :

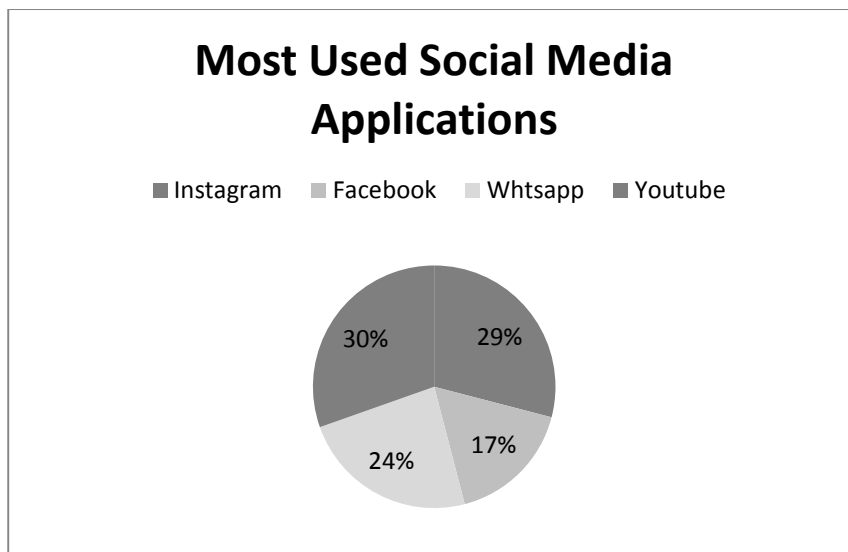
1. To know about the reason of using social media.
2. To know about the addiction reasons of social media.
3. To know about the Psychological problems faced by the students while using social media.

Methodology :

The researcher in the study will use representative technique. The researcher will be taking five representatives from each class for the research. In total there are five classes in the social work department with around strength of forty students in each class. The opinion of the students regarding the research will give the final result. The researcher will prepare a questioner for the findings. And the final result will be represented through master chat.

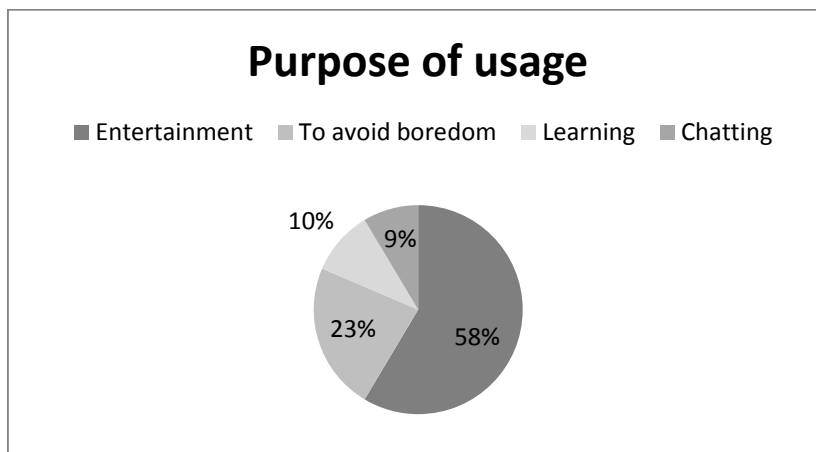
Findings and Discussions :

The finding for the research is shown by:



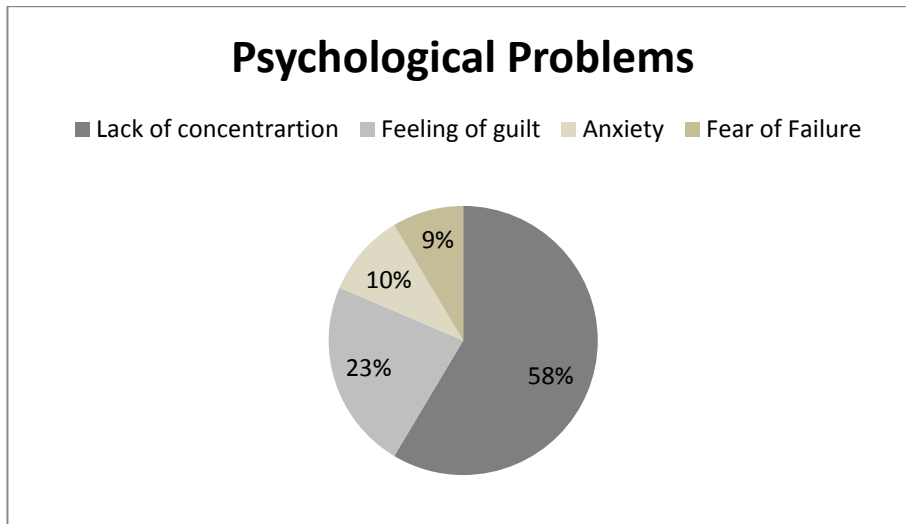
This Pie Graph shows that students use YouTube 30%, while Facebook is used 17%, Whatsapp is used 24%, while instagram is used 29%. This clearly indicates the addiction of YouTube and instagram is more severe than any other apps.

The finding for the research is shown by:



This Pie Graph clearly indicates that the purpose of social media usage is mostly because of entertainment purpose 59% , then it is because of boredom 23% , and because of Learning 10% and the least for chatting i.e., 8%

The finding for the research is shown by:



This Pie Graph clearly indicates that the psychological problem of social media addiction leads to lack of concentration 59%, feeling of guilt 23%, anxiety 10%, and fear of failure 8%. Social Media Addiction because the major reason for lack of concentration in students.

Impacts of Social Media Addiction :

In the further research it is clearly seen that social media addiction is a severe problem for ones mental health and psychological health. Because of social media there is no emergence of outdoor life in students. There is a competition between the youths to compare their lives with celebrities and this also leads to many mental issues. Comparing and showing their fake profiles on social media is also a sign of low self-esteem. There is also a fear of poor body image on social media. And fear of appearing different on social media. Continually usage of video games can affect brain cells just like drugs do; it affects the brain the brain to respond fast. As a result it causes addiction. When students are more into social media there is a lack of face to face communication which leads to poor skill of presenting themselves.

Conclusion :

The study mainly focuses on the psychological problems which student face on excessive usage of social media. Addiction of social media in college students is extreme and it affects the behavioural thinking of the students. The reasons of using social media platforms are mainly the entertainment and also boredom. The young youths are not into engaging offline they are more into engaging online. Addiction of social media applications is major these days. Social Media is a major issue of lowering self-esteem. Excessive usage of anything can cause harm to one's health. Psychologically this is a severe issue which is being neglected by us regarding social media addiction.

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A Study on the use of Social Media towards Achievement of Accessible Election in Goa

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Abstract : *In India as per the census 2011, the population of Persons with Disabilities is 2.68 crore whereas there are 33,012 (17016 male and 15,996 females) Persons with disabilities in the State of Goa. A total of 62,63,701 Persons with Disabilities were registered within an electorate of 910 million in India, whereas 7474 were registered in Goa as on the 2019 Lok Sabha Election.*

The main prominence of the study is to examine the use of social media towards the achievement of an Accessible Election in the Goa State Legislative Assembly General Election 2022 held on 14th February 2022. The data available in the office of the Chief Electoral Officer, Goa was used for the study.

Office of the Chief Electoral Officer Goa conducted State Legislative Assembly General Election 2022 and social media played a vital role in achieving the milestone of Accessible Election for Persons with Disabilities, Transgender Electors. Facebook, Twitter, Instagram, WhatsApp, and YouTube, were predominantly used to disseminate information about the Accessibility and the Assured Minimum Facilities

Sign Language Interpreter was involved to disseminate information and all the activities carried out were uploaded on social media to reach out to the Person with Disabilities Electors.

The overall impact of the use of social media is 9599 Person with Disabilities Electors were tagged. Transgender were enrolled first time as electors who cast their votes.

Introduction :

In India as per the census 2011 the population of Persons with Disabilities is 2.68 crore (or 2.2% of the population) whereas there are 33,012 persons with disability in the state of Goa. Out of which 17016 are male and 15,996 are females. The disability-wise population in the State of Goa are Locomotors disabilities -5578, Visually impaired - 4964, Speech impaired -5272, Hearing impaired-5347, Mental Illness -1675, Person with Multiple Disorder-2575, Intellectual Impairment-1817, Other disabilities (not specified) -5784. A total of 62,63,701 PwDs were registered within an electorate of 910 million in India where as 7474 were registered in Goa as on 2019 Lok Sabha Election.

21 disabilities are covered under the Rights of Persons with Disabilities Act 2016 which includes

1. Leprosy cured Person
2. Person with Cerebral Palsy
3. Person with Dwarfism
4. Person with Muscular Dystrophy
5. Person with Acid Attack Victim
6. Person with Locomotor Disability
7. Person with Blindness
8. Person with Low Vision
9. Person with Hard of Hearing
10. Deaf Person
11. Person with Speech and Language Disability
12. Person with Mental Illness

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13. Person with Intellectual Disability
 14. Person with Specific Learning Disabilities
 15. Person with Autism Spectrum Disorder
 16. Person with Hemophilia
 17. Person with Sickle Cell Disease
 18. Person with Thalassemia
 19. Person with Multiple Sclerosis
 20. Person suffering from Parkinson's Disease
 21. Person with Multiple Disabilities including deaf blindness

Section 11 of Chapter II of the Act (RIGHTS AND ENTITLEMENTS) talks about accessibility in voting stating that the Election Commission of India and the State Election Commissions shall ensure that all polling stations are accessible to Persons with Disabilities and all materials related to the electoral process are easily understandable by and accessible to them.

The theme of the State Legislative Assembly General election was Inclusive, Accessible, Participative as well as Festive. Chief Electoral Officer Goa made an effort to reach out to all sections of the Society with special reference to Person with Disabilities, Senior citizens, Transgender, Sex Workers etc and there was utmost use of Social Media to achieve the milestone of the Accessible Election. Facebook, Twitter, Instagram, WhatsApp, and YouTube, were predominantly used to disseminate information about the Accessibility and the Assured Minimum Facilities.

Un Convention on the Rights of Persons with Disabilities, 2006 (CRPD)

Article 21: Freedom of expression and opinion, and access to information States Parties shall take all appropriate measures to ensure that Persons with Disabilities can exercise the right to freedom of expression and opinion, including the freedom to seek, receive and impart information and ideas on an equal basis with others and through all forms of communication of their choice, as defined in article 2 of the present Convention, including by:

- (a) Providing information intended for the general public to persons with disabilities in accessible formats and technologies appropriate to different kinds of disabilities in a timely manner and without additional cost;
- (b) Accepting and facilitating the use of sign languages, Braille, augmentative and alternative communication, and all other accessible means, modes and formats of communication of their choice by persons with disabilities in official interactions;
- (c) Urging private entities that provide services to the general public, including through the Internet, to provide information and services in accessible and usable formats for persons with disabilities;
- (d) Encouraging the mass media, including providers of information through the Internet, to make their services accessible to persons with disabilities;
- (e) Recognizing and promoting the use of sign languages

Key Concepts :

Social Media :

Social Media is often considered as a platform that facilitates information sharing and participation (Steenkamp & Clarke.H.2014)

Kietzmann et al.(2011) defined that Social Media is like mobile and web-based technologies it is designed to create highly interactive platform through which individuals and communities

share,co- create, discuss and modify User- Generated Content (UGC)

Social Media Platforms can broadly be divided into four types

- Social Networking Sites-Facebook, Linked, Google +
- Micro blogging Sites-Twitter, Tumblr
- Photo sharing Sites-Instagram, Snapchat, Pinterest
- Video sharing Sites -YouTube, Facebook live, Periscope, Vimeo

Person with Disability :

As per the Rights of the Person with Disabilities Act 2016

“Person with disability” means a person with long term physical, mental, intellectual or sensory impairment which, in interaction with barriers, hinders his full and effective participation in society equally with others;

Assured Minimum Facilities :

Assured Minimum Facilities are the facilities to be provided at polling station for PwD voter which includes Availability of Ramp with gradient 1:12, Proper pathway from Entrance to voting compartment which have wheelchair accessibility, Lighting, Proper signages, Accessible Toilet, Access to safe drinking water, helpdesk, Parking facilities, transportation facilities, Magnified glass, Braille Epic card to all visually impaired voters, Accessible road to polling Station, Access to material for voters, Tactile, booth volunteers etc.

PWD APP :

In order to facilitate the Persons with Disability, the Election Commission of India developed an android based mobile application, the PWD App. An eligible Person with a Disability or reduced mobility / physical functions can get enrolled in electoral roll by declaring themselves as a Person with a Disability. Upon receiving the request from Person with Disabilities electors/ voters, the election commission ensures that the booth level officer will reach the doorstep delivery of electoral services.

Postal Ballot :

Postal Ballot is the facility provided to the Person with Disabilities and Senior citizens of the age of 80 and above who fill Form 12-D

Accessible Election :

Accessible Election involves access to person with Disabilities electors for the physical environment, transportation, information and communications, including appropriate technologies and systems, and other facilities and services provided to the Person with Disabilities ,Senior Citizens during Election

Formats for Accessible Communication :

Websites and social media content: The Web Content Accessibility Guidelines (WCAG 2.1) are designed to make websites universally accessible. The minimum requirement for Government content is Level AA. i. For example, there is an accessible colour palette that outlines the colours that are accessible for both AA and AAA standards. ii. Social Media Content: = provide transcripts for videos (for example on YouTube) = link to accessible web content = keep the

language simple = caption video and consider live captioning = describe the content of photographs = give alternative text descriptions of the key data in maps, charts or graphs

Accessible Social Media Campaign :

- i. Provide alternate text for photographs and images. Alternate texts are brief text descriptions of an image's content that is displayed when an image is not visible on the page. Persons using screen readers will be able to hear the (alt) tag in place of the image.
- ii. Label images with descriptions of image content (e.g. if a photo shows a woman casting a ballot, then the alt text should say "woman casting a ballot") so that website users who are not able to see the image clearly are able to read or hear the description.
- iii. Any video posted on the website should have captions. If this is not possible, a transcript could be used as a second choice. This is an example of alt-text for an image
- iv. Keep your content simple. Avoid using abbreviations so that screen readers can easily read the text. v. Capitalize each word within a hashtag, for compound words, or when several words are joined (e.g. Persons With Disabilities, Nothing About Us Without Us).
- vi. Avoid using abbreviations so that screen readers can easily read the text.
The present study is an attempt to study the use of Social Media such as Facebook, Instagram, Twitter, Youtube, Facebook Live and WhatsApp towards the Achievement of Accessible Election in the State of Goa The Study is descriptive in nature.

Objectives of the Study :

To examine the use of social media towards achievement of Accessible Election in the Goa State legislative Assembly General Election 2022 held on 14th February 2022.

To understand the various Assured Minimum Facilities provided to the Person with Disabilities Electors

Methodology :

Office of the Chief Electoral officer Goa uses social media such as Facebook, Twitter, Instagram, YouTube, WhatsApp etc to disseminate the information to the Electors. The use of such social media was studied with the help of data available with office of the Chief Electoral officer Goa. The period of the study was from Feb 2021 till March 2022.

Major Activities carried out for Persons with Disabilities for achieving the Accessible Election :

- Disability Assessment camp

District wise camps were organized to facilitate the PwD electors to obtain the certificates. Disability Assessment camp were organized at Asilo Hospital Mapusa and Hospicio Hospital Margao south respectively. 164 electors participated and disability certificates were issued to 90 Person with Disabilities which includes Person with Visual Impairment, Deaf and Hard of Hearing and Locomotor Disabilities.

- Identification of Person with Disabilities, Registration and PwD mapping

Identification of Person with Disabilities voters and tagging them was done through Booth level officer, Divyang Mitra and PwD App

- Training

Electoral Registration officer (ERO) and Assistant Electoral Registration officer for 40 Constituency has been trained on Accessible Election. Taluka wise Booth level Officers were trained on Appropriate behavior towards Person with Disabilities Electors through Online mode by the Nodal officer for Accessible Election on the various aspects of Accessible Election and thereafter Constituency wise brainstorming session to Booth level officers and training to Divyang Mitra on Enrollment and Tagging of PwD electors

- Preparation of Accessible Material for Person with Disabilities
- State level steering committee meeting,
- Meeting with NGO's working for 21 different categories of Person with Disabilities
- Accessible website of CEO for person with disabilities
- Celebration of International day for person with disabilities and PwD voters Awareness Programme
- Guide for booth level officers on Appropriate behavior towards Divyangjan and Accessible Election
- Elocution competition for person with Hearing Impairment on ethical voting between the age group of 16 to 40
- EVM/VVPAT Demonstration was done for PwD voters by Master Trainers.
- Blind Cricket tournament between North Goa District team and South Goa District Team
- Celebration of National Voters Day
- Non-Classification, Non-Ranking Para Table Tennis Tournament for Person with Disabilities voters in Wheelchair and Standing Category
- Non classification, non-Ranking Para Badminton tournament in standing and wheelchair category for Person with locomotor Disabilities and Person with Hearing Impairment voters from Goa.
- Divyang Lokshahicho Rath is prepared which consists of Accessibility features.
- Voter Awareness Campaign rally by person with disabilities with wheelchair, motorised Vehicle, white cane
- Polling Booth manned for Persons with Disabilities
- Gumhat Performance by Person with Disabilities
- Talk Show on Goa Doordarshan
- Special Summary Revision
- Facebook Live Session on Assured Minimum Facilities
- Registration Camp for Transgender
- Several Videos were created involving Person with Disabilities and Sign Language Interpreter to disseminate information related to Accessible Election including Assured Minimum Facilities

All the above activities of the CEO Goa can be seen on Facebook Page, Twitter handle, Instagram and YouTube channel mentioned below

<https://www.facebook.com/CEOGOAO/>

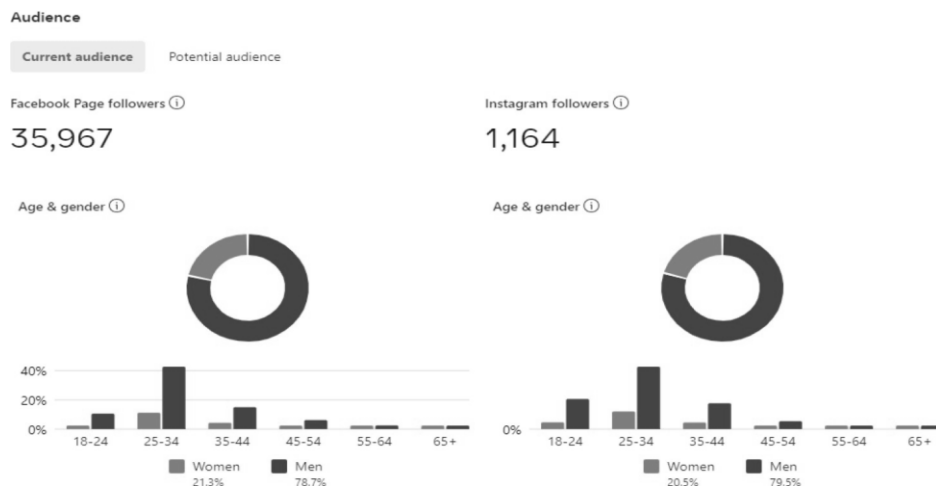
https://twitter.com/CEO_GOAO/

<https://www.instagram.com/ceo.goa/> <https://www.youtube.com/c/Goavotes>

Major Findings :

- Goa State legislative Assembly General Election held on 14th February 2022 was having total 1164224 out of which Male Electors are 566241 (48.63%) and Female Electors are 597974(51.36 and 9 were Transgender Electors. The Person with Disabilities tagged are 9599.
- Total Voter Turn out in 21 Constituencies in South Goa is 80.47 per cent whereas total Voter Turn out in 19 Constituencies in North Goa is 83.52 per cent
- Postal Ballot facilities were introduced first time to the Person with Disabilities who have 40 per cent and above disability certified by competent authority and to the Senior Citizens of 80 and above 80 years of Age
- 29639 Senior citizens and 9599 Person with Disabilities were eligible for Postal Ballot facility. 12223(41.24%) Senior citizens and 2122 (22.%) PwD Electors chosen for Postal ballot facility out of which 10274 (84%) Senior citizens and 1766 (83%) PwD electors casted their vote through Postal Ballot facility.
- 10495 Polling Personnel were used to carry out the Election
- 40 Constituencies spread over two Districts i.e North Goa (19) and South Goa (21) 275 Male candidates and 26 Female candidates contested the Election
- 1722 Polling Stations were set up to carry out the Accessible Election in 1171 Polling Station locations, 106 Polling Stations were manned by Women whereas 8 polling Stations were exclusively manned by Person with Disabilities officials.
- Web streaming of Poll day activities across 1722 polling was carried out using online as well as Offline Mode. 1543 polling stations were streamed in online mode and 179 were streamed in offline mode
- A telegram based chatbot system was developed and implemented by CEO Goa in association with IIT Goa. The system serves as one stop contact point for handling common queries with automated responses on various topics of Election Managements
- On the Poll day 85 per cent booth were having Permanent Ramp, 94 per cent booths were having permanent drinking water facility , 99.82 booth has permanent electricity, 94.59 per cent booths have Permanent toilets. Temporary arrangements were made where permanent facilities not available.
- All 1722 booths were having proper furniture, pendal, Signanges, AMF Posters; Signboards on Information related to booths were also made available.
- The information related to the use of Social media is as below

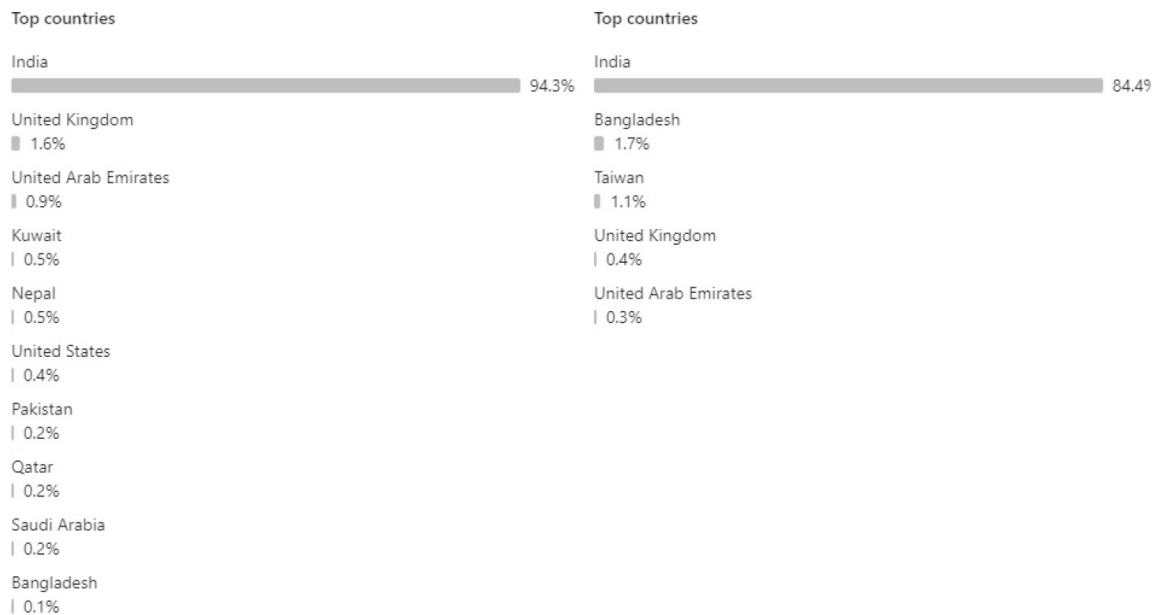
Facebook Page and Instagram :



35967 followers are on Facebook Page, 78.7 per cent are Men whereas 21.2 per cent are Women. Majority of the followers are in the age group of 25-34 per cent, followed by the age group of 35 – 44

1164 followers are on Instagram, 79.5 per cent are Men and 20.5 per cent are women. Majority of the Instagram followers are in the age group of 25-34, followed by the age group 18-24

Nation wise details of the Followers :



94.3 per cent Face book followers are from India followed by 1.6 per cent in United Kingdom, 0.9 per cent in UAE, 0.5 per cent from Kuwait, 0.5 per cent from Nepal, 0.4 per cent from United States, 0.2 per cent from Qatar, 0.2 per cent from Saudi Arabia and 0.2 per cent from Bangladesh. 5.7 per cent followers are from abroad. The above data clears that Goans who are working abroad also follow the Face book Page of CEO

84.49 percent Instagram followers are from India followed by 1.7 per cent in Bangladesh, 1.12 per cent from Taiwan, 0.4 per cent from United Kingdom and, 0.3 per cent in UAE.



The above graph shows that for period of 1 year Face book page reach is 820138 whereas Instagram reach is 329603 upon paid marketing,

Page and Profile Visits

Page and profile visits

Facebook Page visits ⓘ

15,704 ↑ 871.8%



Instagram profile visits ⓘ

41,306 ↑ 62.5K%



15704 Electors visited the Facebook Page whereas 41306 did Instagram Profile visits

Use of You Tube :

CEO You tube channel “Goa Votes” has 1160 subscribers and 210 videos are uploaded on the YouTube out of which 913 subscribers (78.70 per cent) viewed the videos. Total watch time is 3739.17 hours and the total views are 218402 and the Impressions are 782053.

Majority i.e. 26.5 per cent (57859) viewed the video titled Call the Helpline no. 1950 for all your election related queries, followed by 11.72(25593) per cent viewed the video titled Goa Elections, followed by 11.67 (25490) per cent viewed the video titled 2nd Place Winner of Konkani Kantaram Competition in others Category Organised by CEO Goa.

Use of Twitter :

296 Tweets published for the period 30/1/2022 to 28/2/2022 , impressions 270307,14212 engagements,637 retweets,1723 likes , Media views 19201, media engagements 9344

Conclusion :

Office of the Chief Electoral officer Goa used Face book, Twitter, Instagram and YouTube to reach out the Electors including Person with Disabilities Electors.44657 electors follows the CEO on social Media Platform and the highest number of followers are on face book Page.

5.7 per cent followers on Social Media (Facebook and Instagram) are from United Kingdom, UAE, Kuwait,Nepal,United States, Qatar,Saudi Arabia, Bangladesh, Pakistan, Taiwan. Goans who work abroad do visit Facebook Page and Instagram of CEO Goa

85 per cent of the Polling Stations were having Permanent Ramp. 9 Transgender electors casted their votes first time in Goa State Legislative General Election. 9599 Person with Disabilities electors were tagged.

During the COVID-19 Pandemic,81.89 per cent voter turnout was possible due to the active useof Social Media and thus social Media played a vital role to reach out to the voters.

Postal Ballot facility to the person with Disabilities and Senior Citizens electors 80 and 80 plus was provided first time and out of the 14345 Postal Ballot issued 12050 (84%) casted votes

through Postal ballot The voting turnout through Postal Ballot is substantially higher than the voting turn out at the polling Station giving opportunities to the Person with Disabilities and Senior Citizens is a step forward towards the Accessibility

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Straw-Bale as a Building Material : A Review

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Introduction :

A natural disaster is a major adverse event resulting from natural processes of the Earth such as floods, hurricanes, tornadoes, volcanic eruptions, earthquakes, tsunamis, and other geologic processes. A natural disaster can cause loss of life or property damage, and typically leaves some economic damage in its wake, the severity of which depends on the affected population's resilience or ability to recover and also on the infrastructure available.

Buildings are responsible for 36% of the world's energy load and 37% of the CO₂ emissions. The immense untapped potential for energy and carbon emission savings of the building sector makes it the prime player in energy transition and climate change mitigation. Global concern about environmental and energy issues has led many governments, worldwide, to issue new building regulations. In western countries, such regulations promote the use of low embodied energy and sustainable materials. The present review aims at summarizing the current knowledge on straw bale construction. Straw is a natural fibre that can last many thousands of years under certain conditions. Intact straw has been found in dry Egyptian tombs and buried in layers of frozen glacial ice. However, under typical conditions straw will slowly degrade as do all natural fibres materials like wood, paper, cotton fabric, etc. The rate at which this happens is highly dependent on the conditions under which the straw is stored, primarily moisture content and temperature. With proper attention to moisture control, a straw bale structure should be able to last as long as any conventional wood framed home.

The advancement in the field of technology have influence environment in utmost extend so everyone is worried about the environment and its tremendous impact in our life. It is obvious that people want to live in eco-friendly houses making it as a part of environment and their life. Thought it is a challenging job, we can still use our resources and manpower for the creation of innovative eco-friendly houses. Straw house can be one of the best alternatives for the country like India where agriculture is still the main source of income and production of straw is tremendous. But, those straws are either burned or ploughed back to soil leading to the production of harmful gas as carbon forming black cloud which seriously cause chronic chest diseases and also burning fills the air with gaseous and particulate pollutants, and soils generally can't absorb all the materials as quickly as needed so ploughed back to soil is also not a effective implementation. Straw bale construction can be one of the best alternatives as it is renewable resources having tremendous features as cost effective with high health value, Aesthetics value, thermal performance, Fire resistance, light weight and eco-friendly in nature. We also can go with the various techniques of construction as load bearing straw bale construction or non load bearing construction as per the circumstances. Straw bale construction can be one of the best alternatives for all kind of people for constructing a economic building with a sustainable material.

Review on Past Work Done:

Pragyan Bhattarai, Dharma Raj Dhakal, Keshab Neupane and K. Shyam Chamberlin (2012) "Straw Bale in Construction of Building and its future in India" International Journal of Modern Engineering Research (IJMER) Vol.2, Issue.2, they studied the advancement in the field of technology have influence environment in utmost extend so everyone is worried about the environment and its tremendous impact in our life. It is obvious that people want to live in eco-friendly houses making it as a part of environment and their life. Thought it is a challenging job, we can still use our resources and manpower for the creation of innovative eco-friendly

houses. Straw house can be one of the best alternatives for the country like India where agriculture is still the main source of income and production of straw is tremendous. But, those straws are either burned or ploughed back to soil leading to the production of harmful gas as carbon forming black cloud which seriously cause chronic chest diseases and also burning fills the air with gaseous and particulate pollutants, and soils generally can't absorb all the materials as quickly as needed so ploughed back to soil is also not a effective implementation. Straw bale construction can be one of the best alternatives as it is renewable resources having tremendous features as cost effective with high health value, Aesthetics value, thermal performance, Fire resistance, light weight and eco-friendly in nature. We also can go with the various techniques of construction as load bearing straw bale construction or non load bearing construction as per the circumstances. Straw bale construction can be one of the best alternatives for all kind of people for constructing a economic building with a sustainable material.

Alicia Bárcena, Antonio Prado, Joseluis Samaniego, Ricardo Pérez, (2014), "Hand Book of Disaster Preparedness", printed at United Nations, Santiago, Chile. Claudia Schneider, (2012), "Sustainable Reconstruction in Disaster-Affected Countries", (SKAT) Swiss Resource Centre and Consultancies for Development it illustrates that there are many different definitions of disaster. Most such definitions tend to reflect the following characteristics: • Disruption to normal patterns of life. Such disruption is usually severe and may also be sudden, unexpected, and widespread. • Human effects such as loss of life, injury, hardship, and adverse effect on health. • Effects on social structure such as destruction of or damage to government systems, buildings, communications, and essential services. • Community needs such as shelter, food, clothing, medical assistance, and social care. They opened the doors for poor uncouncted countries to new ideas and helping hands. New threats have also come from what are generally termed hazardous materials or substances. The 1985 tragedy of Bhopal in India ranks paramount in this category with an estimated death toll of 2,500 and 100,000 affected in various ways. But the Bhopals of this world are, in many ways, only the highly publicized tip of this particular disaster iceberg. Hazardous materials are shifted around the transport systems of the world in increasing amounts. They are sometimes dumped in areas which are vital to the world's future.

Benny Hidayat and Charles Egbu (2010), "Role of Project Management in Post Disaster Reconstruction", Research gate publication, pp.1269-1278 they showed us through documents the key challenges in post-disaster reconstruction projects and the main procurement strategies that are available and currently in use in the reconstruction projects. The number of natural disasters has increased sharply in the past few decades, threatening human lives, and the built environment. Recent disaster management paradigms have, arguably, shifted from disaster relief to disaster preparedness, hazard mitigation, and vulnerability reduction. Reconstruction activities are those activities in recovery and rehabilitation phase of disaster risk management; actions taken to restore and if possible improve pre-disaster living condition of affected communities. While emergency relief which by providing food, medical treatment, and shelter in immediate after disaster is considered effective, reconstruction as medium and long term recovery activity is usually slow, expensive, complex. If not addressed effectively, opportunities for community development are often lost. Based on a comprehensive literature review of reconstruction projects and processes in a few countries affected by natural disaster, this paper investigates and documents the roles of project management, and the roles of key stakeholders in reconstruction projects after disasters.

Dzulkarnaen I., Majid T.A., Roosli R., Samah N.A. (2014), "Project Management Success for Post Disaster Reconstruction Projects: International NGO Perspectives" Procedia Economics and Finance, Vol. No.18, pp.120 – 127, they thoroughly observed and studied that the natural disaster happened frequently around the world and caused great loss of lives and properties. Since incidents of natural disasters increase, it is crucial that NGOs and other agencies involved in reconstruction to learn as much as possible from previous projects they involved with; its successes and failures. Post-disaster reconstruction (PDR) is a complex and highly demanding process that involves a number of different and well coordinated courses of action. Therefore, it is vital that these complex activities are well planned, subject to thorough consultation. The

broad objective of this research is to study the issues and challenges and investigating the success factors to determine which critical success factors are most influential in avoiding particular project failures. The goal of this research is to improve project management practice in PDR project specifically for International NGOs that participate in the phase of Post Disaster Reconstruction. It can serve as a platform for other researchers to launch into this evolving new field.

Nayan Das (2018) "FUTURE Of STRAW-BALE HOUSING IN INDIA", Article in Construction Times b2b Magazine pp. 6 it is known to everyone that India's population is growing at an average rate of 1.02% annually. On the surface, it may seem like a small increase. However, considering our current situation, we should be aiming to reduce it. The population explosion has caused two serious problems (amongst others) in the Indian socio-economic system. Firstly, it has put a huge pressure on the housing market to constantly meet the demands of producing liveable dwellings for the Indian citizens. The second problem is not tangible. But it influences the social dynamics of our communities. The ongoing increase in population has drastically affected the well-being of Indian families who do not have a sufficient individualized space to live a dignified life. Available statistics from the Census of India indicate that more than 20% of Indian married couples have to share their room with another couple/family although the problem of sharing the same room between two couples cannot be quantified in terms of noticeable profit and loss, it has an enormous impact on the mental health of Indian families. While there has been inspiring initiatives from organizations such as Griha Council and Bamboo House India to promote affordable housing and use of sustainable materials in residential homes, there is a completely unrecognized market for straw-bale which can certainly be utilized in building low-cost houses in India. Straw-bale is a residue of crops such as rice and wheat which are left standing in the agricultural fields after a harvesting season. As a general practice, Indian farmers burn-off the residual crops to clear the field for the next season. In doing so, we are not only suffering the loss of prospective building material but also witnessing emission of carbon dioxide and methane into the environment as a result of the burning.³ On the contrary, a green approach would be to utilize the hidden properties of straw-bale and produce it commercially for the construction industry. India is the second-largest producer of rice in the world. In order to take advantage of producing more than the average rice crops as compared to other countries, we should be starting to promote straw-bale as a sustainable building material. Straw-bale is a renewable material with low embodied energy, high tensile strength and excellent insulation properties. It has been used as a wall material for more than a century in countries like the USA, France, UK and Australia. However, when it comes to India, it is not even recognized as one of the predominant wall materials. For a building material or wall material to be affordable and energy-efficient, it should be able to fulfil certain essential criteria. One of the requirements is the local availability of the material. Another critical condition is the low-labour cost for handling and storing the material. However, the most important prerequisite is the sustainability of the material. This involves durability, human comfort and environmental impacts of the material. Straw-bale has the promising ability to meet all these requirements and become the future green material for our low-cost houses.

Monika Gupta Uttam Kumar Roy and Madhumita Roy "The Viability of Straw Bale as a Construction Material in Indian Context" presented a case study that shows and proves that Agricultural production has increased a lot in India due to the new irrigation schemes, use of agrochemicals, advancement and mechanization of farming practices which finally leads to an ample amount of agro waste. Our country needs to get a solution for sustainable management of agricultural waste due to the increasing population, production rates and economic growth. We get the majority of crop residue from wheat and rice crops which needed to be managed or reused. Northern Indian states such as Punjab, Haryana and Uttar Pradesh are suffering from severe air pollution because 92 Mt of crop residue is burnt each year. Out of 500Mt crop residue of India majority of it is used as raw material for energy production, for fodder etc. Due to the lack of proper disposal opportunities and lack of technical awareness the small-scale farmers find burning the best way to dispose of the crop waste. According to the National Centre for

Biotechnology Information advances science and health the air quality has become really poor in northern India to nearly twice the permissible Indian standard and ten times higher than the WHO standard because of large scale burning of crops in that leads to CO₂, CO, N₂O and NO_x emission in the atmosphere and has led to a shocking increase in air pollution not only locally but in nearby cities also. Many campaigns were done by the Indian Government to stop crop residue burning and for handling it the Indian Agricultural Research institute (IARI), Indian Ministry of New and Renewable Energy are continuously promoting research and innovative measures. The National policy for management International Journal of Environmental research and Public Health crop residue recently formulated by the Central Government, has laid out policies and regulations to be undertaken by the local agencies to curb crop burning and initiatives towards sustainable management practices. As a result, the National Remote Sensing Agency and the Central Pollution Control board (<http://www.ncbi.nlm.nih.gov>) monitor crop burning through aerial surveillance and penalize farmers who burn crops. After so many attempts of different government agencies air pollution is still increasing especially in the months of November and December suggests that the above policies have no fully prevented crop burning.

Ankit Patel, SanjaySalla, Jayeshkumar Pitroda (2013) "A Study on Utilization of Agro Wastes as an Innovative Material in Indian Context", International Journal of Scientific Research, Volume:2, Issue:2, pp. 119-124 they researched that the materials and construction technology for low-cost housing remain very much bound with the locally available materials. By adopting new appropriate and innovative technologies for utilizing alternative to basic building materials like brick, cement, is an effective, efficient and economic manner. One of the best approaches is to use agriculture waste to meet the growing requirement of the building material. Utilization of agro-industrial wastes assumes a high priority in producing the resources of building materials. Agriculture is the most economic activity of India and other developing countries. There has been a vast expansion in agro-industrial field in recent years which makes the sustainable increase in the volume of agricultural residues of different types. Thus, the current shortages of wood and other building materials for ever rising the housing requirements have created a great interest in these agro-wastes. Groundnut husk, jute fibre, rice husk, rice straw, rice bale, saw dust, and coconut fibre and other fibrous material have been identified as most economically important wastes for building industry. It is estimated that in India nearly 700 million tonnes of organic waste is generated annually which is either burned or land filled. The large amount of the agro waste generated from the market area has created major environmental problems. Earthworms have ability to convert organic waste into valuable resources containing plant nutrients and organic matter, which are essential for maintaining soil productivity. It also promotes microbial and enzyme activities, in the soil. In the present investigation, the study is carried out on the proper utilization of agriculture waste as a building material. Presently in India, about 960 million tonnes of solid waste is being generated annually as by-products during industrial, mining, municipal, agricultural and other processes. Of this 350 million tonnes are organic wastes from agricultural sources; 290 million tonnes are inorganic waste of industrial and mining sectors and 4.5 million tonnes are hazardous in nature. Globally 998 tonnes of agricultural waste is produced in a year. To safeguard the environment, efforts are being made for recycling different wastes and utilize them in value added applications. The potential for agro industrial development in the developing countries is largely linked to the relative abundance of agricultural raw materials and low-cost labour in most of them. The most suitable industries in such conditions are indeed those that make relatively intensive use of these abundant raw materials and unskilled labour and relatively less intensive use of presumably scarce capital and skilled labour. Many of the industries using agricultural raw materials have in fact those characteristics that make them particularly suitable for the circumstances of many developing countries.

Conclusion :

We can conclude that straw bale is the best and most reliable replacement or option for conventional construction works. The mass amount of pollution, damage done to the environment can be somewhat reduced or brought under control by use of straw bale. Straw is getting lots of preference in many countries because it is cost effective with high health value, Aesthetics value, thermal performance, Fire resistance, light weight and eco-friendly in nature. It also has good response against earthquake so it can be constructed in earthquake prone areas as well. So, profound research and awareness regarding straw bale construction should be enhanced in developing countries land agriculture countries like India for effective implementation of straw bale house.

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Qualifications: M.E., GATE, B.E., D.C.E. F. I. E.



Er. Dhananjay Mali has Thirty-two years of teaching and research experience. He has been teaching programmes such as M.B.A., and M.Sc. His research areas are Environmental Engineering and Pollution Management.

He has published about 20 research papers in National and International Journals and also presented research papers in more than 25 National and International conferences. He has worked as a member in various bodies such as Engineering Institutes, Consultancies and other Non-governmental organizations. He has membership of various professional bodies at the national and international level. He is Fellow of Institute of Engineers, Kolkata, India.

He has worked as a Resource person and attended more than 40 conferences. He has undertaken various collaborative research projects. He offers consultancy in the areas such as water, Air, Soil and Solid waste analysis and management.



Prof. Dr. A.R. Kulkarni

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Dr. A.R. Kulkarni has 35 years of post-graduate teaching experience, including four years as principal of the College of Non-Conventional Vocational Courses for Women (CNCVCW), affiliated with Shivaj University, Kolhapur. He teaches students of M.Sc. (Environment and Safety) and MBA (Environment management) at CSIBER. Dr. Kulkarni has published 28 research papers in peer-reviewed/ UGC-approved journals, edited three books and participated as a resource speaker or presenter at 28 national seminars or conferences. He has provided environmental and mining consulting services in India and abroad, including Oman, Indonesia, Botswana, Madagascar and Liberia. He is recognized as a registered qualified person (RQP) by the Indian Bureau of Mines, Ministry of Mines, Government of India, International Register of Certified Auditors (IRCA), Lead Auditor for Environment Management System (ISO EMS 14001:2015), Life Member of Mining Engineering Associated of India and Affiliated member of the Society for Mining, Metallurgy and Exploration, USA. He is the recipient of the Vasundhara Gaurav Puraskar (2018) of Kirloskar Vasundhara International Film Festival Award for Contribution in the Field of Environment.

This book is for those who want to know more about the latest research in the area of Environment science, engineering and management. It is also going to help those who want to update themselves in the field of social sciences like social media, work life balance etc. It includes the paper on gender equality, equal opportunities, advertising and women entrepreneurship in India. Topic of international importance like sustainable development, Spirituality, alternative livelihood and tourism are also included in this book. The present scenario of soil, water and air is presented in the related research articles. Effects of pollution on human health and work environment along with ground water pollution and its management is added in it. It is of use to understand human resource development in NGOs, self-help group for woman empowerment.

About CSIBER, Kolhapur, India

Chhatrapati Shahu Institute of Business Education and Research Trust was established long back in the year 1976 to cater the needs of professional education to the youths of rural western Maharashtra and North Karnataka. It was founded by a well-known educationist, the then Dean of Shivaji University, Kolhapur and a renowned Chartered Accountant Late Dr. A. D. Shinde Sir.

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