

RECENT TRENDS IN COMMERCE, MANAGEMENT AND SOCIAL SCIENCES

ISBN: 978-93-91932-27-5



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MANAGEMENT AND SOCIAL SCIENCES

Dr. Math & Dr. Modi



Edited by:
Dr. Bharati S. Math & Dr. Ravi Kant Modi

 **INSPIRA**
JAIPUR - INDIA

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I N S P I R A[®]
Reg. No. SH-481 R- 9-V P-76/2014

JAIPUR • DELHI (INDIA)

Published by
INSPIRA
25, Modi Sadan
Sudama Nagar, Tonk Road
Jaipur-302018, Rajasthan, India

© Publisher

ISBN: 978-93-91932-27-5

Edition I : September 2022

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Price: Rs. 430/-

Laser Type Setting by
INSPIRA
Tonk Road, Jaipur
Ph.: 0141-2710264

Printed at
Shilpi Computer and Printers, Jaipur

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Focus thrown on Demographics and Health-care Infrastructure in the Oldest Urban Local Body of Nadia District: A Spatio-temporal Analysis

Dr. Ayan Das Gupta*

Introduction

Economy of Birnagar is mostly based on agriculture. Different types of grains starting from paddy, flour, wheat, different fruits are being produced in a vast area outside the main township, where one would find a large number of farmers and villagers. Various products from milk are transported to Calcutta each and every morning. Another type of product which is not getting so much of government's notice is the handicraft and boutiques. At least 1000 people or more depend upon this. Besides myriad medium and small types of industries, manure producing industries, handloom – towels like gamcha and others taking together give the town a complete agro - industrial shape. IT infrastructure is getting popularised lately here in the Birnagar Municipal Area and its surroundings.

Economic Infrastructure

Though basically the agricultural population used to produce staple crop mainly for their sustenance and survival, nowadays they have been inclined towards the production of multiple types of vegetables and flowers for flourishing their economic condition. In the local market, different flowers like marigold, tube rose, red rose, gladiolus etc. are of great demand, and therefore the production and successive selling of the flowers bring economic prosperity to the people at Birnagar. The nearby urban unit of Kalinarayanpur is quite famous for the production of sophisticated as

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well as decorative flowers and the farmers from that region do turn up to educate the local cultivators in the production of flowers. Apart from the flower cultivation, the vegetable production is also of great value at Birnagar. Cabbage, carrot, tomatoes, beetroots, onion, potato, Radish, Pumpkin and multiple types of other green vegetables are cultivated over here. Especially in the winter season, the sweet peas, cauliflower, brinjal, coriander leaves etc. are produced and sold in satisfactory market prices in the ULB of Birnagar. Different types of agricultural residues are also generated from time to time but those waste materials are managed with great efficiency by the Nodal agency of Birnagar. Not only the residual portions of the crops to be treated as waste materials are managed successfully by the Municipal Authority of Birnagar, but also at the same time, different types of solid trash materials are managed and regulated here. Resource recycling practices and formation of composting plants are of worthy to mention in the context of solid muck management in the Local self-government of Birnagar.

Table 1: Decadal Growth Rate of Birnagar Municipality Arena

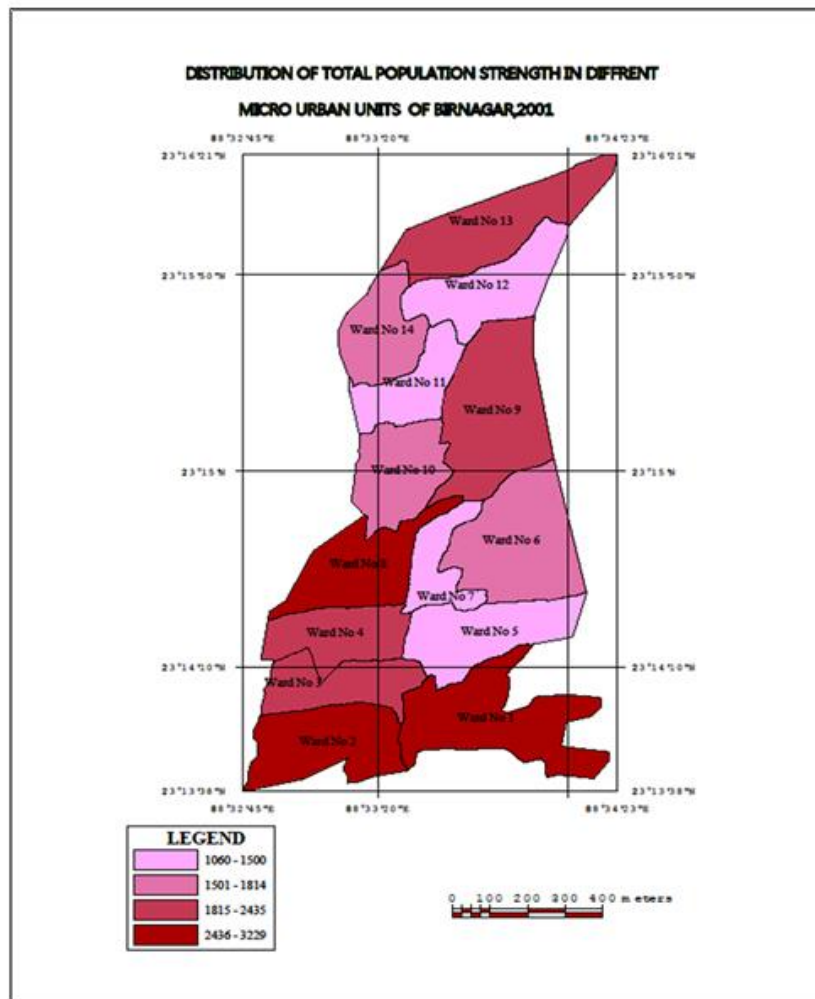
Census Year	Population	Decadal Growth Rate
1971	10321	--
1981	14256	38.12
1991	20014	40.39
2001	26597	32.89
2011	33800	27.08

Demographic Scenario

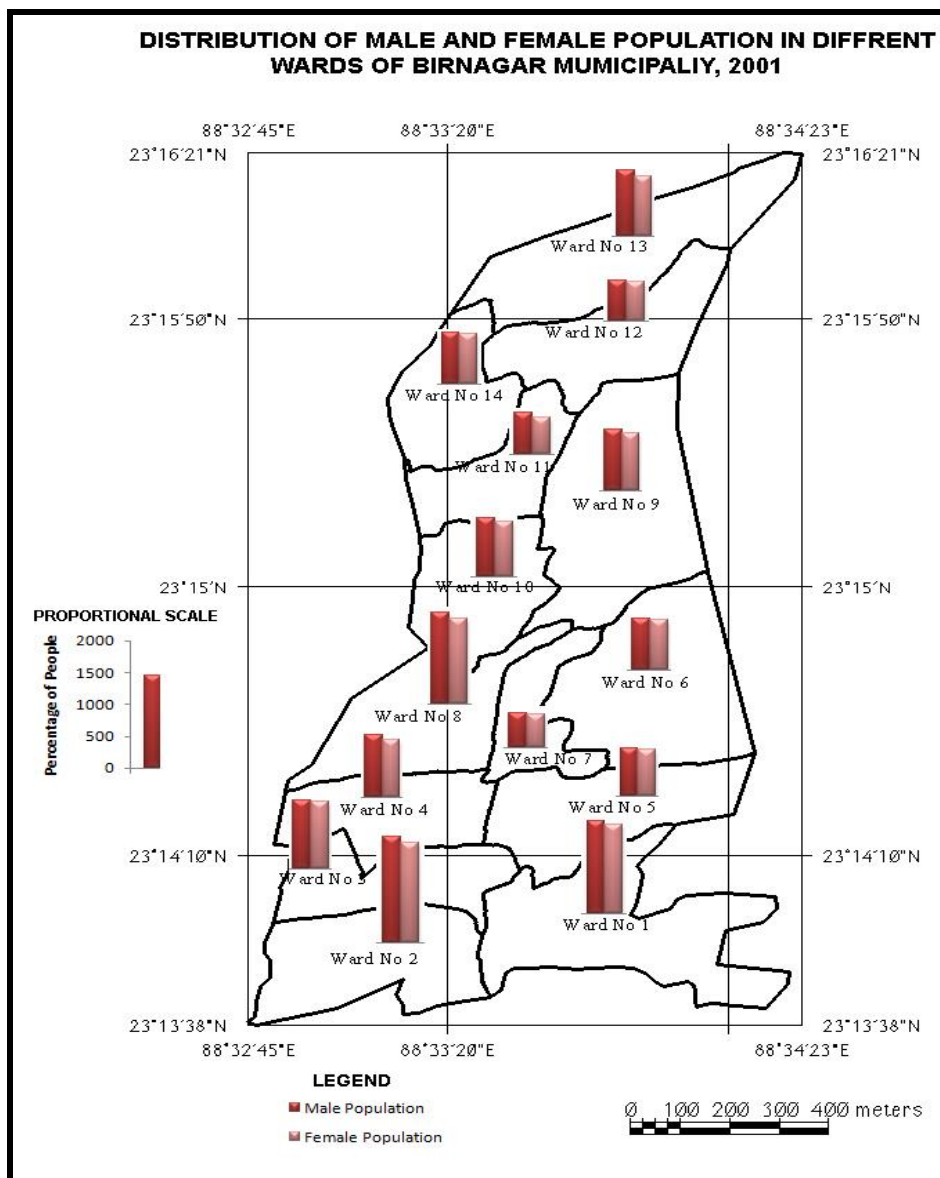
From the above growth rate table enclosed above, people can observe that decadal growth rate during the year of 1971-1981 was 38.12% and during the year 1981-1991 the growth rate of population was increased to 40.39% and from the year of 1991-2001 the decadal growth rate was decreased to 32.89%. Thereafter from the year of 2001-2011 the decadal growth rate was decreased again to 27.08%. According to 2001 census, the total population of Birnagar Municipality was 26,597. The distribution of total population strength in different micro urban units is given over here. In this map people can see that Ward No.1, Ward No.2 and Ward No. 8 have the high population. And in the Ward No.5, Ward No.7 Ward No. 11 and Ward No. 12 occur the less population. In the map next, the male-female distribution is shown for different wards of the Birnagar municipality. In this map, the target audience can see that the male and female distribution of Birnagar municipality is pretty favourable for the females and in many ward of it, the female population is very close to that of male population. In Ward no 1, Ward No4 and Ward no.6, the sex Ratio pretty remarkable for females. In the above discussion, about the demographic condition of Birnagar has been discussed for different Census Years and it can be said that the population of Birnagar is increasing day by day. So it will be a challenge for the municipality to provide the good services to the residents. Therefore it is time to analyze about the

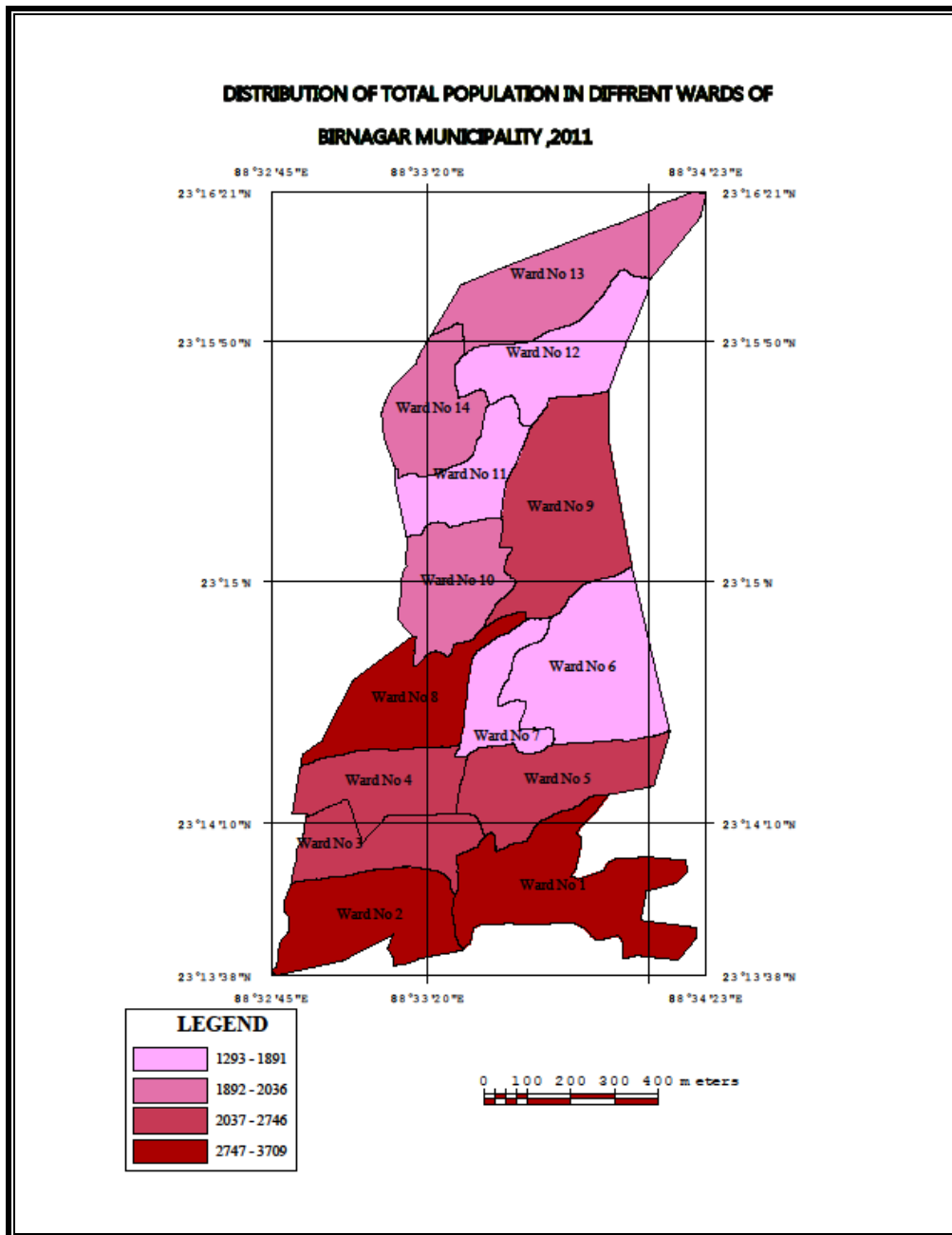
different development plans undertaken by the Birnagar ULB for their residents in different time periods. The flow diagram of Medical services of Birnagar Municipality is given below for better understanding of the status as well as stature of that particular facility at Birnagar.

The Western and South western part of the Birnagar Municipality is densely populated and the population density ranges between 1800 and > 3200 over there. The similar trend has been followed for the ward number 13 situated at the North eastern corner. On the other side, the north central as well as the eastern part of Birnagar Municipality is comparatively less populated and there the population density varies between 1000 and 1800. It is worthy to mention that most of the agricultural fields are concentrated in the western and the south western portion of the municipal boundary and the agricultural population is residing at that portion. On the other side, the household industrial workers and the people engaged in tertiary sectors are mainly concentrated in the central part where the density is relatively low.

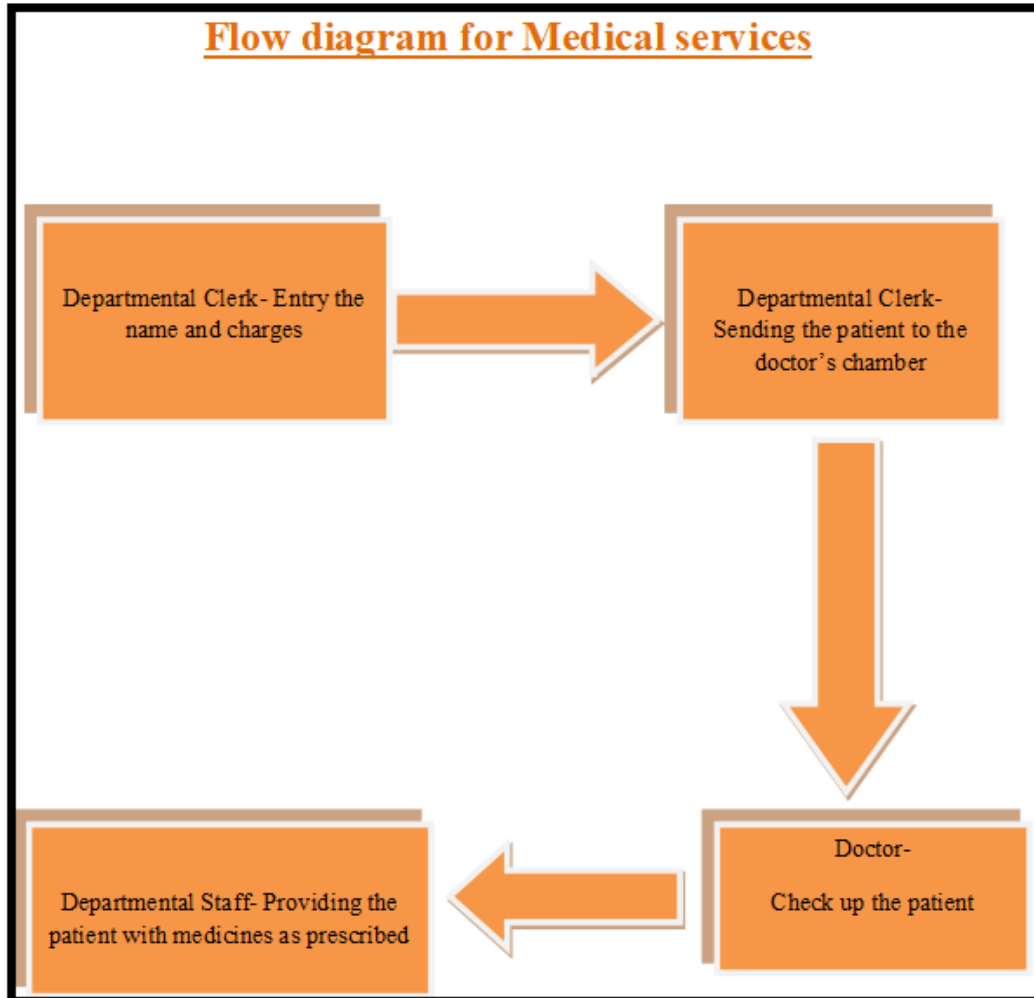


Total four distinct population density zones are clearly manifested in the map enclosed above. The density distribution zones are low, moderate, high and very high. Near about 60% of the total population of Birnagar Municipality do reside in the densely populated micro urban units of the nodal agency whereas 30 to 40 % population are dwelling in the moderate to low density areas. So far the distribution of male and female population in different micro urban units is concerned at Birnagar, Ward Number 14 and Ward Number 12 do have almost similar distribution pattern of the male and female population. As the sex ratio here is pretty favourable for the females at Birnagar, therefore it can be said that th demographic development scenario is quite satisfactory in this study arena.





This map I showing the different ward based population density of Birnagar municipality according to the census of 2011 data. In this map wit can be clearly manifested that in the ward No.1, Ward No.2 and Ward no.8 the most of the populated do reside and in Ward 3, 4, 5 and in Ward no 9 the moderate population density does exist. In the Ward of 6, 7, 11 and Ward no 12.lowst numbers of population do reside in per square kilometre area.

Table 2: Flow Diagram for Medical Services

According to the West Bengal Municipal Act 1993, 'The Health Care Delivery Improvement Plan' of the DDP refers to the entire gamut of health services related to public health, reproductive and child health care and other preventive health care initiatives taken by the Birnagar ULB by way of implementing Government Plans/Programmes. Birnagar ULB takes different health related plan during different year and the present year is not also an exception. The plans and programmes regarding health care facilities at the Birnagar ULB have been described below and some suggestive measures are also mentioned for improvisation of the health related situations. The health care scenario of Birnagar is very much discussed in the Nadia District Development Board. Like the solid waste management services, the improvement of Health care services for the benefit to the Local people of Birnagar is a very conspicuous issue and the nodal agency is pretty bothred regarding this.

Table 3: Different Proposals taken by the Birnagar ULB

SI No.	Brief Description of Proposal	Summary of Discussions	Priority Score
Theme 1: Public Health			
1	Training of HHWs	To enhance the quality of the HHWs it is necessary to provide Training to them on different techniques.	31
2	Providing umbrella sari chappal, sweater, tool kit to the HHWs	To encourage the HHWs in the case of service delivery dresses and other all required accessories to be provided to the HHWs	31
3	Spreading vector control all over the Municipality	To maintain the environmental health of the ULB regular spreading of vector control through out	30
4	Setting up of redressal cell for community feedback in the municipality hospital	For introducing the participatory process in the health infrastructure of the municipality one redressal cell to be set up in the municipal hospital.	27
5	Repair and renovation of existing crematorium	Present condition of the crematorium is not satisfactory, repair and renovation of the existing crematorium is needed to be done.	20
6	Repair and renovation of existing burial ground	Present condition of the burial ground is very poor, repairing and renovation of the existing crematorium is needed to be done.	18
7	Procurement of modern equipments for the municipal hospital, sub-centers and provide ambulance facility through PPP	To set up the modernized health infrastructure of the municipality procurement of modern equipments for the municipal hospital and sub-centers are to be done	16
Theme 2: Reproductive and Child Health Care			
8	Display of sign board in front of all the sub-centre	For information dissemination to the citizen sign boards to be displayed in front of all the sub-centres.	29
9	Arrangement of special camps e.g. sterilization camps, HIV AIDS awareness camps and other awareness generation camps in the sub centre's	Special camps needed to be arranged on sterilization and awareness generation camps needed to be arranged on HIV AIDS and etc. time to time enhancement of the awareness of the citizen.	29
10	Organize eye camp, blood donation camps etc. in the ULB	Blood donation camp, eye camp needed to be organized in the municipality at an regular basis, to enhance the awareness of the citizen.	29
11	Repair , renovation along with the provision of water connection, toilet etc in the sub centre's of the ULB	Provision of water supply along with the necessary repair and renovation in all the existing sub-centres needed to be done.	28

12	Regular visit of H.O/A.H.O./P.T.M.O. to the sub centres	Provision of regular visit of H.O/A.H.O./P.T.M.O to the sub-centres is one of the crucial factor which heeds to be introduced.	17
Theme 3: Other Government Programmes for preventive Health Care other independent initiatives taken by the ULB			
13	Arrangement of counseling for adolescent, adult women and pregnant women in the sub centre in the ULB	Women are needed to be addressed in a more emphasized fashion, so it is felt to arrange the provision of counseling for all the adolescent, adult, and pregnant women in the sub centres.	29
14	Organize awareness generation camps in diarrhoea, malnutrition, anaemia, along with nutrition measurement programme.	Awareness generation campaigns are need to be organize to reduce the cases of diarrhoea, malnutrition, anaemia along with the mutation measurement programme.	25

The Birnagar ULB gets the ambulance services to their Residents. The flow diagram of Ambulance is also self-explanatory below. Birnagar Municipality have achieved success in institutional delivery and only a microscopically7 minor section of expecting mother do not take the help of the Asha workers and the Anganwari sisters for their delivery. Separate grievance redressal cells have been formed by the municipal authority for getting the host feedback from the ends of the target audiences. People do report their multiple problems and usually those public issues get addressed and proper solution measures are found out. For the burial of the Muslim population, t5he burial grounds have been renovatd and hearse services ar also introduced for the benefit of the family members experiencing bereavements. Immunization programmes are also quite worthy to mention and under different phases, the municipal workers inject booster doses to children for combatting the viral diseases. The current crematorium at Birnagar has been renovatd and different facilities are extended over there. For controlling the vector borne diseases in terms of Malaria, Filaria, Dengue etc., sufficient measures are taken into consideration Spreading of bleaching powder, chemical smokes etc. in different localities ar done regularly. After the incidence of the vector-borne diseases, proper medical care is also given to the patients at just totally free of cost. For counseling of the adolescent people, different workshops and interactive sessions are also arranged recently by the urban local body. The popular clinical psychologists do turn up and they talk face to face to the adults as well as the adolescent people to solve their problems. Melancholia, acute depression, suicidal attempt, failure in studies, joblessness and so many other problems are taken care of the interactive sessions by the professionals. This sessions and immensely helpful to the target audiences and that has been clearly manifested through the questionnaire survey done by the researcher in the nodal agency of Birnagar.

The ambulance service is quite pleasing to the residents of Birnagar and through the perception survey, it has been clearly stated by the local people that at the time of dire need, they just give a phone call to the municipal clerks and they arrange ambulance for the serious patients. As the municipality provides special facility with reference to the ambulance service, therefore the rate is also subsidized and through an official challan the charges are collected from the patient-party and the clerk deposits the challan along with the money to the municipality office. This ambulance service helps slightly in the revenue earning of the urban local body.

Flow diagram for Ambulance Service

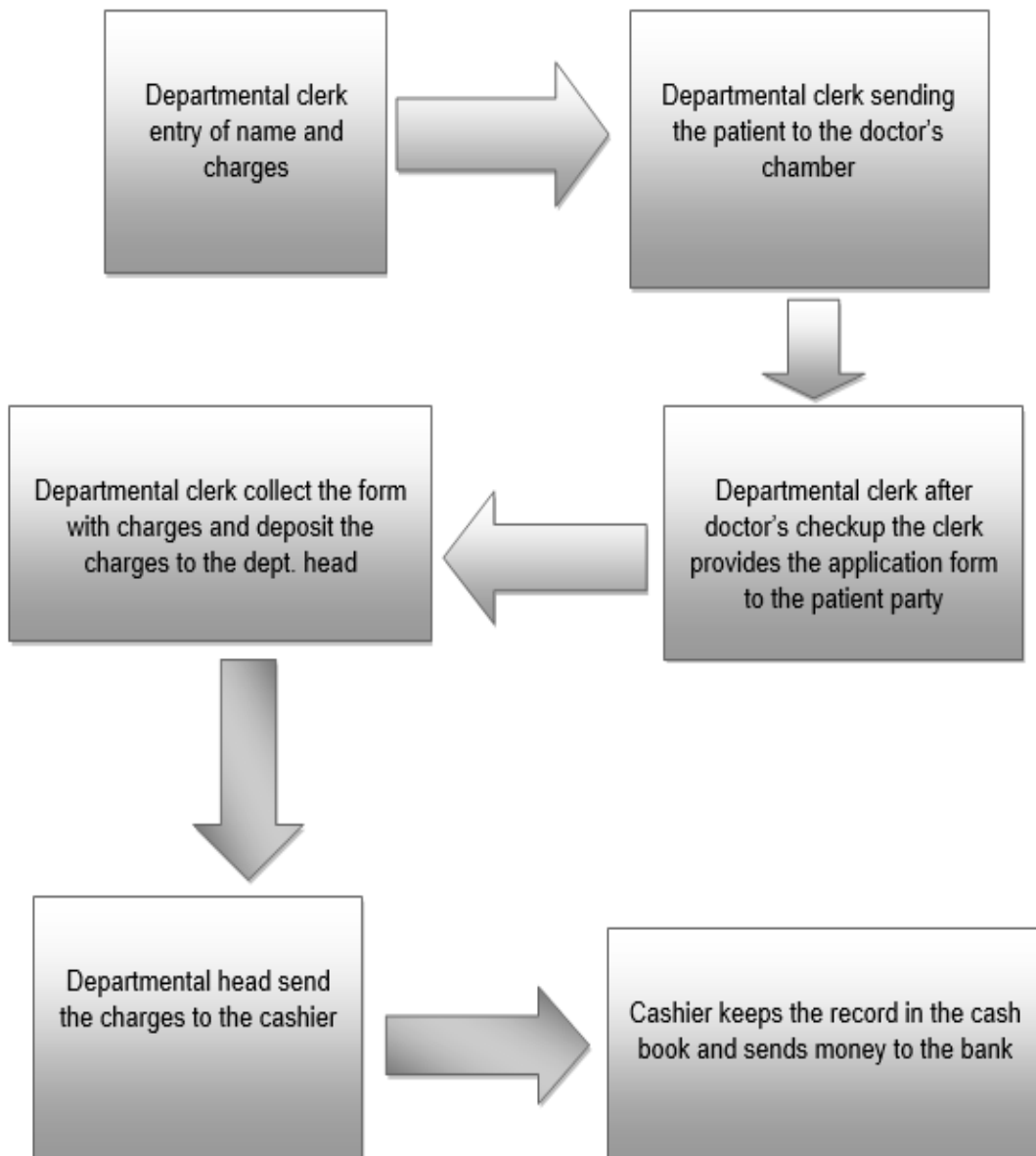


Table 4: Project Proposal for Awareness Generation Camps among the Residents

Project title: Organizing awareness generation camps in diarrhoea, malnutrition, anaemia, along with nutrition measurement programme.	Name of the govt. plan/programme: RCH service	
Location of ULB: Birnagar Municipality Heath sub centres	Objective of the project: to strengthen the health infrastructure	
Narrative description of the project: to increase the awareness on the disease e.g. diarrhoea, malnutrition, anaemia and to curb the number of cases		
One time investment required: Rs.250000 Tied (CBPHCS)&United	Requirement of support from external agency: Nil	
Human Resource: Available within the ULB- Yes	Operation cost: Staff & skill requirement for operating:	
Responsibility for implementation/ project co-ordination: health officer	No. of beneficiaries: All the citizen of the ULB	
Duration of the projection: 8 months pr year and total 5 year	Starting date: August in Every Year	Completion date: March in evry year
Inductive cost: Rs. 250000 Tied (CBPHCS)&United	Source of fund: Tied (CBPHCS)&United	
Implementation monitoring indicators: Better service provide to the citizen		
Requirement of support from external agency: Nil		

In this tabular structure above, in a nutshell, a specific project of th municipality at Birnagar has been addressed. Actually the low hemoglobin percentage of th residents within the municipality, malnutrition and deficit of vitamin, mineral, carbohydrates, protein, fat etc. to the people of the urban local body and lastly the issues of stomach upset of infection in liver and stomach to the common people get adequately addressed by the municipal authority. It is found that iron tablets are given at free of cost to the people having inadequate percentage of hemoglobin in their blood. Furthermore, the diseases due to dearth of vitamin and minerals and noted down and proper dietary supplements in terms of vitamin tablets are given to them. Adequate staff is there in the Nodal agency of Birnagar to execute such project. In the tabular structure, it is clearly written that the program has been taken into consideration for total 5 years at a stretch and in each and every year, between August and March, the workers from the municipality points out the people suffering from anemia, stomach-diseases and mal nutrition. After proper ruling out of th diseases, the medicinal supplements are dutifully provided to the patient-parties.

During the ward community consultation, feedback was collected in systematic manner from the ends of the selected residents and some of them have mentioned about the backdated infrastructure of the Municipality, during delivery and a few people have also said that the number of specialized doctors doing surgery is microscopically minor and for the betterment of the health infrastructure and reproductive as well as the child health care sector, their demand is the involvement of much more specialized medical practitioner. So far the AIDS control programme and blood safety campaign are concerned, the people have said that the impact of such campaign amongst the extremely poor people is not that much satisfactory. In the overall spectrum of public health, the target audience has said regarding the limited number of skilled staff in the Hospital and health care centres of the Municipality and there also they have demanded regarding the increase in the number of health care centres.

Ward Community Consultation and Citizen Participation

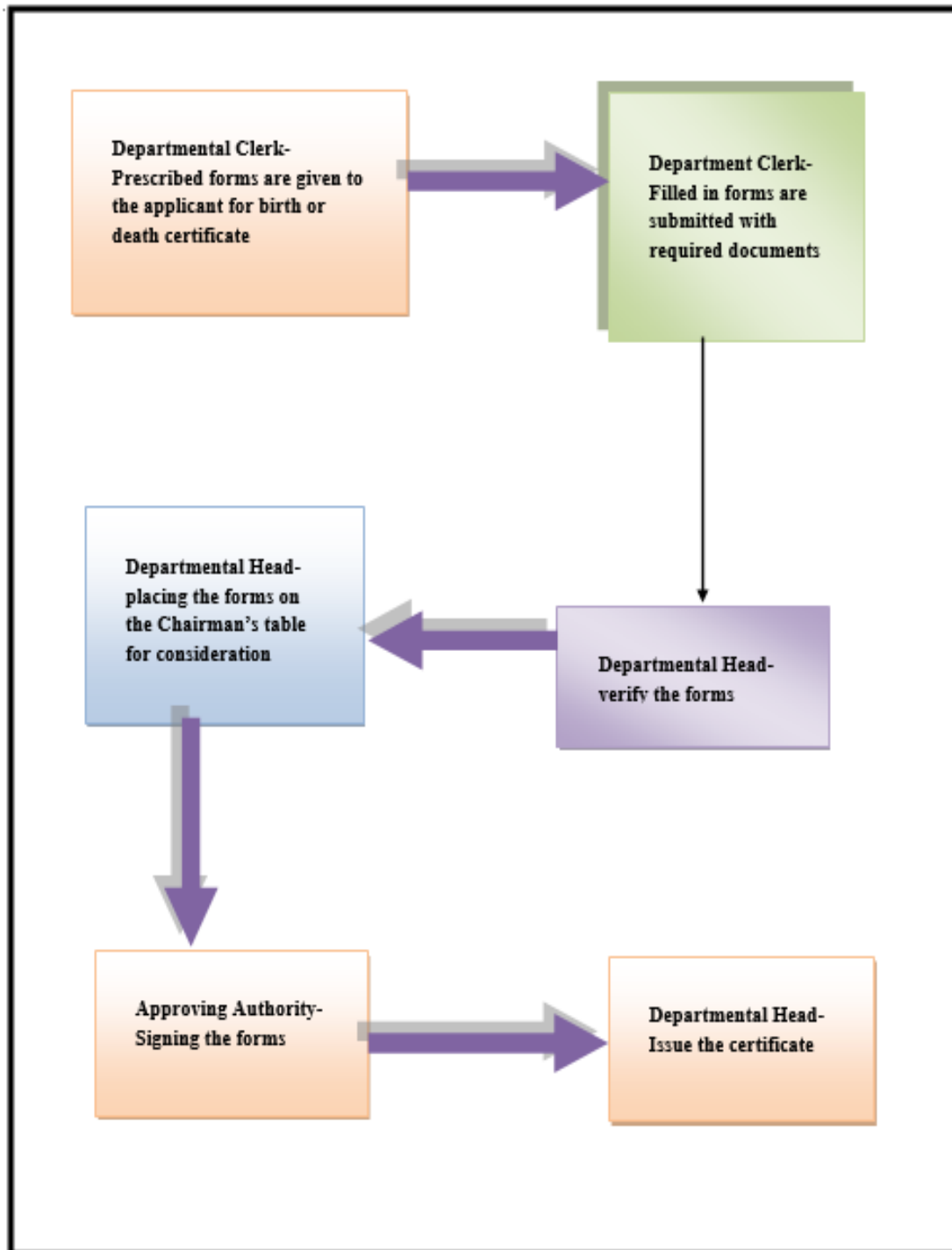
SI No	Themes	Problem/Issues	Suggestion
1	Public health	<ul style="list-style-type: none"> Only one health centre, so inadequate service provided 	
		<ul style="list-style-type: none"> Unskilled Hospital staff 	
		<ul style="list-style-type: none"> Few no. of doctors 	
		<ul style="list-style-type: none"> For near about 50000 people inadequate ambulance 	At least one ambulance and 2 or 3 health sub centers. Training should be needed for staff.
2	Reproductive and child health care	<ul style="list-style-type: none"> Backdated technique. Specialized doctor. Mobilization problem 	<ul style="list-style-type: none"> Specialized doctor. Free treatment Improvement of technology Ambulance for emergency purpose
3	National leprosy elimination programme	<ul style="list-style-type: none"> Awareness is small. 	Very frequently this programme is need
4	National aids control programme and blood safety	<ul style="list-style-type: none"> Awareness is ok but among the poor people this is not so good. Very often awareness programme 	<ul style="list-style-type: none"> More awareness programme is needed Sum incentive should given to the people who will perform well

Table 5: Proposal for Improvement in Operation of Birth and Death Registration

Name of the Proposal: improvement in operation of birth and death registration.	Priority No: 4
Location with the ULB: Head office	Responsibility for implementation /Project co-ordinator: HOD
Objective: Better & speedy service to the citizen	Nature of system / process: - Service delivery (Internal / Service delivery)
Description of item the project and benefits:	
<ul style="list-style-type: none"> • <i>Name of the system /process:</i> Building plan approval • <i>Bottleneck identified:</i> Manpower and fund, and infrastructure • <i>Reasons identified for the bottleneck:</i> Manpower and fund, and infrastructure • <i>Ideal stage identified:</i> Software to be developed to maintain computational procedure of delivery of birth and death certificate to the citizen • <i>Option for improvement:</i> Software to be developed to maintain computational procedure of delivery of birth and death certificate to the citizen • <i>Steps required during implementation:</i> Software to be developed to maintain computational procedure of delivery of birth and death certificate to the citizen 	
Duration of the project/time line for implementation :- 5 Year	Likely source of funding: - tied
Indicative cost :- Rs. 0.80 lakhs One time costs:- Rs. 0.80 lakhs Recurring costs:	Human resource : Available with in ULB
Implamentation monitoring indicators: Lesser time taken for providing service	
Any other external agencies involved: yes	No of days of involvement/ Institutions required :- yes

Birth and Death certificates are issued in two ways – a) Tatkal service (within 24 hrs.) and b) in general way, issued in 7 days. Also there is a provision of late registration within a year by the order of chairman with fee of Rs. 10/-. There is one register in municipality for this service. But the problem is in house delivery of children. The Flow diagram of Birth and death registration Certificate Department is in below. After the procedure of birth and death registration have become hassle free, the residents of Birnagar municipality are so happy but they have said a few words regarding the leprosy eradication campaign of the Urban Local Body of Birnagar because according to them, in spite of the wholehearted desire of the nodal agency, the awareness is limited.

Table 12: Flow diagram of Birth and Death Registration Department



The Review and rating services of different health related problems in given below.

Table 7: Proposal for Improvement of Operation of Birth and Death Registration

Dispensary	Ambulance Service	Medical store	Birth & death registration
Well	Well	Well	Good
Satisfactory	Satisfactory	Satisfactory	Satisfactory
Not Satisfactory	Satisfactory	Satisfactory	Satisfactory
New apparatus	Attest one ambulance	More free medicine /medical grant and computer to keep record	computer
Maintain regularly	Maintain regularly	Maintain regularly	Maintain regularly
Medical & technical training		Computer training	Computer training
24 (including .all)(inadequate for HHW scheme). There are (14+4) contractual staff	3-Driver, 2 cleaner(inadequate	(adequate_	1 Inadequate
1 Lacks	Do	Do	Do
Rs. 3/- outdoor, Rs. 150/- (maternity)	Rs.10/km		Rs.20/Birth Hrs, 25/Death
11,500(approx)	30 (app)		10(app)

Concluding Observation

The status and stature of the demographic scenario and the health care facilities have been corroborated with a lot of detailing above and it is clear that the Birnagar Municipality is densely populated with the intervention of the slum population and therefore the total demand of health care infrastructure by the residents of the Urban Local body is quite high. Th municipality is running successfully with the public health care infrastructure, reproductive care system, campaigning against AIDS and Leprosy etc. It is also worthy to mention that the municipality is extremely worried regarding the vector borne diseases, anemia or the deficiency in Hemoglobin in the patients, stomach upset etc. and after certain gaps per year the municipality organizes programmes, workshops etc. to cater special services and medical aids to the respondents. In spite of certain facilities regarding public health care, some problems have been addressed by the local people during the perception survey and those points have been informed accordingly by the researcher to the urban local body. It is expected that in near future, the problems will be addressed upto an optimum extent and through solution of those issues, the public health domain will be much more improvised at Birnagar.

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Machine Learning Approach for Smart Drainage Monitoring System

Dr. Rachana Jaiswal*

Introduction

It is well known fact that a poor drainage system can instigate many disease such as hepatitis A and E, typhoid, vector-borne diseases like malaria, lymphatic filariasis, dengue, dysentery etc. resulting in emergence of multi-resistant bacteria that could cause unpredictable clinical manifestations. Once people step into such dirty sewage for cleaning or unblocking the drainage, it will spread germs to whole area and make it worse for nearby residents (Benjamin Franklin Plumbing, 2022; The Sun Daily, 2014). In India, a total of 164103 dengue cases were recorded in 2021(Economic Times; 2021). As per United Nations Department of Economic and Social Affairs Disability report on transforming the world for persons with disability and sustainable development, it clearly mentioned that Good health and Well-being is in top 3 goals that can transform the world and believes that this will leave no one behind to lead a healthy life (United Nations, 2015). There has been multiple instances reported time to time by various media houses on death due to fall into an open manhole in various parts of India (India TV News, 2013; Tribune India, 2016; ABP Live, 2019; India Today, 2019; Indian Express, 2015). As per report from National Crime Records Bureau (NCRB), at least 2 human lives are lost every day due to open manholes and that need to find a better solution by replacing low-cost solution of like keeping a manhole lid open(The Times of India, 2021; The Daily Star, 2017). In light of these, the author proposed a framework that can monitor real-time data and alert the authorities to take preventive action rather than corrective

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action by way of Machine Learning technology and provide a better drainage system. With the proposed framework, one can identify the block immediately after its occurrence by using temperature sensor [102], ultrasonic sensor [103] and pressure sensor [104]. The entire system would be taken care by the centralized monitoring system using the Internet of Things [105]. It is very difficult to identify the blockages in drainage pipelines [101] even to clean or extract it. It is very important to find the exact location of the blockage to prevent the block in pipelines. It is very essential to identify the blocks at the earlier stage itself. It leads to many sufferings if they couldn't find the blockage immediately. Sufferings include bad odor, infections, apart from spoiling the entire day's activities. Blockage may occur knowingly or unknowingly. It is very important to identify the block immediately and to inform the concerned authorities [107].

Background

The flow of water through well-defined channels is known as 'drainage' and the network of such channels is called the drainage system. When compared with other countries based on their criteria the drainage management system differs. Basically, all the countries follow the same kind of drainage system. Few of the countries are mentioned below.

- **Drainage System in India**

India is the second most populated and developing country. Based on the locality, two types of drainage system are followed. Under water drainage system is used by highly developed urban areas. Open drainage system or nala system is used in rural areas. The drainage system is different but maintenance differs. Drains are blocked due to lack of maintenance.

- **Drainage System in Japan**

It follows two types of sewer lines i.e., one to collect domestic waste water and the other storm sewers for rainwater. And also, combination pipe which could collect the sewer and rain water together. The domestic water collected from every household would collectively combine in the 11 waste water treatment plants located in Yokohoma using mesh network across the city. Their water gets purified and released in river and oceans.

- **Drainage System in China**

Hydro Jetting, often known as green drain cleaning solution, is a technology employed in China. It removes the blockage with high-pressure water and a specific nozzle. The nozzle is connected to a flexible hose that emits water to disintegrate sludge, soap, grease, and other materials. As a result, the water flow has been enhanced, and the pipe lines have been cleaned, making them suitable for use right away.

- **Drainage System in Europe**

As Europe is snow prone area. There the under-water drainage system is mostly blocked due to ice, as water freezes to ice due to very low temperature. So, to remove the ice they use streamers as an ice melting instrument. Using this mechanism, the drain water which is in the form of ice is melted and make sure for the flow of drain water without any obstacles.

Brief Summary

Maintaining 'Drainage Management System' is an important aspect as it affects our daily hygiene. Using Internet of things [105] and sensor technology we can identify the problem in the drainage management system. The purpose of this idea is to provide managers to check drainage infrastructure frequently. The main purpose of drainage management system is to maintain the flow of water without any blocks. We can identify the blockage immediately by using temperature sensor [102], ultrasonic sensor [103] and pressure sensor [104]. And inform to concerned authorities [107] like sending a notification whenever block is identified. However, the same system is followed all over the world but there are few differences in maintenance. Basically we won't know the issue which is major or minor reason for causing the blockage. So using any smart devices they can find out solution for a particular problem. How to identify a blocked drain? Most common issue is slower draining shower, toilet or bathtub. Many areas get affected due to block drain. Need to contact capital plumbing immediately when there is a load raining. There are many issues of blocked drains to be aware of. Drainage water is treated in many ways. One of them is special water treatment plants. Also, the level of treatment varies greatly. Bar screening, screening, primary clarifier, aeration, secondary clarifier, chlorination, water analysis and testing, and effluent discharge are some of the treatment procedures. Generation and treatment of sewage in Hyderabad: In greater Hyderabad including twin cities totally 1781 million liters sewage is generated each day. There are 22 number of sewage treatment plants. Only the 47% of the drain water is treated whereas the other 53% isn't treated would be followed into the musli and Hussain sagar. 50 villages would get affected by this. For installing a plant 8-10 KLD capacity would cost 2.5-3 lakhs. Even though the decentralized waste water treatment system is low cost, but regular maintenance is necessary for the sustainability of plant. The current study is a smart drainage management system that monitors specific parameters beneath the manhole and clears blockages based on the signals received.

Detailed Description

It may be a major or minor issue according to the problems faced when there is a block occurred in the drain, but should not wait for the situation to be happened. So having the knowledge about the blocked drain will obviously bring the solution and also the preventive measures. Blockage can also lead to very

harmful and also costly repair too. The most important thing is to understand the blocked drainage, dynamics and its structure. The downpipe blocking may be depending on the location of the blockage and the type of blockage, methods of cleaning can be from easy to complex. The only thing is to know the parts of drainage and how do they work.

Identifying a Blocked Drain

The drainage may be blocked from anywhere, may be from inside or outside. The Identification of blocks is difficult as it runs underground. For example, in kitchen we can find the water is flowing from sink, but it is not easy to guess whether the pipe is damaged or there is a block. It is very easy to find the blocks from kitchen or sink, but it is hard in finding the blocks in any septic or sewer system. It could affect the sewer line, septic system or other parts. To find out the problem, first they need to know how it caused. Various signs may indicate an imminent or already existing blockage. These are:

- A slow draining sink, tub, or shower.
- Low water pressure in parts or all the system especially sink or shower.
- A sewage backup into a sink, toilet, or bathtub.
- Gurgling noise from the drain as a result of water hitting a blockage and causing bubbles.
- When water-using facilities react to each other, like the toilet making noise at the stop or start of the washer.
- When the system permits only one facility at a time to drain properly.
- Unpleasant or foul odor from the drain.
- A bubbling in the toilet when a sink closest to it is turned on Saturated soil or pool of water in the surrounding.

Factors Causing the Blocked Drains

The blockage of under water drainage system is due to the obstacles in the flow of sewer. The causes of the blocked drains are due to human activities and some are due to natural disturbances. Some of the causes are as follows:

- **Tree Roots:** This is one of the usual suspects in sewer water. We can find roots in old buildings where roots invade the pipeline. As a result, causing disturbance in the flow of rainwater. Thereby leading to blockage of drain.
- **Paper Products:** In most of the toilets, the toilet paper has become very common. By this kind of paper products let them go into the drains. Not only toilet paper but other paper products like tissues, baby diapers, wipes and even feminine hygienic products etc.

- **Kitchen Waste:** Kitchen waste includes leftover of food particles i.e., oil, fat, and grease. Which are not friendly with the plumbing system and lead to sewer blockage of drain. **Hair:** The hair that falls off your body as bath or shave can accumulate and cause slow flow or complete blockage.
- **Ageing of Pipes:** Over a period of time, the pipes in any household system or in any building disintegrate; drop and soil erode allowing the pipes to sag. Remember a combination of soap and detergent it may lead to serious blockage.
- **Leakes from Pipes:** The constant loss of water from a pipe can create erosion, causing the soil surrounding the pipe to dip, droop, or shift. The chemical properties of the soil are also altered by leaking water, and the pipe may burst as a result.
- **Scales from Pipe:** The chemical components which are left after the usage of products like bathing soaps, body wash, shampoo, conditioners etc., Form a huge blockage.
- **Poor Plumbing:** An incorrect construction of the pipes leads to huge disturbances in the sewer water mainly while fixing the slow pipes. As a result, the system works adversely. This thing should be done professionally to ensure effective waste disposal and minimal brain damage.

Advantages of Smart Drain System

- Prevents the accumulation of stagnant water, in which it can encourage mosquitoes to breed and prevents from bad smell.
- Due to overtime of standing water can make soil muddy which cause soil to erode and reduces soil erosion.
- Drainage systems can remove the toxic material and disease organisms away from your yard if they are in good condition.
- Roads are blocked leading to traffic jams, when the drainage systems are blocked.
- Potholes on the major city roads have been formed due to the heavy water flow which tends to accidents such kind of problems can be solved.
- Water logging occurs when pipes are blocked due to garbage. If the pipes are cleaned regularly blockage will not be there.
- This problem can be minimized when there is a proper and correct time of intimation is done to the concerned authorities [107].

How the Waste Water is Cleaned?

To ensure safe and effective operation-based water purification in water treatment plants requires specialist. The whole process involves in six stages.

- **Bar Screening** In this process, the sewage is central grits or vertical bars. So that they can remove solid substances like plastic, paper, metal cans etc.
- **Grit tank** In this process, the waste water flows through grit tank very slowly. Due to the slow moment of the water sand, pebbles and soil settle at the bottom of the tank.
- **Settling tank** In this process, fluid flows into settling tank. Solid waste, such as faces, settles during this procedure. Soaps, oils, and grease float to the surface of the waste water. Sludge is the waste material that collects to the bottom of the tank. Scum is the material that floats on the surface of the water. We regularly remove scum and sludge. The water which is left out in the middle is called clarified water.
- **Aeration tank** This method involves transferring cleared water to an aeration tank where biological or organic waste is eliminated. The air blowers in this tank create a bubble of air. So that aerobic bacteria can thrive and feed on organic pollutants.
- **Clarifier** The mixture is pumped into a clarifier tank, where the activated sludge settles due to gravity. The sludge produced in this tank, as well as the sludge produced in the settling tank, is sent to the digester for anaerobic bacteria to decompose. Biogas is created in the digester tank. This can be utilized as a source of energy. Electricity is also generated from biogas. The activated sludge is placed in dry sand beds. As a result, some of the water in the sludge evaporates. The remainder flows away through sand beds, allowing the muck to dry. The sludge can be dried and used to make fertilizers or compost.
- **Disinfectant** In this process the water which is left out is being treated with chlorine. Because of this procedure water will be free of phosphorus compounds, nitrogen compounds and bacteria. It is a chemical process. Chlorine tablets are also added in this tank to kill germs. This process is called chlorination. Then, finally this water is let off into rivers and oceans.

Identifying a Blockage Using Sensors

The smart drainage system is very important for municipal infrastructure. Most of the people are facing problems under drainage cleaning. To prevent the problem new technology should be implemented. It is very essential to build a system in such a way that it should identify blockage to overcome the problem. The system uses various sensors like temperature sensor [102], ultrasonic sensor [103] and pressure sensor [104]. A temperature sensor [102] is a device which is used to measure the temperature. It measures temperature of solid, liquid and air. Ultrasonic sensor [103] detects distance between the objects by using sound

waves. Pressure sensor [104] is used to calculate rate of flow. Whenever there is a blockage in pipe [203], it will be identified by the sensors and collect the data. When a specific sensor reaches to the threshold level then the problem is updated via message to concerned authority [107] for further actions. By this smart drainage system, we can monitor and identify the blockage so that it ensures blockage prevention.

- **Generation and Treatment** For installation of a water treatment plant of a water treatment plant of 8-10 KLD capacity, it costs around 2.5-3 lakhs. 1781 million liters amount of estimated sewage is generated each day in Hyderabad. 772 million liters amount of sewage is treated in various waste water treatment plants in the city (47%). The rest of the sewage (53%) is untreated and released mostly into the Musi River or into the Hussain Sagar. There are 22 sewage treatment plants in Hyderabad.

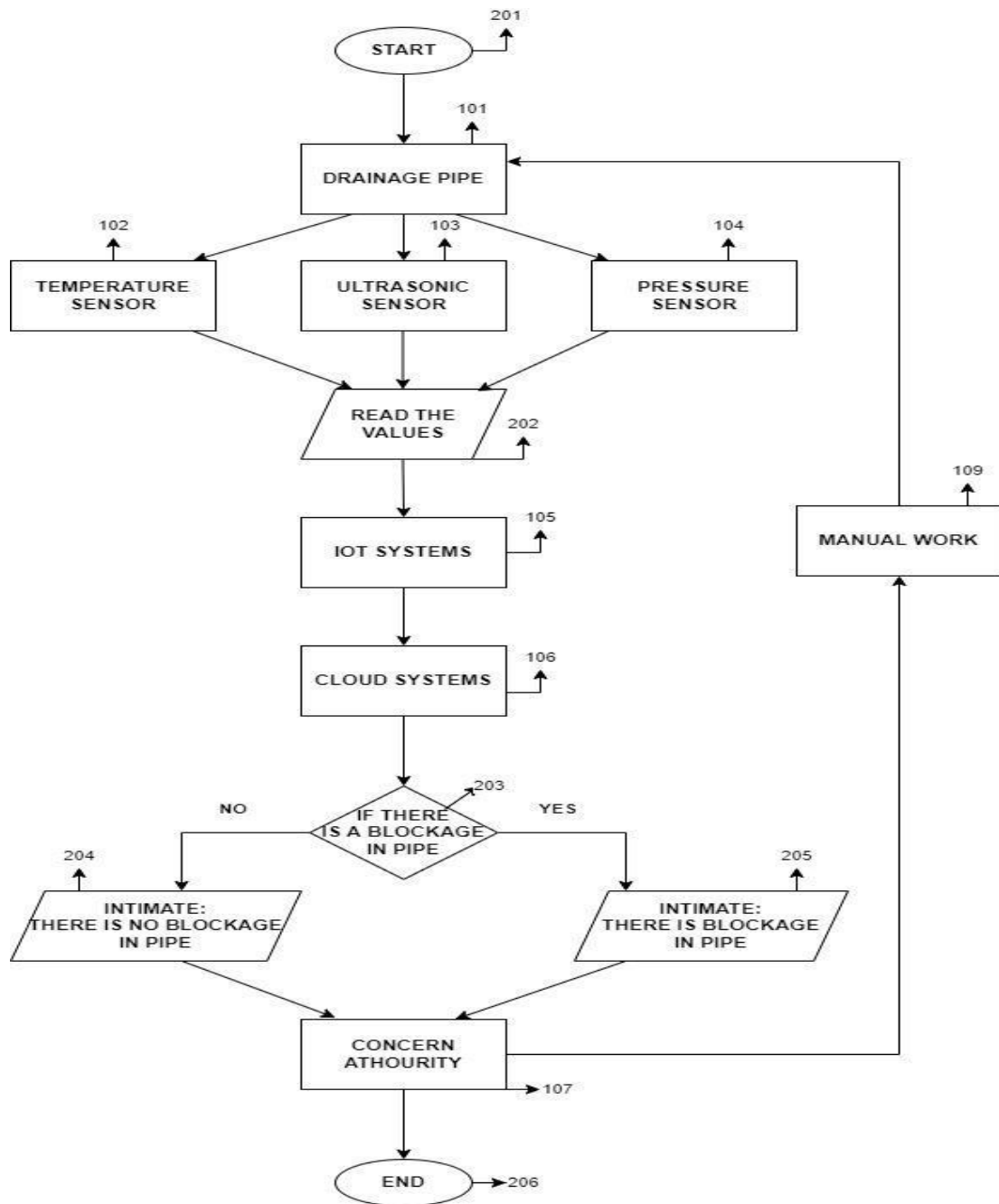
With the Proposed Framework, System Would be able to get below

- When a blockage occurs, the sensor will use IOT to identify the blockage right away.
- Data would be sent from the sensor to the cloud. The acquired data is forwarded from the cloud to the appropriate authority. The concerned authority takes further action based on the revised facts.
- Through cloud acknowledgement is also updated after the blocked drainage is cleared. This alert prevents the user to not in the crowded or populated area.
- Smart Drainage Monitoring System is voiding the end user to the public area prevent the end user family and his friends.
- The system employs a number of sensors, including a temperature sensor, an ultrasonic sensor, and a pressure sensor. A temperature sensor is a device for measuring temperature. It is a thermometer that measures the temperature of solids, liquids, and air. Using sound waves, an ultrasonic sensor detects the distance between two objects.

Therefore the propose framework will have the following features:

- Detects the specific drain where the blockage occurs.
- Immediate information of the blockage.
- The system governs the flow of sewage from the pipes.
- Use of flow sensors to detect the variations in the flow.
- Get the prior alerts of blockages and locate them using IOT.
- Trace location using GPS and send SMS through GSM.

Proposed Flow



Conclusion

In this study, the author has raised the issues with the poor drainage system that is unhygienic and alarming for the environment and human being and proposed a model for prevention of blockage of drainages.

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An Evaluative Study of Effectiveness of Co-operative Banks with Special Reference to Karnataka State

Dr. Bharati Math*

Introduction

A co-operative bank is a financial entity which belongs to its members, who are at the same time the owners and the customers of their bank. Co-operative banks are often created by persons belonging to the same local or professional community or sharing a common interest. Co-operative banks generally provide their members with a wide range of banking and financial services (loans, deposits, banking accounts etc.) The present study deals with the evaluation of District Central Co-operative banks with special reference to Karnataka State which are organized in financial services. For analyzing the performance of District Central Co-operative Banks, the data for the past five years viz. 2014-15 to 2018-2019 have been collected and various techniques of measuring performance like ratio analysis and statistical techniques have been applied to analyze and draw conclusion.

Need for the Study

Due to certain changes in the banking sector and new economic policies, the co-operative sectors underwent a crisis. At the same time the failure of some good schedule banks and urban banks has also attracted the attention of the people and raised the question of security of their funds. So that needs to find actual financial stability of the co-operative banks and assure investors about the operational efficiency of the co-operative banks. Distinctive features of the co-operative banks as compared to other banks have motivated the researcher to undertake research on the functioning level of the DCCBs. In fact, no research has been undertaken the study in relation to the functioning performance of DCCBs. Therefore, the researcher has undertaken the research study entitled “An Evaluative study of effectiveness of Co-operative banks with special reference to Karnataka State”.

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Review of Literature

The present review tries to explore the various concepts of functioning of Co-operative Banks. The different banks where, financial functioning is studied are reviewed and gaps are identified in terms of scope for further model development and sectorial application. Following are the few reviews of literature mentioned below.

Jain (2001) has conducted a comparative performance analysis of District Central Co-operative Banks (DCCBs) of Western India, namely Maharashtra, Gujarat and Rajasthan and found that DCCBs of Rajasthan have performed better in profitability and liquidity as compared to Gujarat and Maharashtra.

Singh Fulbag and Singh Balwinder (2006) in their study "Funds Management in Central Cooperative Banks- Analysis of Financial Margin" attempted to estimate the impact of identified variables on the financial margin of the central cooperative banks in Punjab with help of correlation and multiple stepwise regression approach. The ratio of own funds to working funds and the ratio of recovery to demand were observed to be having positive significant influence on financial margin, whereas over dues to total loans were found to be negatively associated with the concerned parameter. A high percentage of own funds and timely recovery of previous loans outstanding, as a source of funding new loans by the bank, increased the financial margin in these banks.

Bodla and Verma (2006) studied the performance of SBI and ICICI through the CAMEL model for the period from 2000-2005. The study concluded that the liquidity position of both banks is sound and did not differ significantly.

Lakshmanan and Dharmendran (2007) tried to study the performance of all the District Central Cooperative Banks in Tamil Nadu considering some financial indicators. It was found that deposits and loans of the bank have growth rate but the overdues of the banks are increasing. It may be due to poor recovery rate. It was suggested that the banks should try to mobilize more deposits from the untapped sources and should try to extend loans to uncovered sectors. The banks should take proper recovery proceedings and level of Non-Performing Assets should be brought down to maintain liquidity and profitability.

Koli and Landage (2007) tried to analyze the financial performance of Ratnagiri DCCB. It was observed that increase in fixed deposits is more than saving and current deposits. It was also found that the working capital funds showed a decreasing trend which means that the bank is heavily dependent on the borrowings which is not good for the performance of the bank. The trend in loan recovery shows that the bank was trying its best to increase the recovery rate and the recovery efforts were positively increasing with the increase in loan transactions. With the improvement in recovery performance, i.e., reduction in Non-Performing Assets (NPAs), the bank was raising its level of profits.

Shah Deepak (2007) investigated on a case study of Sangli and Buldana District Central Cooperative Banks regarding the financial health of credit cooperatives in Maharashtra and found NPA or over dues as main culprit for deterioration in health of these banks. The study revealed that both these banks showed a decline in their financial health and economic viability during the late nineties as against the early nineties period.

Mishra J.K. and Jain M. (2007) studied various dimensions of customer satisfaction in nationalized and private sector banks, the study concluded that satisfaction of the customers is an invaluable asset for the modern organizations, providing unmatched competitive edge, it helps in building long term relationship as well as brand equity.

Ravi R.A. (2008), in his comparative study, indicates that there is a positive perception for both the sectors, but still the public sector banks must make a sensible effort to meet the customer needs and requirements in the awakes of competition and ever-increasing expectations of customers. The change in nature, structure and competition pressurize the public sector banks to change their attitude towards the market and market-related issues. It is significant that they concentrate on the customization of products which creates a positive user perception. This will be the only way to meet the challenge posed by private sector banks.

Hussein and Al-Tamimi (2010) investigated factors influencing the performance of Islamic banks and conventional banks in (UAE) during 1996 to 2008. The study revealed that liquidity and concentration were significant determinants of conventional bank's performance, while cost and number of branches significantly influenced the performance of Islamic banks.

Chander and Chandel (2010) analyzed the financial efficiency and viability of HARCO Bank and found poor performance of the bank on capital adequacy, liquidity, earning quality and the management efficiency parameters.

Statement of the Problem

The co-operative credit institutions have been facing innumerable prominent problems. Huge administrative expenses and lack of managerial skill of the employee are the major problems of the co-operative banks in India. This is because of lack of training and education to the employees. They are expected to provide better services on par with the nationalized banks and even better than them.

Up to 1990 the DCCBs has a monopoly business, and they were covering about 70 percent of the population particularly in rural area through their business. After introduction of New Economic Policy (NEP) the business of the DCCBs has become very competitive and they are facing stiff competition in their area of operation where they must flourish their business before Nationalized bank,

Commercial Bank, Private Bank, Foreign Banks, Non-Banking Financing Agencies, and others. The overall all profitability of the DCCBs is also going down year to year. Out of 18 DCCBs in Gujarat only 10 are earning profit and 8 are in loss. The percentage of NPA of the DCCB is also exceeding from 35 to 40 percent in most of the DCCBs. Looking to the present situation prevailing around DCCBs it is revealed that DCCBs must make themselves more effective and efficient in operation so that they can face the stiff competition and justify their objective of the existence. The present research study will focus on the overall working of the DCCBs and examine the operational efficiency with the help of the objectives.

Objectives of the Study

The broader objectives of the study are as under:

- To examine the trends in the financial status, growth and performance of District Central Co-operative Banks in Karnataka State.
- To analyze the profile and operational trends of the selected District Central Co-operative Banks in Karnataka State.
- To appraise the financial performance of the District Central Co-operative Banks with the help of Profitability analysis.

Hypothesis Testing

Null Hypothesis: There is no significant difference in profitability of DCCBs.

Scope of the Study

- The scope of the study is defined in terms of performance aspects and period under focus.
- The researcher has selected District Central Co-operative Bank for the study covering Vijapur, Gulbarga & Yatgiri, Bagalkot, Gadag, Dharwad and Hubli District.
- The study is based on the secondary data through annual reports of the banks for a period of 5 years from 2014-15 to 2018-19.
- The performance of the DCCBs were measured through profitability efficiency.

Research Methodology

- **Sources of Data:** The study is based on secondary data.
- **Secondary Data:** The secondary information was obtained from the annual reports of selected banks, reports of RBI, websites, journals, and magazines.
- **Period of Study:** The present study covers the span of five years i.e. from 2014-15 to 2018-2019.
- **Sampling Design:** In this study, the District Central Co-operative Banks of 6 districts have been included.

Sample Composition

Name of the District	Name of the Bank
Vijayapur	Vijayapur District Central Co-operative Bank (VDCCB)
Kalburgi and Yatgiri	Kalburgi and Yatgiri District Central Co-operative Bank (KYDCCB)
Bagalkot	The Bagalkot District Central Co-operative Bank (TBDCB)
Dharwad	Karnataka Central Co-operative Bank (KCCB)
Hubli	
Gadag	

- **Framework Analysis:** The functions of District Central Co-operative Banks of Karnataka state will be measured through 2 different techniques they are as follows:
 - **Accounting Techniques:** The functions of DCCB will be measured through comparative analysis and ratio analysis.
 - **Profitability Ratio:** Interest Income to Working Fund Ratio, Interest Expended to Working Fund Ratio, Spread to Working Fund Ratio, Non-Interest Income to Working Fund Ratio, Non-Interest Expenditure to Working Fund Ratio, Burden to Working Fund Ratio, Net Profit to Working Fund Ratio, Interest Income to Total Income Ratio, Interest Expenditure to Total Expenditure Ratio & Return on Capital Employed Ratio.
 - **Statistical Techniques:** ANOVA test applied for evaluating the performance of DCCBs.

Analysis And Interpretation

Profitability Analysis

In today's globe of vigorous competition where all business units and industries are demanding to continue to exist in the market, the banking sector cannot be detached from competition in market. As liberalization and globalization have opened the door for complimentary entry in any business, the co-operative sector of banking has to face competition from not only nationalized or commercial banks but also from private financial institutions and foreign banks. Three decades back, profit had a rear seat or came as a product. They never intentionally intended their business of banking from the profit point of view. But today profit is a sign of vitality, financial strength and success in competition scenario. It ensures survival and growth and can eventually become the only parameter for performance evaluation. Hence for a banker, profit has become very significant. **J.M. Keynes** remarked; "the profit is the engine that drives the business enterprise."

In the word of **Murthy** “The most important measure of profitability of enterprise is ratio.” The profitability of co-operative banking sector can be measured by using the following types of profitability ratios:

- **Interest Income to Working Funds Ratio**

Interest income to working fund is an important ratio of measuring the efficiency of management regarding employing its working funds in an optimum manner. This ratio indicates the interest earned on each rupee of working funds employed.

$$\text{Interest Income to Working Fund} = \frac{\text{Interest Income}}{\text{Working Fund}} \times 100$$

Interest Income = Interest on loans and advances plus interest on government securities plus interest on other securities and income from bills discounted.

Working funds these are total resources i.e., total liabilities or total assets of a bank as on a particular date.

- **Interest Expended to Working Funds Ratio**

In banking sector interest paid occupies a major portion of total operating cost and affects profitability.

$$\text{Interest Paid to Working Fund Ratio} = \frac{\text{Interest Paid}}{\text{Working Fund}} \times 100$$

Interest Paid= interest paid on deposits and borrowings.

- **Spread to Working Funds Ratio**

Spread is the difference between interest earned and interest paid by the bank. It is difference between the income earned by deployment of funds and the cost of funds.

$$\text{Spread to Working Fund Ratio} = \frac{\text{Spread}}{\text{Working Fund}} \times 100$$

$$\text{Spread} = \text{Interest earned} - \text{Interest paid}$$

- **Non-Interest Income to Working Funds Ratio**

The other operational income of a bank is non-interest income, which includes commission, brokerage, gains on revaluation of assets etc. This ratio measures the income from operations, other than lending of the total income

$$\text{Non Interest Income to Working Fund Ratio} = \frac{\text{Non - interest Income}}{\text{Working Fund}} \times 100$$

- **Non-Interest Expenditure to Working Funds Ratio**

This ratio represents the share of manpower expenses and other contingent expenses from the working fund.

$$\begin{aligned} \text{Noninterest expenditure to Working Fund Ratio} \\ = \frac{\text{Non - interest expenses}}{\text{Working Fund}} \times 100 \end{aligned}$$

- **Burden to Working Funds Ratio**

Burden means the difference between non-interest expenditure and non-interest income of a bank.

$$\text{Burden to Working Fund Ratio} = \frac{\text{Burden}}{\text{Working Fund}} \times 100$$

- **Net Profit to Working Funds Ratio**

Net profit to working fund ratio measures overall profitability of the Co-operating Banks. This ratio reveals net earnings of the CBs by utilizing funds

$$\text{Net Profit to Working Fund Ratio} = \frac{\text{Net Profit}}{\text{Working Fund}} \times 100$$

- **Interest Income to Total Income Ratio**

Interest income to total income shows the proportionate contribution of interest income in total income.

$$\text{Interest Income to Total Income Ratio} = \frac{\text{Interest Income}}{\text{Total Income}} \times 100$$

- **Interest Expended to total Expenditure Ratio**

Interest expenses to total expenses reveals the expenses incurred on interest in proportion to total expenses.

$$\text{Interest Expended to Total Expenditure Ratio} = \frac{\text{Interest Expenditure}}{\text{Total Expenditure}} \times 100$$

- **Return on Capital Employed Ratio**

The primary objective of making investment in any business is to obtain adequate return on capital invested. Therefore, to measure the overall profitability of the bank, it is essential to compare profit with capital employed. It is also called "Return on Investment" (ROI).

$$\text{Return to Capital Employed Ratio} = \frac{\text{Return}}{\text{Capital Employed}} \times 100$$

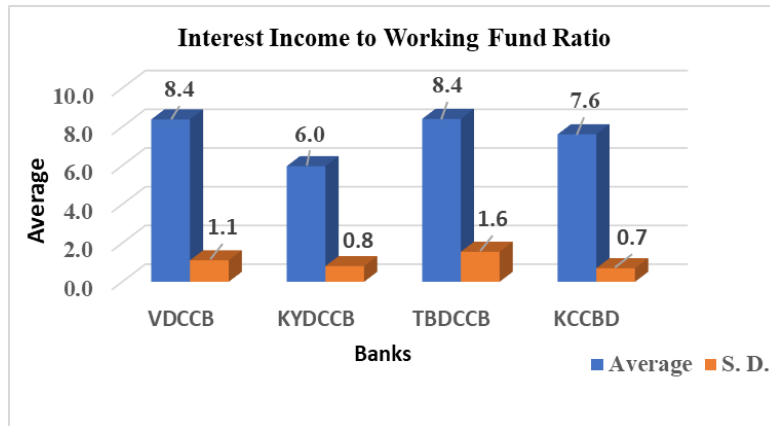
Capital Employed = Owners funds plus long- term deposits.

Analysis of Profitability of the Banks under Study

Table 1: Interest Income to Working Fund Ratio

Banks	2014-15	2015-16	2016-17	2017-18	2018-19	Average	S. D.
VDCCB	9.94	8.95	8.36	7.35	7.33	8.39	1.11
KYDCCB	6.55	6.51	5.55	6.51	4.73	5.97	0.81
TBDCCB	11.13	7.31	7.83	7.62	8.16	8.41	1.55
KCCBD	8.14	8.31	6.71	7.87	7.05	7.62	0.70

Source: Computed from the published reports of the banks under study

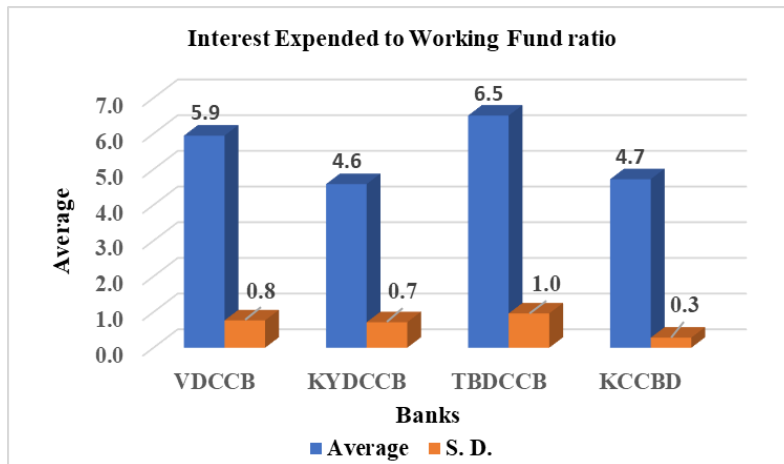
Graph 1

Graph 1 portrays that the average rate is the highest (i.e. 8.4) in case of VDCCB and TBDCCB and followed by (7.6%) in case of KCCBD and it was the least (6.0%) in KYDCCB.

On the other hand, the analysis of consistency in performance with regard to interest income reveals that KCCBD has demonstrated the most consistent performance among all the selected banks by securing the least standard deviation (i.e. 0.70) which indicates the quantum of risk associated with interest income of KCCBD.

Table 2: Interest Expended to Working Fund Ratio

Banks	2014-15	2015-16	2016-17	2017-18	2018-19	Average	S. D.
VDCCB	6.99	6.49	5.66	5.16	5.43	5.94	0.77
KYDCCB	5.32	4.94	4.69	4.55	3.42	4.59	0.71
TBDCCB	8.22	6.00	6.25	6.10	5.97	6.51	0.96
KCCBD	4.85	5.11	4.53	4.73	4.39	4.72	0.28

Graph 2

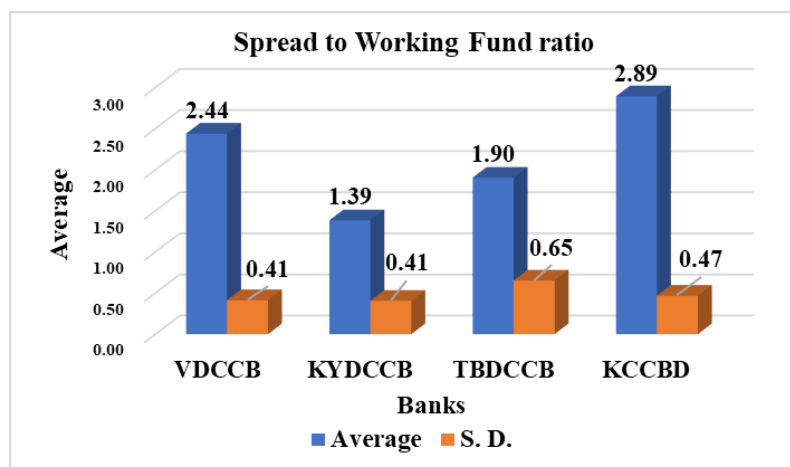
Graph 2 portrays that the average rate is the highest (i.e. 6.5) in case of TBDCCB and followed by (5.9%) in case of VDCCB and (4.7%) in case of KCCBD and it was the least (4.6%) in KYDCCB.

On the other hand, the analysis of consistency in performance with regard to interest expended reveals that KCCBD has demonstrated the most consistent performance among all the selected banks by securing the least standard deviation (i.e. 0.30) which indicates the quantum of risk associated with interest expended of KCCBD.

Table 3: Spread to Working Fund Ratio

Banks	2014-15	2015-16	2016-17	2017-18	2018-19	Average	S. D.
VDCCB	2.95	2.47	2.70	2.19	1.90	2.44	0.41
KYDCCB	1.22	1.57	0.87	1.96	1.31	1.39	0.41
TBDCCB	2.91	1.31	1.58	1.52	2.20	1.90	0.65
KCCBD	3.29	3.20	2.18	3.15	2.66	2.89	0.47

Graph 3

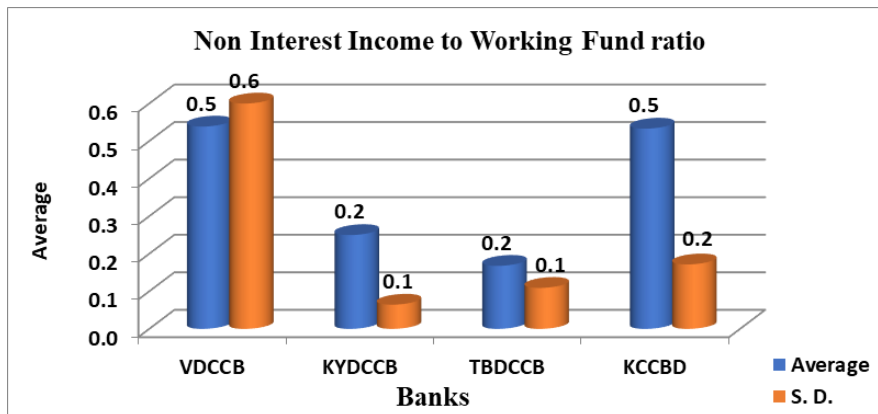


Graph 3 portrays that the average rate is the highest (i.e. 2.89) in case of KCCBD and followed by (2.44%) in case of VDCCB and (1.9%) in case of TBDCCB and it was the least (1.39%) in KYDCCB.

On the other hand, the analysis of consistency in performance with regard to spread reveals that VDCCB and KYDCCB has demonstrated the most consistent performance among all the selected banks by securing the least standard deviation (i.e. 0.41) which indicates the quantum of risk associated with spread of VDCCB and KYDCCB.

Table 4: Non-Interest Income to Working Fund Ratio

Banks	2014-15	2015-16	2016-17	2017-18	2018-19	Average	S. D.
VDCCB	0.86	1.45	0.12	0.11	0.16	0.54	0.60
KYDCCB	0.18	0.24	0.22	0.25	0.36	0.25	0.06
TBDCCB	0.10	0.36	0.11	0.14	0.13	0.17	0.11
KCCBD	0.72	0.35	0.53	0.38	0.69	0.53	0.17

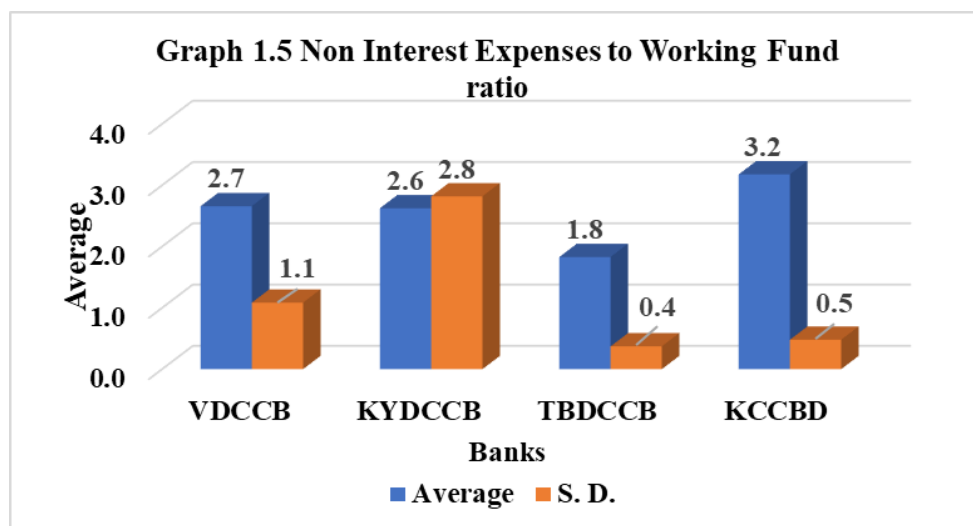
Graph 4

Graph 4 portrays that the average rate is the highest (i.e. 0.6) in case of VDCCB and followed by (0.5%) in case of KCCBD and it was the least (0.2%) in case of KYDCCB and TBDCCB.

On the other hand, the analysis of consistency in performance with regard to non-interest income reveals that TBDCCB and KYDCCB has demonstrated the most consistent performance among all the selected banks by securing the least standard deviation (i.e. 0.1) which indicates the quantum of risk associated with non-interest income of TBDCCB and KYDCCB.

Table 5: Non-Interest Expenses to Working Fund Ratio

Banks	2014-15	2015-16	2016-17	2017-18	2018-19	Average	S. D.
VDCCB	4.13	3.42	2.32	1.81	1.60	2.66	1.08
KYDCCB	1.02	1.39	1.00	2.10	7.60	2.62	2.82
TBDCCB	2.28	1.51	1.67	1.51	2.17	1.83	0.37
KCCBD	3.79	3.32	2.48	3.01	3.29	3.18	0.48

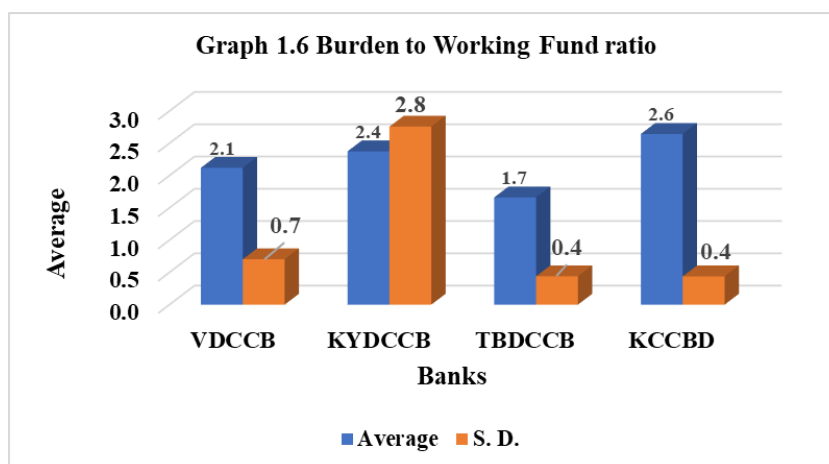


Graph 5 portrays that the average rate is the highest (i.e. 3.2) in case of KCCBD and followed by (2.8%) in case of KYDCCB and (2.7%) in case of VDCCB and it was the least (1.8%) in TBDCCB.

On the other hand, the analysis of consistency in performance with regard to non-interest expenses reveals that TBDCCB has demonstrated the most consistent performance among all the selected banks by securing the least standard deviation (i.e. 0.4) which indicates the quantum of risk associated with non-interest expenses of TBDCCB.

Table 6: Burden to Working Fund Ratio

Banks	2014-15	2015-16	2016-17	2017-18	2018-19	Average	S. D.
VDCCB	3.27	1.98	2.20	1.70	1.44	2.12	0.70
KYDCCB	0.84	1.15	0.78	1.86	7.25	2.38	2.76
TBDCCB	2.18	1.15	1.56	1.37	2.04	1.66	0.44
KCCBD	3.07	2.97	1.95	2.63	2.60	2.64	0.44

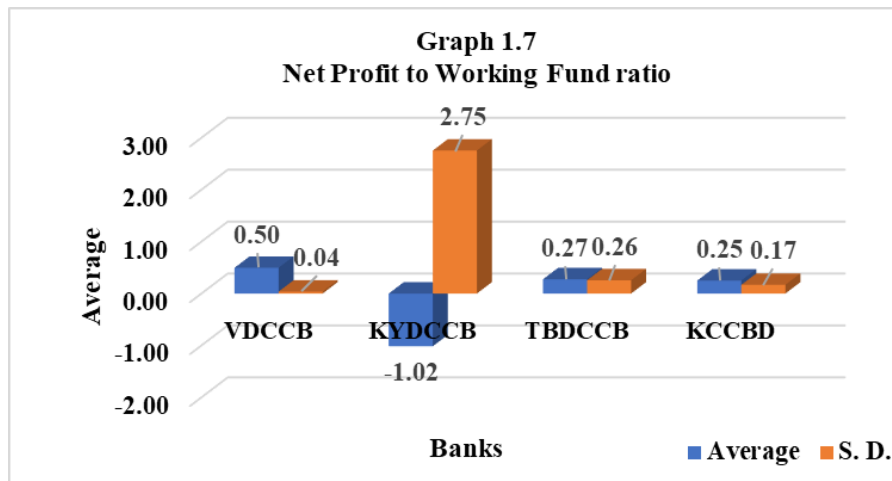


Graph 6 portrays that the average rate is the highest (i.e. 2.8) in case of KYDCCB and followed by (2.6%) in case of KCCBD and (2.1%) in case of VDCCB and it was the least (1.7%) in TBDCCB.

On the other hand, the analysis of consistency in performance with regard to burden reveals that TBDCCB and KCCBD has demonstrated the most consistent performance among all the selected banks by securing the least standard deviation (i.e. 0.4) which indicates the quantum of risk associated with net profit of TBDCCB and KCCBD.

Table 7: Net Profit to Working Fund Ratio

Banks	2014-15	2015-16	2016-17	2017-18	2018-19	Average	S. D.
VDCCB	0.55	0.49	0.50	0.48	0.45	0.50	0.04
KYDCCB	0.38	0.29	0.09	0.10	-5.94	-1.02	2.75
TBDCCB	0.73	0.16	0.18	0.15	0.16	0.27	0.26
KCCBD	0.22	0.23	0.23	0.52	0.05	0.25	0.17

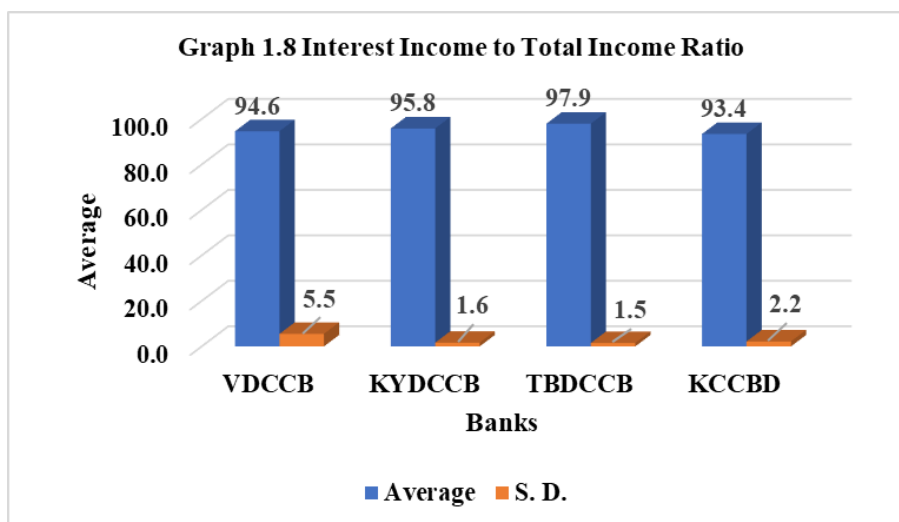


Graph 7 portrays that the average rate is the highest (i.e. 2.75) in case of KYDCCB and followed by (0.5%) in case of VDCCB and (0.27%) in case of TBDCCB and it was the least (0.25%) in KCCBD.

On the other hand, the analysis of consistency in performance with regard to net profile reveals that KYDCCB has demonstrated the most consistent performance among all the selected banks by securing the least standard deviation (i.e. -1.02) which indicates the quantum of risk associated with net profit of KTDCCB.

Table 8: Interest Income to Total Income Ratio

Banks	2014-15	2015-16	2016-17	2017-18	2018-19	Average	S. D.
VDCCB	92.01	86.08	98.64	98.54	97.88	94.63	5.52
KYDCCB	97.28	96.45	96.16	96.32	93.00	95.84	1.64
TBDCCB	99.09	95.29	98.63	98.24	98.42	97.94	1.51
KCCBD	91.90	95.99	92.72	95.39	91.04	93.41	2.18

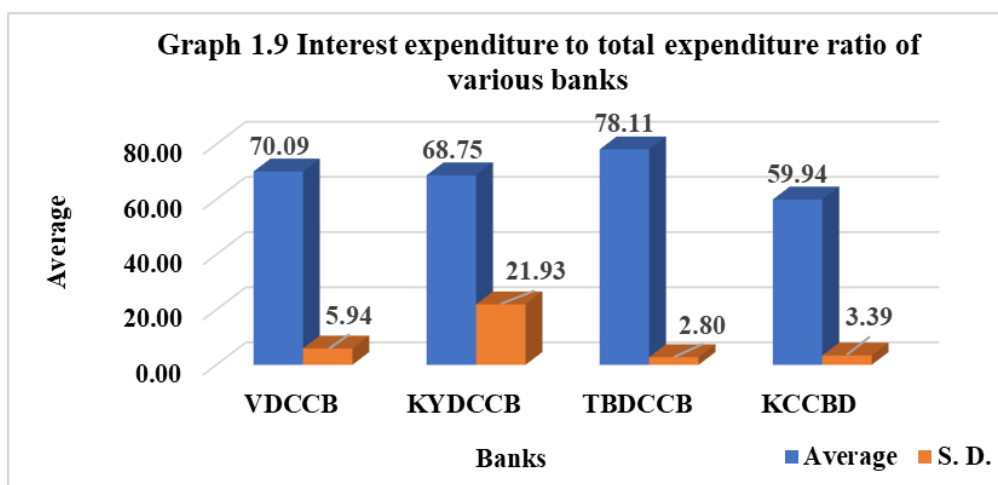


Graph 8 portrays that the average rate is the highest (i.e. 97.9) in case of TBDCCB and followed by (95.8%) in case of KYDCCB and (94.6%) in case of VDCCB and it was the least (93.4%) in case of KCCBD.

On the other hand, the analysis of consistency in performance with regard to interest income reveals that TBDCCB has demonstrated the most consistent performance among all the selected banks by securing the least standard deviation (i.e.1.5) which indicates the quantum of risk associated with interest income of TBDCCB.

Table 9: Interest Expenditure to Total Expenditure Ratio

Banks	2014-15	2015-16	2016-17	2017-18	2018-19	Average	S. D.
VDCCB	62.84	65.45	70.95	74.00	77.21	70.09	5.94
KYDCCB	83.90	78.00	82.41	68.39	31.04	68.75	21.93
TBDCCB	78.27	79.93	78.89	80.14	73.29	78.11	2.80
KCCBD	56.17	60.65	64.62	61.12	57.13	59.94	3.39



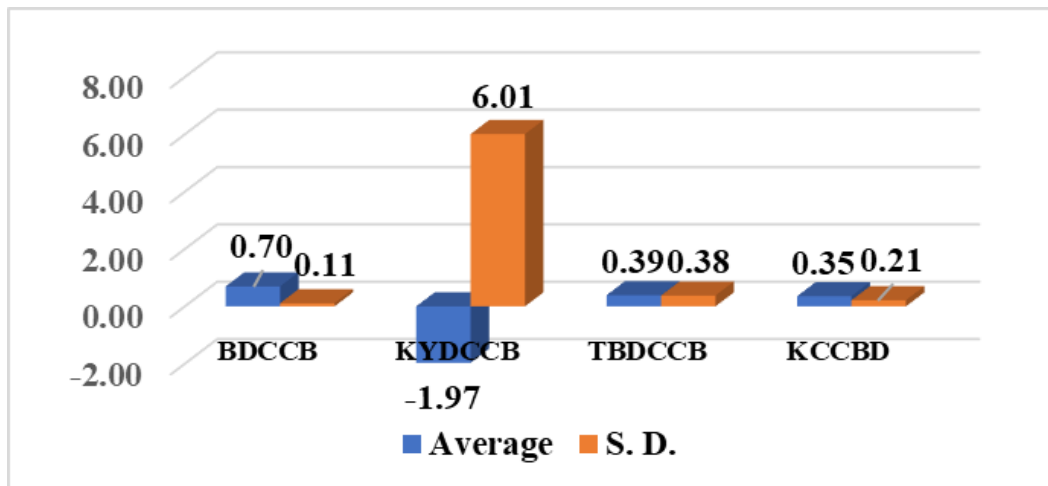
Graph 9 portrays that the average rate is the highest (i.e. 78.11%) in case of TBDCCB and followed by (70.09%) in case of VDCCB and (68.75%) in case of KYDCCB and it was the least (59.94%) in KCCBD.

On the other hand, the analysis of consistency in performance with regard to interest expenditure reveals that TBDCCB has demonstrated the most consistent performance among all the selected banks by securing the least standard deviation (i.e. 2.80) which indicates the quantum of risk associated with net profit of TBDCCB.

Table 10: Return on Capital Employed

Banks	2014-15	2015-16	2016-17	2017-18	2018-19	Average	S. D.
BDCCB	0.84	0.73	0.73	0.63	0.55	0.70	0.11
KYDCCB	1.20	1.00	0.32	0.32	-12.70	-1.97	6.01
TBDCCB	1.07	0.23	0.26	0.20	0.20	0.39	0.38
KCCBD	0.34	0.34	0.36	0.67	0.07	0.35	0.21

Graph 10: Return on Capital Employed



ANOVA Test

ANOVA test is employed to analyze the significant difference among the District Central Co-operative Banks under the present study in respect of their profitability ratios owing to the effect factors simultaneously. The following hypotheses are set:

Null Hypothesis (H₀): "There is no significant difference among the District Central Cooperative Banks in respect of their profitability ratios"

Alternative Hypothesis (H_a): "There is a significant difference among the District Central Cooperative Banks in respect of their profitability ratios"

The result of ANOVA Test at 5% (0.05) level of significance is portrayed in Table 11.

Table 11; ANOVA Test for Profitability Ratios

Types of Ratio	Banks	Sum of Squares	Df	Mean Square	F	Sig.	Rem
Interest Income to Working Fund Ratio	Between Banks	19.655	3	6.552	5.474	.009	Sig
	Within Banks	19.149	16	1.197			
	Total	38.804	19				
Interest Expended to Working Fund Ratio	Between banks	13.225	3	4.408	8.384	.001	Sig
	Within banks	8.413	16	.526			
	Total	21.638	19				
Spread Ratio	Between banks	6.341	3	2.114	8.535	.001	Sig
	Within banks	3.962	16	.248			
	Total	10.303	19				
Non-Interest Income to Working Fund Ratio	Between Banks	.555	3	.185	1.829	.182	Non Sig
	Within Banks	1.618	16	.101			
	Total	2.173	19				
Non-Interest Expenses to Working Fund Ratio	Between Banks	4.652	3	1.551	.654	.592	Non Sig
	Within Banks	37.939	16	2.371			
	Total	42.591	19				

Burden to Working Fund Ratio	Between banks	2.632	3	.877	.413	.746	Non sig
	Within banks	33.960	16	2.122			
	Total	36.592	19				
Net Profit to Working Fund Ratio	Between Banks	7.075	3	2.358	1.227	.332	Non sig
	Within Banks	30.747	16	1.922			
	Total	37.822	19				
Interest Income to Total Income Ratio	Between Banks	55.830	3	18.610	1.851	.179	Non sig
	Within Banks	160.833	16	10.052			
	Total	216.663	19				
Interest Expenditure to Total Expenditure Ratio	Between Banks	830.303	3	276.768	2.067	.145	Non sig
	Within Banks	2141.876	16	133.867			
	Total	2972.179	19				
Return on Capital Employed Ratio	Between Banks	22.879	3	7.626	.840	.492	Non sig
	Within Banks	145.278	16	9.080			
	Total	168.157	19				

Sources: Compiled from table

The analysis of ANOVA Test Table 4.11 reveals that for the ratios Interest Income to Working Fund, Interest Expended to Working Fund & Spread, the calculated F value is greater than table value, hence null hypothesis is rejected and alternative hypothesis is accepted. It can be concluded that there is a significant difference of interest income to working Fund ratio, Interest Expended to Working Fund Ratio & Spread Ratio and for the remaining ratios there is a non-significant difference among the selected banks under study.

Major Findings of the Study

- **The Interest Income to Working Fund:** This ratio indicates the effectiveness of utilization of deposits. It recorded a fluctuating trend in all the bank units during the study period. It was highest in VDCCB i.e., 8.4% and lowest in KYDCCB i.e., 6%. This indicates that VDCCB fared well during the study period and KYDCCB marks the failure of CBs in optimum utilization of funds.

The result shown by " F" test reveals that the difference in interest earned in total fund is significant at 5% of significant in between the banks and within the banks. The null hypothesis is rejected. Hence the result is not as per the expectation.

- **The Interest Paid to Total Fund Ratio** in all co-operative banks fluctuating during the 5 years of the study period. The average ratio was the lowest in KYDCCB i.e. 4.6% which indicates efficiency of bank in obtaining low cost deposits but unwillingness investments by the investors. The maximum average ratio is in the case of TBDCCB i.e. 6.5% which indicates inefficiency of management in obtaining low cost deposits during the study period

There is a significant difference of interest expended to working fund ratio among the selected banks under study.

- **Spread Ratio:** The maximum average ratio is in the case of KCCBD *i.e.* 2.89%. This indicates that KCCBD shows more money is available to the banks for meeting their administrative, operating and miscellaneous expenses and it is more enough available to meet the non-interest expenses and remaining part contributes to the profit during the study period if compared with other banks as far as the ratio of spread is concerned vice-versa for KYDCCB.

There is a significant difference of spread ratio among the selected banks under study.

- **Non-Interest Income to Working Fund Ratio:** measures the income from operations, other than lending of the total income The maximum average ratio is in the case of VDCCB *i.e.* 0.6% which shows the operational efficiency of a bank will be high, while the ratio was minimum for KYDCCB and TBDCCB *i.e.*, 0.2% which indicates the operational efficiency is low.

There is a non-significant difference of spread to working fund ratio among the selected banks under study.

- **Non-Interest Expenditure to Working Funds Ratio:** Represents the share of manpower expenses and other contingent expenses from the working fund. The maximum average ratio is in the case of KCCBD *i.e.* 3.2%, shows bank's high expenditure on manpower and other contingent during the study period while the ratio was minimum for TBDCCB *i.e.* 1.8%.

There is a non-significant difference of non interest expenditure to working fund ratio among the selected banks under study.

Burden represents the amounts of non-interest expenditure, which is not covered by non-interest income of a bank. The maximum average ratio is in the case of KYDCCB *i.e.* 2.8% which indicates the lower profitability while the ratio was minimum for TBDCCB *i.e.* 1.7% which indicates higher profitability of the banks.

There is a non-significant difference of burden to working fund ratio among the selected banks under study.

Net profit to working Fund ratio measures overall profitability of the Co-operating Banks. The maximum average ratio is in the case of KYDCCB *i.e.* 2.75%, indicates control of management on its operating cost or efficient utilization of funds. while the ratio was minimum for KCCBD *i.e.* 0.25%.

There is a non-significant difference of net profit to working fund ratio among the selected banks under study.

Interest Income to Total Income Ratio shows the proportionate contribution of interest income in total income. The maximum average ratio is in the case of TBDCCB *i.e.* 97.9%. This indicates that TBDCCB lends more money in the form of loans and advances to the borrowers and receive interest on it during the study period while the ratio was minimum for KCCBD *i.e.* 93.4%.

There is a non-significant difference of interest income to total income ratio among the selected banks under study.

Interest Expenditure to Total Expenditure Ratio reveals the expenses incurred on interest in proportion to total expenses. Banks accept deposits from savers and pay interest on these accounts. The maximum average ratio is in the case of TBDCCB *i.e.* 78.11%, while the ratio was minimum for KCCBD *i.e.* 59.94%.

There is a non-significant difference of interest expenditure to total expenditure ratio among the selected banks under study.

Return on Capital Employed Ratio expresses profitability on overall investment *viz.* total resources utilized by the bank. The maximum average ratio is in the case of BDCCB *i.e.* 0.70%. This indicates that BDCCB is more efficient in the management of funds entrusted to them and better is the financial position of the bank during the study period while the ratio was negative for KYDCCB *i.e.* 1.97%.

There is a non-significant difference of return on capital employed ratio among the selected capital employed under study.

Suggestions

- The KCCBD is advised to increase the interest earned ratio to utilize its funds properly and should have a strong policy of advancing loans.
- The maximum average interest paid ratio is in the case of TBDCCB *i.e.* 6.5%. The bank should take steps to increase efficiency of management in obtaining low-cost deposits during the study period.
- In the case of spread, KCCBD put the step forward to increase in the forthcoming years. The spread is found to be in the range of 1.39% to 2.89%, which has to be increased above 5.
- In case of non-interest income ratio the KYDCCB & TBDCCB is having the lowest ratio so, it is advised to invest more in securities and bonds where they can get non-interest income.
- The maximum average non-interest expenditure ratio is in the case of KCCBD *i.e.* 3.2% and it has to reduce its expenditure on manpower and other contingents during the study period.
- The KYDCCB is having the maximum average burden ratio which indicated lower profitability and it has to take necessary steps to reduce the ratio.
- The KCCBD is advised to control its management and other operating expenses to increase net profit to working fund ratio.
- The KYDCCB is over-capitalized as compared to other banks so it is advised to use that total fund in a proper way to get better return on investment.

Conclusion

Economic development of any country is mainly influenced by the growth of the banking industry in that country. The present study has been conducted to examine the functioning of the selected District Central Co-operative Banks of six districts in Karnataka state using profitability ratios. The profitability ratios indicated that Interest Income, Interest Expended, Spread, Non-Interest Income, Non-Interest Expenditure, Burden, Net Profit & Return on Capital Employed proved the financial soundness of VDCCB, KYDCCB, KCCBD, TBDCCB and BDCCB. But after monitoring the changes in these profitability ratios, it is clear that the banks have to improve its operational strategy; only then it will be able to attract more customers and investors. For sound financial health, banks need to put in more effort to be efficient in generating greater profits per rupee of sale.

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Corporate Social Responsibility (CSR) Initiatives and Financial Performance: Evidence from Listed Companies in India

Dr. Asha Elizabeth Thomas*

Introduction

Recently Corporate social responsibility (CSR) has been receiving greater attention in the business world due to the impact it has on a company's goodwill and reputation. However, the linkage between CSR and firms' financial performance has invited a lot of debate in the research community (Alshammari, 2015; Elif & Halil, 2017; Wang & Jaepil, 2013). Some researchers have reported the significant positive impact of CSR on firm performance (Basuony & Elseidi, 2014; Wei, Peng, Huang, & Yeh, 2020) while there are many who have claimed the association to be negative (Hu, Zhu, Lin, Chen, & Chin, 2021; Sameer, 2021) in different institutional setups. Hence the researcher has found this to be gray area with scope for further research in order to come to a meaningful conclusion regarding the association between CSR initiatives and firm-level performance.

This research is conducted to empirically prove the impact of CSR on the financial performance of firms. Firms listed in Indian stock exchanges are selected for further analysis. In this research, a detailed analysis was conducted to test the combined (ESG) as well as the specific impact of CSR dimensions viz. environmental (E), social (S), and governance(G) to arrive at various conclusions. ESG scores secured by selected companies were taken for testing the proposed hypotheses. Firm-level performance was assessed using return on assets (ROA) which is the ratio between net profit before interest and taxes and the book value of total assets. The study used dated panel data from 2017 to 2021 and the fixed effect regression estimation was used for further analysis.

The following were the key research questions that were considered for detailed analysis:

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What is the trend in the CSR practices of Indian listed companies in the last five years?

Can CSR initiatives improve the financial performance of listed firms in India?

Is there a difference in the level of impact brought in by various dimensions of CSR viz. environmental, social, and governance dimensions on the firm-level performance of Indian listed companies?

Overall, the research contributes to the existing literature from the perspective of providing empirically tested results on the influence of various dimensions of CSR initiatives on the performance of listed firms in India. It also provides an understanding of the prevailing trends with respect to the CSR initiatives in the Indian context. Further, the paper is structured in the following order: Part 2 presents the review of literature and hypotheses formulation. Part 3 details the research design, sample selection, and analysis procedures. Part 4 is dedicated to a detailed presentation of empirical results. The descriptive statistics, correlation analysis, and results of regression analysis are mainly presented here. Part 5 provides an overview of this research, its implications, and suggestions for future researchers who are interested in this area.

Literature Review and Hypotheses Development

In business, CSR is regarded as a socially accountable investment for a firm, so it is important to know how its implementation would impact the overall performance of firms. Many studies (George Yungchih Wang, 2011; Feng, Akram, Hieu, & Tien, 2021) have concluded that CSR implementation is expected to lower the social cost leading to enhanced firm performance. The studies have also reported that principles of corporate social responsibility will enhance the level of satisfaction among employees and better corporate image among them. These results, in the long run, can help companies to attain a dedicated workforce, thereby improving firm performance (Waheed & Zhang, 2020; Uyar & Karaman, 2020; Lin WL, 2019; M, MA, G, & HY, 2020). There were also many studies that have reported that socially responsible firms are appeared to have lower stock returns. Their cost for being socially responsible places them in an unfavorable position as to those who do not appear to be socially responsible (Marly, 2016; Moore, 2001; Hirigoyen R, 2015; JU & MC, 2016). After examining different pieces of literature, this research supports the view that CSR initiatives can enable firms to improve their corporate performance in the context of listed firms in India. The following were the hypotheses formulated for this study:

- H1:** There is significant positive impact of CSR initiatives on the firm-level performance of listed firms in India.
- H2:** The impact brought in by CSR initiatives on firm-level performance varies across its three dimensions viz. environmental, social, and governance among the listed firms in India.

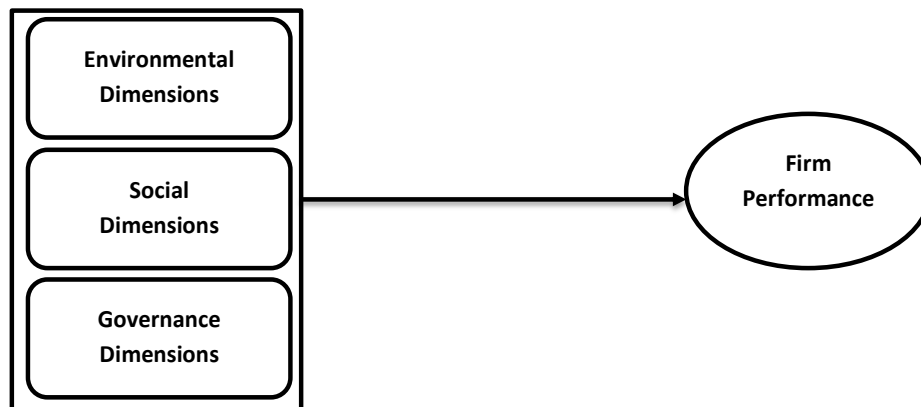


Figure 1: Proposed Model

Research Methodology

The data for this research was generated from Thomson Reuters Refinitive database and from Prowess IQ database. The study is based on longitudinal data of listed Indian firms for a period of 5 years (2017-2021). Thus, the research resorted to secondary data for testing the various hypotheses identified. After deleting the missing values, the final data constituted 65 listed companies in India totaling 325 observations.

Variables Identified and its Measurement

The corporate social responsibility (CSR) initiatives in listed firms were measured using ESG scores obtained from Refinitive database. So, the independent variable in this study is the log of CSR scores along with three dimensions viz. environmental, social, and governance scores as reported in the Reuters database. The firm-level performance is measured using the return on assets (ROA) of companies. It was measured using the formula -net profit before interest and taxes divided by book value of total assets.

Model Specification

$$FP_{it} = \alpha_0 + \beta_1 ESGC_{it} + \beta_2 ED_{it} + \beta_3 SD_{it} + \beta_4 GD_{it} + \omega_{it}$$

Where FP = Firm Performance, ESGC = Combined score CSR dimensions, ED = Score obtained by the company for its environment dimension initiatives, SD = Score obtained by the company for its social dimension initiatives, GD = Score obtained by the company for its governance dimension initiatives and α_0 = Regression intercept and ω = Composite error term.

Empirical Results and Discussion

The researcher had performed a few diagnostic tests before running the regression analysis to arrive at the less biased model. The presence of multicollinearity was tested using the Variance Inflation Factor (VIF). The VIF values

of all the variables were less than 10 indicating the absence of multicollinearity. Breusch-Pagan test was also used for testing the status of heteroscedasticity. The result was significant i.e Probability value > F=0.000 showing the presence of heteroscedasticity in the data. Accordingly, the researcher had used robust regression estimation to ensure validity and consistency in the results. Hausman test was also conducted to confirm the estimation model and the results did not support the null hypothesis thereby accepting the fixed effect regression model for further analysis. Furthermore, the empirical analysis and its results are classified as descriptive statistics, trend analysis, correlation analysis, and fixed effect regression results.

Table 1: Descriptive Statistics

Variable Name	Mean	Std.Dev.	Min.	Max.	Observations
ESG Combined Score	48.61	14.76	9.45	82.66	325
Environmental Dimension Score	39.16	23.59	1.00	92.89	325
Social Dimension Score	55.52	18.22	6.42	93.31	325
Governance Dimension Score	51.06	23.18	4.80	96.99	325
Return on Assets	1.96	8.75	-0.15	88.02	325

Source: Computed by the Researcher

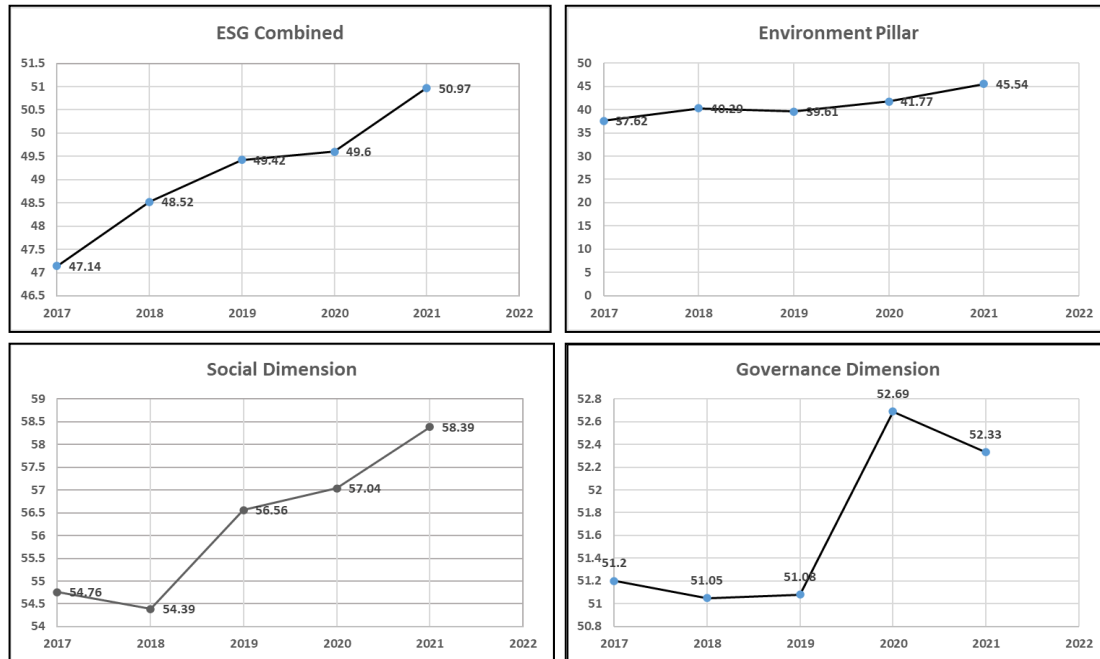


Figure 2: Trend Analysis of CSR Initiatives among Indian Listed Companies

Source: Compiled by the Researcher

Table 1 shows the descriptive statistics of the study variables. The average score received by the selected companies for their CSR initiatives was 48.61 and the minimum value was 9.45. The maximum value of ESG score among the firms was 82.66 which is comparatively a good score compared with the benchmark scores in

other emerging economies like Singapore and Malaysia. Among the three dimensions of CSR, the mean value of the social dimension showed the highest value (55.52) indicating that most of the selected Indian companies were focusing on creating a good image by getting involved in offering solutions to various problems faced by society. The second-highest scoring was for the governance dimension in CSR initiatives. The values showed wider deviation among companies, however, some of the listed Indian companies got a scoring of above 90 percent exhibiting evidence of excellent corporate governance initiatives. The mean value of the environmental dimension showed a comparatively lower scoring i.e., 39.16 and some of the listed companies got a scoring of values near zero, underlying the need among corporates for giving greater focus to environmental matters also. The mean value of ROA showed a very low value (01.96), and this was mainly due to the negative returns exhibited by some of the firms included in the sample.

From Figure 2 it can be observed that overall scores received for CSR initiatives among Indian listed companies are showing an increasing trend for the last five years. However, for the governance dimension, the average scores got by firms have decreased considerably during the last financial year i.e., 2021. The primary reason as identified from their annual reports is that most of the selected companies faced some temporary business contingencies, and so their focus towards governance initiatives was taken back for a while to solve these problems. Among the selected listed companies in India, the scoring received for the environmental dimension of CSR initiatives are comparatively low, even though it is showing an increasing trend. This points towards the need for giving extra focus on having more activities related to environmental matters which can enable these companies to have sustainable business models. Over the years, the mean value of social dimension scores showed the highest increase i.e., it ranged from 54.76 to 58.30 which is a positive indication that Indian listed firms are positively contributing towards the development of the economy by focusing on offering solution to various social problems.

Table 2: Correlation Analysis

Variable Name	ESG Combined	Environment Dimension	Social Dimension	Governance Dimension	ROA	VIF
ESG Combined	1.00					5.09
Environment Dimension	0.67***	1.00				2.16
Social Dimension	0.77***	0.63***	1.00			2.85
Governance Dimension	0.59***	0.17**	0.28**	1.00		1.93
ROA	0.10*	0.01**	-0.01*	0.13**	1.00	N/A

Source: Computed by the Researcher

***, ** & * indicate significance at 1%, 5% and 10% respectively.

Table 2 shows the correlation between the independent and dependent variables identified for this research. There is no strong correlation between the explanatory variables identified for this study. Therefore, the researcher proceeded to model estimation since it is free from multicollinearity.

Table 3: Fixed Effects Regression Results

Model	Coefficient	P-Value
Constant	3.4003	0.0305
ESG Combined	0.0153**	0.0030
Environment Dimension	-0.0110***	0.0000
Social Dimension	0.1040**	0.0041
Governance Dimension	0.0206***	0.0003
R-Squared		0.3496
Prob(F-statistic)		0.0000

Source: Computed by the Researcher

***, ** & * indicate significance at 1%, 5% and 10% respectively.

Table 3 reports on the fixed effect regression results. As per the results, CSR initiatives are having a significant positive impact on the financial performance of the selected Indian listed firms at a 5 percent significance level. The evidence is supporting the alternative research hypothesis (**H1**) and so the researcher is unable to accept the null hypothesis. These results are like many other studies conducted in different institutional structures (Samuel, 2017; Benjamin, 2021). Accordingly, firms in India can continue to concentrate on improving their CSR initiatives and practice proper disclosure norms, which can enable them to improve their goodwill. In the long-run this can bring a significant positive impact on their profitability also. On a detailed analysis of the results, it can be noticed that except environment dimension, all others, viz. social and governance dimensions are having a significant positive impact on firm performance. The environmental dimension of CSR is showing a significant negative impact on firm performance. This could explain the reason why firms are concentrating less on this dimension when compared with the other two dimensions. Certain studies have also reported that investors are not interested in spending their money on green initiatives as they believe that it can only reduce the profit which is set aside for tapping various growth opportunities (Hirigoyen R, 2015; JU & MC, 2016). It can also be noticed that the impact of all three dimensions on firm performance is also not the same, the social dimension is having the highest impact, followed by the governance dimension. Considering all these results, the researcher has arrived at rejecting the null hypothesis and accepting the alternative hypothesis (**H2**). R-squared value arrived at through fixed effect regression estimation is **0.3496** at a 1% significance level. This confirms that 34.96 percent of the changes in the firm-level performance of Indian listed firms can be explained through the predictor variable of this model viz. firm-level CSR initiatives.

Conclusion

This study examined the effect of CSR initiatives on the firm performance of Indian listed firms. The study period was between 2017-2021 and after eliminating the missing values, data pertaining to 65 listed Indian companies were used for further analysis. The results of the study supported the alternative hypotheses that CSR initiatives are having a significant positive impact on the performance of firms in India. Hence, this research gives empirical evidence that firms in India can strengthen their CSR activities to enhance their firm-level performance. Evidence emanating from this can be of importance to policymakers in the Indian Capital Market and to investors who are interested to know the long-run impact of CSR initiatives. Future studies in this area can focus on how this impact of CSR on firm performance varies based on firm size, years of existence, differences in the ownership structure, and type of business. There is also scope for further research by taking additional measures of financial performance like return on equity (ROE), price to earnings ratio and earnings per share (EPS), which can help in bringing more robustness in the model.

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Sustainable Reality: A Study on Accessory Design for the Bamboo Craft Design Process, Methods and Views of Basket Makers from the Tribal Region Jangareddigudem Division

Mr. Muppidi Rambabu*

Introduction

India is traditionally known for its rural village and wooden cottage Industries. About 10 million people are directly depending on the industry to eke out their livelihood, while millions of people depending upon subsidiary occupations connected with the wooden cottage industry. The share of employment provided by the industry in the total decentralized sector is about 10 per cent. Thus, the industry constitutes one of the major sectors employing the larger number of persons, next only to agriculture.

- **History of Tradition of Toys:** India has glorious rural artisan handmade tradition in toys. The tradition of toys started from Harappa and Mohenjo-Daro which have thrown up a magnificent profusion of clay toys of considerable ingenuity, animals with moveable heads, monkeys that slide round a stick and the most skilful toy carts. Toys are torches, which guide children into adult life, for it is through them that they are imitated into the inner mysteries, traditions and faiths of the world they are to enter.

Identification of Study

My trust in traditional toys began in my childhood when I used to spend my summer vacations with my Grandparents in jangareddigudem, west Godavari district, Andhra Pradesh. Each visits small craft students like bamboo craft makers they are doing some baskets works, palm leaf craft making products I observed and involved art crafts.

Sometimes I visited Vijayawada to Lepakshi Emporium they are lot of art craft works displayed and I attached more. in the city of Vijayawada nearby kondapalli toy s colony lot of people working in Karnataka city of toys colonies look

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like the same scenario is going. like here they work handmade craft very beautiful work. Which here products new indicatively done they traditional baskets to show off to friends the handicrafts which were so popular with other children and common in the show-cases of living rooms of relatives and friends in Andhra Pradesh.

History

In this place The Eastern Chalukyas ruled coastal Andhra from 700 to 1200, with Vengi new name Pedavegi consistency of Denduluru, and Eluru division from west Godavari district as their capital. Historical people saying built some temples showing them ruled architecture form archaeology surveys says. Evidence is found at the villages, Pedavegi and Guntupalli (Jilakarragudem) here people's saying and historical sayings...

Some days went through a period of empire Eluru then became a part of the Kalinga Empire until 1471. Later it fell into the hands of the Gajapathis. In 1515 Sri Krishna Deva Raya captured it. After the fall of the Vijayanagara Kingdom, it was taken by the Sultan of Golkonda, Kutub Shah. On 15 April 1925, West Godavari District was formed with Eluru as its headquarters and all the district offices and regional offices were set up in Eluru city. now in this place centre of nearby Amaravati south view off vengi now a days vengi place mixed in eluru division of eluru capital city. Jangareddygudem Revenue Division is an administrative division in the Eluru district. It is one of the 4 revenue divisions jangareddi gudem, jeelugumelli, Polavaram, and Buttaigudem in the district which consists of under its administrative headquarters is the divisional headquarters. Division inside Polavaram. Godavari tribes nearby Polavaram, Buttaigudem, Jangareddigudem, Koyyalagudem, Jeelugumelli around average approximately thousand above staying in this place. Here very famous tribes Koya, konda reddyis, adima tribes several names have them. Tribes handmade crafts making very beautifully and hands on experienced more Then above. they are using bamboo craft here very famous craft. They are making all products homely, Utility, furniture's, house construction materials all things they using wooden only some agricultural forming materials making also Bullock Carte see, baskets gardening tools, fork, trowel, axe, Nagali, baskets, flowers, and shelters every thing migrated sustainable woodcrafts only using. my focus on study and survey only themselves made some wooden crafts only focus research and development following survey and study:

Objectives

- To the study and survey specific bamboo crafts
- To the problems of relating to availability of raw materials, technology, design, common facilities ext...
- To the promote socio - economic condition of artisan

- To the market evaluation of studies of specific crafts like baskets and utility products.
- To the craft, design, heritage and traditional knowledge
- To the conducting of workshop, seminar on issues of specific issues relating to handicraft sector.
- To the promote socio economic condition of artisan.

Raw Materials

Table 1: Manually Product Designing Purpose: Using Tools, and Raw Materials Hands on Experience.¹⁰

Sl. N	Material Name	Tools
1	Bamboo Wood	Cutter
2	Thin wood	Hammer
3	Thik wood	Knife
4	Patti	Stove Lamp
5	Round wood thin leaf	Hacks blade
6	Wooden col , warn ish	Measurement tape

Market Result analysis

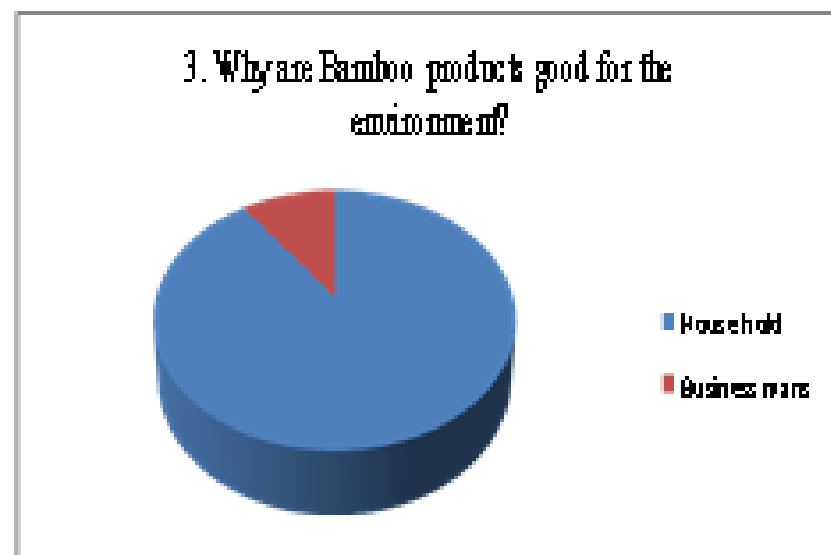
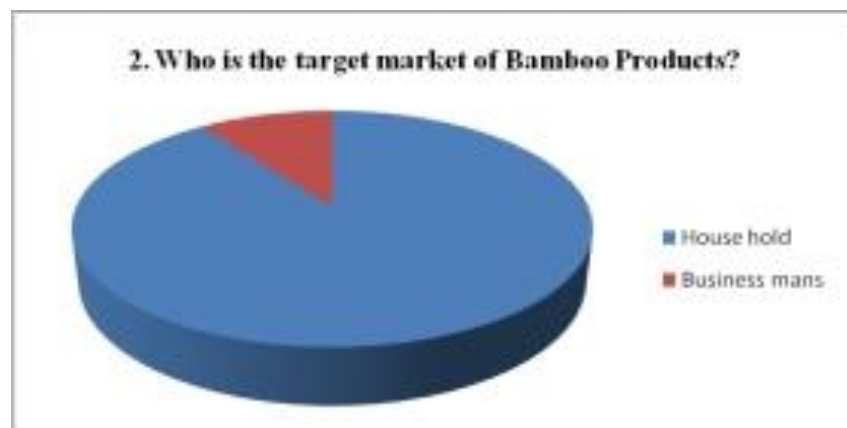
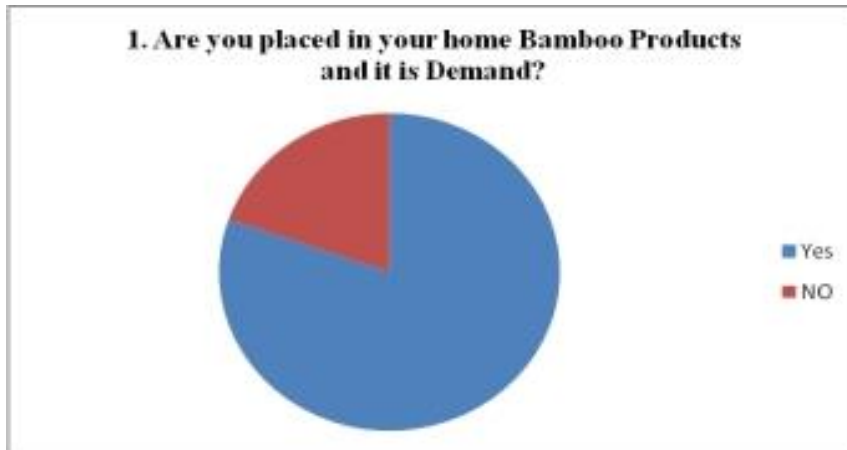
I conducted a survey at some public places, what are app groups, village markets, and some towns each question average of 10 people total have taken 5 questions out of 50 persons view:

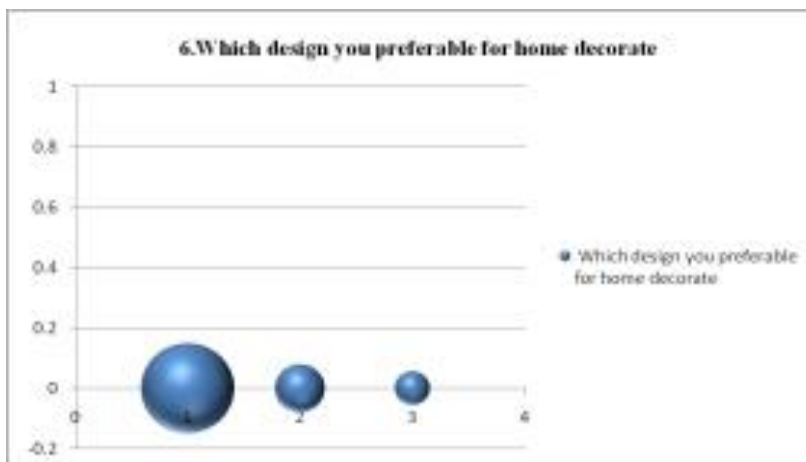
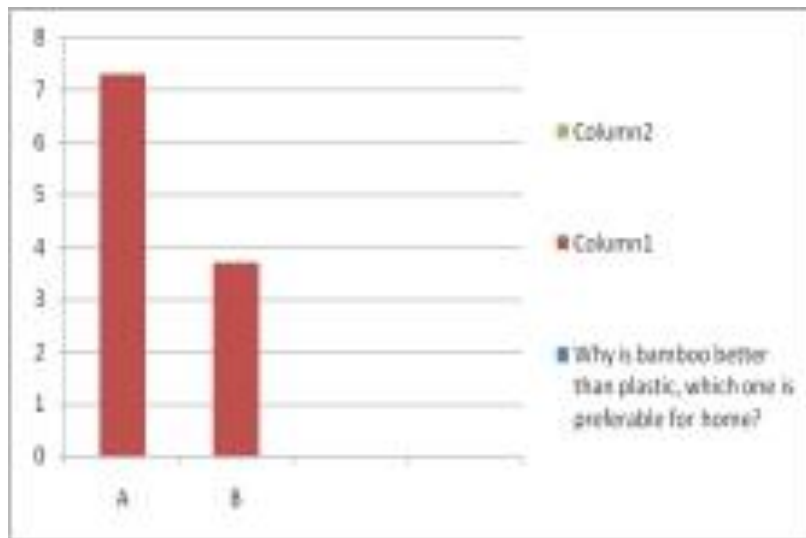
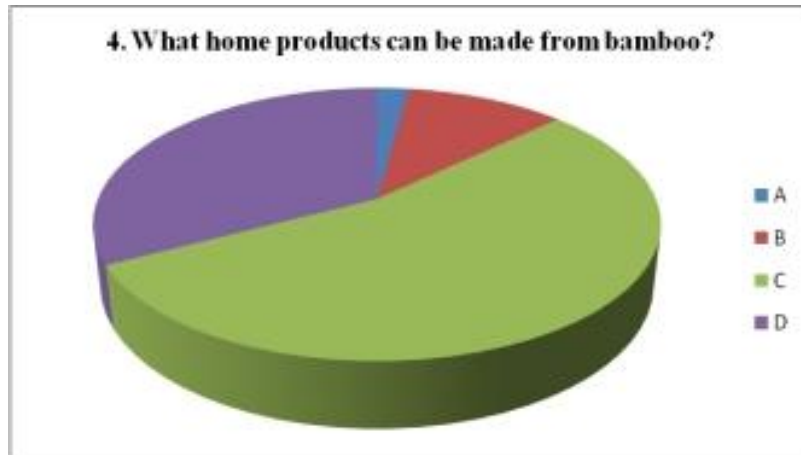
Based on my survey on the Bamboo craft design perspective, the scope of the demand market? the look of the product, eco-friendly of products household encouragement for the urban and rural sector:

Question

- Are you placed in your home bamboo products and it is demand?
A) Yes B). No
- Who is the target market of bamboo products?
A). House hold B). Business mans
- Why are Bamboo products good for the environment?
A). Eco - Friendly B). Pollution
- What home products can be made from bamboo?
A). Flooring B).Work tops C). Furniture D). Kitchen
- Why is bamboo better than plastic, which one is preferable for home
A). Plastic B). Bamboo
- Which design you preferable for home decorate
A). furniture for design B). Kitchen for design C). Business for design

Pay-charts: Result Analysis





Market survey Result Analysis.¹¹

Making Process

Bamboo is one of the fastest-growing plants on Earth. The farmers fetch the bamboo from the forest and weave baskets in winter season. Weaving of basket is done manually by experienced artisans. Bamboo is divided into strips of different sizes those vary in width, this process done using a sharp knife. The strips are made thinner by peeling top layer and the bamboos are split into flat thin strips. Artisan arranges the strips in circular manner to make the base of the basket. Strips of bamboo are weaved alternatively and run through the arranged strips. Once the base is completed, the strips are bent slightly to weave the side walls. Bamboo strips are continuously added and weaved until the required size of bamboo is acquired³.



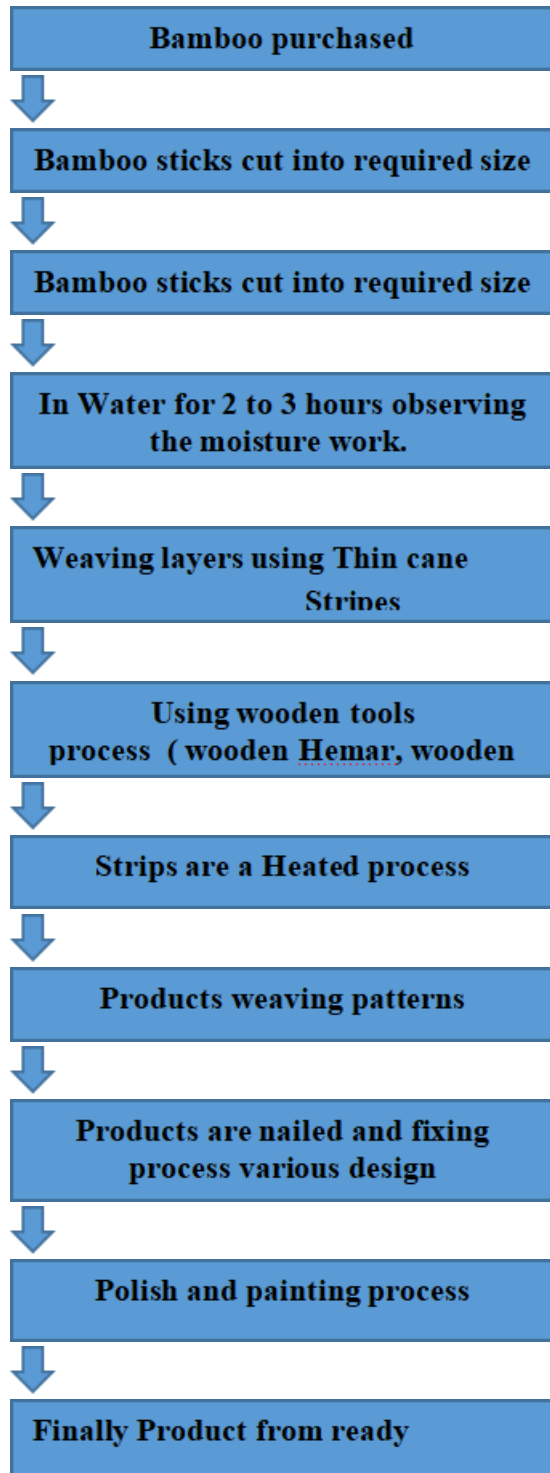
Weaving of basket is done manually by experienced artisans chanda srinivas.¹²

The rim (edge part of bamboo) is locally called as Veduru karra which is a thick bamboo pole, it is bent and made as ring and attached to the bamboo basket. Once weaving is finished extra strips are cut and a thick bamboo pole of smaller size is added as a rim and looped around the edge of the basket for better grip. Bans baskets are weaved in different shape and size. These baskets are mainly used for storing grains and supplements and carrying purposes in the fields³.

Gallery



Various products Baskets from Bamboo accessories design.¹³

Flow chart

The weaving of the Basket Flow chart.¹²

Sample size of Family Mapping

SI.N	Artisan Name	Age	Cast BC- A	Market Location
1	Sanda Srinu	38	Medhara	Jangareddi Gudem
2	Sanda Venkata Laxmi	65	Medhara	Jangareddi Gudem
3	Ankolu Venkateswara rao	60	Medhara	Jangareddi Gudem
4	Ankolu Dhana laxmi	37	Medhara	Jangareddi Gudem
5	Ankolu Laxmi Durga	19	Medhara	Jangareddi Gudem
6	Ankolu Nagaraju	26	Medhara	Jangareddi Gudem
7	Ankolu Sanda Sridevi	26	Medhara	Jangareddi Gudem
8	Ankolu satyanaraana	55	Medhara	Jangareddi Gudem
9	Ankolu satyavathi	45	Medhara	Jangareddi Gudem
10	Ankolu Veerababu	20	Medhara	Jangareddi Gudem

Present interceded Sample size of Family in cast of Medara.¹³

Domestic Issues

No demand: Weekly market available in division at Jangareddigudem every Thursday near by any products designed things, raw materials will be purchasing local market. each basket average cost 300 rs to 500 rs depending on size. after Covid no marketing. before Covid average ly per day will be getting 1000rs now days will get only 300 rs per day very difficult in the market. please support give us we are all depending only on basket making only.at least provide us loan subsidies in banks. or supply at least bamboo materials, and tool kits provide. we have high production to give domain market. so that we have the revival of olden golden days think so.



Experts in Baskets making - livelihood artisans Chanda, Ankolu family s.¹⁴

Review of Literature

M.S.Swamy wrote: India has a history of rich and diverse cultural tradition. And among its diversity, the legacy of India's craft culture always occupies a special place owing to its beauty, dignity, form, style and aesthetics. "To write about Indian Handicrafts is almost like writing about the country itself. So vast, complex and colourful, and yet with a simplicity and charm, difficult to attain under comparable conditions". It is a fact that Indian handicrafts have very ancient origin and of high quality. They have customarily received royal and aristocratic patronage and handicrafts men were honored by other communities. The versatility of the various materials used in Indian handicrafts items, such as wood, stone, metal, grass, glass, cane and bamboo, textiles, clay, terracotta and ceramics, makes these products truly unique.¹

M. Abraham wrote: Emphasizing on the greater value of the arts and crafts, "the world of art and craft is as valuable as the world of science, philosophy or ethics. Like art, crafts reflect the state of human society through the individual. Craft treasures like art's give us a glimpse into the core and kernel of the collective mind and societies through the mirror of individual mind that created them". As said above there are numerous varieties of art crafts in India which are made with attractive designs and meticulous craftsmanship. This paper is aimed at highlighting the various Handicrafts products produced by limiting to the Andhra Pradesh State.²

Novellino Dario wrote: An account of basket weaving and the use of fibre plants in the Mount Aurunci Regional Park (Central Italy)2006: The people and their traditional economy From time immemorial, the population of Maranola has relied on a rural economy mainly devoted to subsistence farming, stock-raising and trade of minor timber and non-timber forest products, reveals the specific gender dimension of this tradition, and the pivotal role that women played in the household economy. Dramatic events, such as the Second World War, created new opportunities for local women to trade and negotiate with outside forces.³

George Wharton James wrote Indian basketry,1902: Indian baskets is almost entirely the work of Indian women, and therefore it's study necessarily leads us into the sanctum of feminine Indian life. The thoughts of women the art development the acquirement of skill, the appreciation of color, the utilization of crude material for her purpose, the labour of gathering the materials, the objects, her failure her success, her conception of art her more. Or less successful attempts to imitate the straining objects of nature with which she came in contact, the aesthetic quality of mind that led her to desire to thus reproduce or imitate nature all these and a thousand other things in the Indian women's life are discoverable in an intelligent study of Indian baskets.⁴

Illustration for Basket

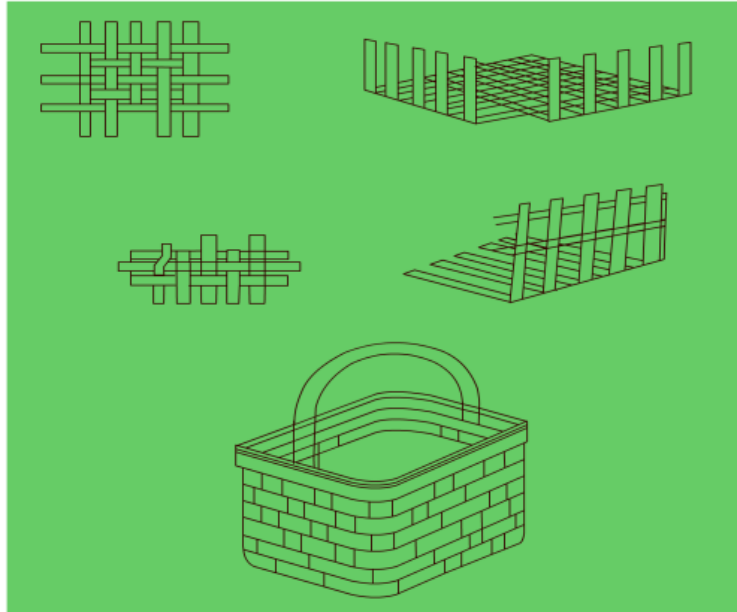


Image: Illustration for Basket CAD design in Clo. 6.0.¹⁵

Socio Economically Market Scenario

The local market scenario here two decades will be happening one is Covid before and covid after now scenario of covid : before market good potential order work will grow more, everyday products will moving reasonable price. our family in tensions lively wood, income generation growth is good. after Covid: No more orders, work nil, products scenario very bad conditions going. product making very slowly moving economically growth very bad situation, lively wood pathetic condition .so overall skill-based bamboo craft works very down. they said the government will give some subside rates for purchasing products, materials, and tool kits.

Survey Reviews

Koteswararo senior artisan bamboo craft makers: asper my knowledge fore their time onwards our family doing only Bamboo craft work only,me along my family doing every day this work only we don't have another work .we are always busy life baskets making, (Gaabu, Nichena, Vuyyala, Badeshey, yedla bandi ,Bandi chakraalu, in telugu names),and agriculture all products , basket plates, wooden basket, children's paly toys and all ancestors time period working here traditionally. They feel that it is their responsibility to continue with these Arts and Crafts. They telling like Covid before our works all things busy now we are entire family less work only, our perspective telling this kind of pathetically situation going. Government will take our products or give chance for fellowship like we are requesting and supporting my family my age also 65 above special category artisan pension

scheme, my family entire all are working in this basket making ,wood working, handmade accessories making only so we are suffering lowest price local product name branding have, my view support us globally , and need of bamboo craft of basket makers from region of Jangareddigudem place. And this is only artisans livelihood this field only for support give subsidies, Pradhan Manthryvikas yojana loans, Pechan cards, skilled scholarships our children's also In my research interacted M. Koteswararo a second generation Bamboo Basket craft maker says.⁵

Chanda Srinu artisan bamboo craft accessories designer: our family fore fathers time to be worked in this field only, artisan bamboo craft sector very famous design products and craft and accessories things, now days nobody not purchasing our products our products also very old fashion goods now demand in plastic and plaster of parries and fiber products liking more. last decade of my father and before fore father in that time is very demand and very use full entire products in this sector now a days what happened people are sustainable products not asking, Eco polluted products side attracted and liking. but our products very good sustainable products, no polluted and very useful only. Even home utility products very like, decorative products very liking, furniture and all, sofa, balcony, hall decoration accessories products more likening flower age, photo bream, baskets, caring bock's, carrying bags now demand only little children toys and gilders, some interior decoration items, tables, wooden chairs, examination pads, stools, spoons, mats, baskets heavily demand, and so many things. my request only government will provide some design oriented classes workshops, fellowship programmed it will be better to growth our knowledge and recognized our products, how to develop marketing domestics and national and international things it will better for more. now a days entire things changed no handmade every thing ready made only we have to change our proportion to change jobs like building works or any business, very tight position to move in this bamboo craft works and business.⁵

Narsimlu Jute Board Executive in marketing, andhra and Telangana board member said : my view of in this Bamboo craft products which low price compare to iron, plastics, other materials it is good for at home and other thing Wood craft very rich look ,now a days urban and metropolitan cities having pollution If we use wooden furniture and bamboo baskets are very help full to Eco friendly products .very use full all are using best for home and pollution will control our side.⁶

Dr.Nagajanu research analytic : my view of in this Bamboo craft products jute and bamboo similar family product also similar so that environment is important where it place it good things also my perspective of bamboo is natural products several kind of this products very rich look in interior place it balcony ,hall, reception anywhere I prepared only wooden craft products only otherwise any materials also used for me it effected at my home other wise I m not prepared any hard materials and polluted plastic mica, iron, copper and steel. save Eco materials save environment products.⁷

Ankolu Venkateswararo artisan,said: our work very vastly moving, plastic, cement, metal, and all model came? no one gives orders housing material like wooden furniture all those things, nowadays no will come and give to ordering any furniture models so that we are using only old forms of bamboo baskets and all. we need training is need. The next coming generation wants to learn some innovatively also. and my request please provide us with artisan recognition cards, fellowship, and some artisan honorariums like facilitating our work and products. my children also doing this work please encourage them.

Conclusion

The government should also take initiative Eco friendly materials encourage always it will be better for good nature and good environment also, bamboo crafts once open a time very fast moved now it is slow why the region ,solve some project in this place it will be better to new decades. bamboo craft very famous art and craft, design and patterns, accessories products save always like handmade artisans products very valuable things, and artisans encouragement programmer, soft skill training, marketing for business, resource some designers study to research and all encourage and give good projects for themselves. in this for its revival by providing subsidies for the makers of this craft. The recognition through the government will enhance the productivity and will help in survival of the craft. These craft are not only for the decoration purpose but also are being used by Animators for creating product animation. to develop some accessories products encourage them , here many recourses available raw materials and craft persons family's ready to knowledge learn so that trained them, mold innovatively and migrated some toy projects sources available in this place: Jangareddigudem, Polavaram, Jeelugumenlli, Chintalapudi, Buttaigudem, Perantalapalli, Koyyalagudem, Dondapudi village products not only some domestics other handicrafts like Kondapalli, Etikoppaka, Nirmal, Folk art, Thirupathi wooden crafts facing many problems support give many aspects like artisan family's, revival craft bazaar, exhibition to industrial business so encourage all local products wooden bamboo craft products has been doing risk business in the national and the international market. recognized them problems solve them immediately otherwise handicrafts will dispersed and give solution to lively wood life style. save origin of bamboo craft... save eco-friendly products.

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Start-up India - Empowering Start-Ups for Growth

Nikhar Goyal*

Introduction

In India people are quite recently and again empowered by bearing as occupation choice. To empower people for doing what should be done get up India Stand up India' is worked with by Department of commercial Policy and Promotion. The quality explanation in starting this arrangement is to energize innovative soul and make a scene to incite signs and new relationship in India. Mr. Narendra Modi incited the inhabitants of country to form India a start-up capital. He saw whether the energetic experienced youth in countries have open entries as new relationship, with sorts of progress, whether or not it's making, alliance locale or creating. Further he said that it'll be an outstanding occasion for vivacious period of India. Who can say without distrust at whatever point a thought change into an astounding hall and an improvement happened. So, trust should reliably alive and kept it on beginning outstanding assessments neglecting being failed. No matter the way that, business visionaries are supervising issues yet they're raising sort of a sun. They need the show to technique and divert their energy to plan, support and execute their dreams and adding to the development of the economy. This new drive of latest affiliations ensure speedy sponsorships for starting the business, less multifaceted courses out, charge decreases and quickly segment for the licenses. This drive stands firm on the capacity of creating the footings when the event region has a ruin. For any fundamental shall come valuable undertaking it needs reasonable sponsorship and preparing. a bit of the noticeable new relationship in India are Flipkart, Chaayos, Ola hacks, Paytm, Redbus, Zomato, Zivame, Just telephone, Pepperfry, Lime road, Quikr, Cardekho, Practo, Smooth scale, policybazar, Grofers, Cover patches of knowledge, Nearbuy, Voonik, Inmobi, Firstcry, Yepme, Mobikwik,

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Big vessel, Nykaa, Hopscotch, Bluestone, Caratlane, Paper boat, Gojivas, Crafts villa, Roposo, Voylla, Babyoye, Naaptol, etc. The Government's Action Plan will help with accelerating the movement of Startups all things considered through India, across amazingly huge regions in Tier 1, 2 and three metropolitan associations, including semi-metropolitan and ordinary locales and breakers inducing attempt among SCs/STs and ladies' affiliations. The 19-point Action Plan worked with by the Department of commercial Policy and Promotion (DIPP), turns both around limiting hindrances and progressing rapidly improvement through

- Improvement and Handholding
- Backing Support and Impulses
- Consideration Academia Partnership and Incubation

Stages of Startup Life Cycles

- **Pre Start-Up:** A traditional idea or thing is seen which may zero in on a basic requesting. The idea/thing made is proposed to guests to bring the quality results.
- **Startup:** The business visionary begins to portray his/her strategy and appears for tactics of managing creating customer base persistently. The business visionary also, pushes the movement of business immovably and fills in sensible manner.
- **Progress:** Maximizing benefits and directing issues got from the general point the degree that challenge that the business has achieved. At long last the ends to supply the start-up to a beast or get massive resources that the brand should still make as an undertaking.

Strengths of Startups

- Since every start-up begins with dreams thusly Dreams appear
- It attracts Innovation
- Money related master can take his Own decision
- It gives financial occasion
- Since the business visionary is seeking after their own business Job security is moreover ensured
- Start-up completely targets free work and prompts farther Creation of business
- It drives Self person
- It improvements and stays alive of hypothesis for living individual fulfillment
- It prompts monetary independence
- It gives an anteroom to transparency of cutoff

Challenges of Startups

- Decayed and Concealed Unfit Road structure remembers the business' dependence for road network actuating its 57 of freight progress on road.
- Lacking Warehousing frail workplaces and therefore the supervisors prompt specific conditions of insidiousness, disaster and isolating of stock.
- Lacking R&D the sector of examination during this space is by and enormous under entered.
- Raising Finances, it is a capital raised cycle which needs an immense degree of resources for complete sources
- Shy Infra Structure With little infra structure the arising E business and creation network usable endeavours would acknowledge that it is a ton delicate to modify around to the hardships pursued of association
- Dynamic work power they helpfully run into another work offering a touch advanced pack or easing. The foremost risky test for the organized components establishment is to holding the pool.
- Moving appraisal rates In India impacting blame rates starting for one locale furthermore onto the approaching can limit the action conditions

Start-up India's 19-Point Action Plan

The 19-point Action Plan envisions a couple of convey living spaces, even more clear patent recording, charge extraordinary cases, simplicity of setting-up of business, an INR crore corpus hold, a hastily leave diagram, among others. Support for Start-up India

- Tone-license Compliance
- Single Point of Contact through Start-up India Hub
- Chipping away at Processes with Mobile App and Portal (for segment, specifying observances and getting information)
- Genuine Support, Fast Tracking and 80 diminishing in patent piece charge
- Relaxed Morals of Public Procurement
- More clear and faster Exit
- Sponsoring Support through a Fund of Finances corpus of INR crore
- Credit Guarantee Funding
- Commitment Impunity on Capital upgrades
- 3-Time Income Duty Immunity
- Charge Exemption on Investments above Fair market price (FMV)
- Yearly Start-up Fests (public and every one round the planet)

- Ship off of World-class Innovation Centrals under Atal Innovation Mission (AIM) 14 Found out of country-wide Incubator Network
- Improvement Centres to foster Incubation and R&D
- Research Parks to manoeuvre development
- Advance Entrepreneurship in Biotechnology
- Advancement Concentrated Programs for Scholars
- Yearly Incubator Grand Challenge

Current State of Affairs of Start ups in India

- India is that the third most elevated Start-up place.
- Ordinary period of start-up individual is on various occasions.
- 9 of the through and thru start-up individual are women
- All around tech new affiliations are trusted to emulsion from 4300 of every 2015 to 11500 out of 2020.
- Normal number of latest headway new affiliations has moved from 480 out of 2010 to 800 of every 2015.
- It's trusted to development to 2000 out of 2020.
- More noteworthy piece of latest affiliations and financial advocate are from metro metropolitan regions.
- There's overall, inadequate improvement in piece of womanish money related specialists during the bottommost a period.
- The quantity Private Equity and risk capital undertakings has replicated during the bottommost a period.
- The portrayal has been revised where a neighborhood are going to be considered as a Start-up for over to varied times (from earlier on different occasions).
- Also, no letter of thought from an incubation center/ingenuity affiliation is going to be mentioned for either attestation or commitment diminishes
- Out of the assignments got, 6096 are seen as Startups by DIPP.
- 74 Startups are embraced for serving charge diminishments by IMB, as of 1stweek of Jan, 2018.
- New affiliations falling under the already over of 36" white" demand primers won't bear Environment occasion under 3 Terrain related Acts.
- New affiliations may tone-guarantee thickness under 6 Labor Laws.
- Usable has now extended the residency of thickness of tone-secret word under 6 Labor laws from 3 to varied times.

- The Finance Act, 2016 had made plan for Startups to urge individual responsibility during an alone amongst one in every of"> one among a sort case for quite while in a square of various times, expecting that they're joined between first April 2016 and 31st March 2019.
- Region 54EE has been introduced under the Finance Act, 2016 which obliges excusal of capital development up to INR 50 lakhs arising out of move of expanded length capital asset put infers into a resource informed by Central Government.
- The corpus is going to be passed on north of two Finance Commission cycles; by 2025.
- FFS places infers into SEBI chose Alternative Investment Finances (AIFs) which, consequently, will place infers into Startups.
- Startup India campaign has gotten, when unsure, backing for its undertaking to offer Startups to the forefront of India's movement story. It grants money related specialists to zero in on their middle business (rather of timing conceding nonsupervisory observances) - while drawing in them with a strongest-structure to assist their innovative psyche and movement.
- INR 600 crore has been given to SIDBI.
- Full scale overdue obligations occupy INR 605.7 crore to 17 AIFs.
- 75 Startups have gotten backing from various AIFs.
- Startup India has squeezed off a robotized online data and development module show Startups and aching for business person bosses, through various seasons of their longing turn.
- Over farther than 1, competitors have wanted the course, out of which around over-and-moneybags have completed 100 of the course sensibly.
- 18 States viz. Gujarat, Madhya Pradesh, Karnataka, Telengana, Jharkhand, Uttar Pradesh, Odisha, Chhattisgarh, Bihar, West Bengal, Uttarakhand, Andhra Pradesh, Rajasthan, Kerala, Goa, Haryana, Assam and Punjab have formed Startup Programs since October 2014.

Conclusion

There has been swelling of latest affiliations and strolls in India lately. The Indian begin climate has made, being driven by factors like improvement in number of resources/angels, moving movement, advanced PDA and online media entrance, improvement in agonizing networks and gas pedals, further young monetary angles, etc Ongoing government drives like 'begin India, Stand up India. India will essentially achieve new energy also regardless as it's obviously getting that. "Each coin has two sides" so there's not different obstructions in framework for Startup India love it bear some endeavor, bother, and energy. Backing may be a focal issue for brand spanking

new affiliations and independent fundamentals. Right when the economy failed, it made it harder to vary over business person related set material experts and banks item like leave behind the industrialist that's critical for advance within the initial segment of the day of a business. aside from position of taking an opportunity thereupon business specialists have about conventional issues, Multi window concurrences and price evaluation structure are most elementary test in system for accomplishment of Startup India so government must achieve a lot of add this heading.

At the present day, new affiliations are making sort of a guide. Both virile and ladies are becoming into it. Really, needless to say ladies are going with farther experiences and that they are contradicting the test to assist their trustworthiness. Indian new affiliations article to energize the starting scene with essential bearing, verge of collapse, development and convey forth foundations with correspondence to sponsorship affiliations. Now the govt is in like manner supporting the Launch-ups.

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Recent Advances in Textile Industry

Simran Preet Kaur*

Introduction

Textile production was and is a very traditional process which follows certain rules since a very long period of time. In India, weaving can be associated with our culture. Various other work related to textile sector such as dyeing, printing, painting, embroidery, tracing designs are so much deep rooted in our culture that we have various castes directly named on the work done by them, such as, *Rangrez*, *Chhipa*, *Chitrakar*, *Naqshaband* and many more.

Nowadays natural and manmade fibers are equally used for the production of clothes and other textiles. Over the last few years the situation in textile sector has changed due to various different factors.

Indian textile industry has various strengths such as fiber, yarn, fabric and apparel. Indian apparel industry has very diversified market with lots of different segments such as traditional handloom products, handicraft items, woolen and silken products etc. The modern textile industry is full of latest technology for mass production which include processes such as spinning, weaving, finishing, apparel and accessories production and finally packing.

With the changing times, the requirement of textiles have also expanded drastically. Textiles are no more restricted to provide protection, warmth and coverage to the wearer. So called "Intelligent Textiles" or "Smart Clothes" represent the next generation of fibers, fabrics and ready made products which have an added value regarding the textiles basic functions. A considerable development started over the last years in the area of functional textiles like sportswear and outdoor clothes to address the extended needs for protection and humidity transport. In this chapter we will discuss about the recent development in the field of textiles and apparel industry.

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Mosquito-Resistant Clothing

North Carolina State University researcher have created insecticide-free, mosquito-resistant using textile materials they confirmed to be bite-proof in experiments with line mosquitos. Mosquito resistant clothing material was developed by studying the biting behavior of mosquito *Aedes aegypti* and then later designing the clothing. This is the mosquito whose bite results in fatal diseases like Dengu fever, Zika virus and Yellow fever.

Counter Surveillance Fashion

The common phrases used to describe such clothing is stealth wear. Such clothes are designed to protect the wearer from detection and surveillance. There are hoodies and cloaks available under this category. Counter surveillance clothing is made of fabric which is metallic, the one which is also used by firefighters as protective clothing. This material actually reduce the visibility of the wearer to aerial surveillance which tracks down the people by sensing heat produced from their body.

Solar Bikini

A solar bikini has been designed using photo voltaic film and conductive material as a thread. Bikini is provided with a five volt output which can be attached with a USB connector and hence can be used to charge electronics such as mobiles and iPods.

Colour Changing Fabrics

Colour changing fabrics are designed by integrating chromic material within the fabric. It can be done either at the spinning process, yarn formation stage, or at the time of weaving. These fabrics are the latest fashion trend nowadays. Chromic material which is used, changes colour according to changing atmosphere conditions. The irreversible colour change is also known as chromism.

Conductive and Composite Textiles

Conductive textiles are also popularly known as e-apparel, in these textiles, electronic material is incorporated. With the advancement of the technology, minute components are merging artificial intelligence with various products. Recently, a British company has designed a new technology which enables to remove fasteners and trimmings such as zippers, buttons, tags, logos, linings and other extra materials from the used garments, without damaging the fabric. This enables it to recover and reuse the original fibers easily.

Novel Fabrics

Novel fabrics are the future of fashion, as another way in which designer can set themselves apart and appeal as a sustainable options. It is a well known fact that eco leather is actually not a sustainable option, so this can be combatted by creating lab grown leather without harming animals. Likewise super strong spider silk are also innovated.

Health Driven Market

With the changing times people are becoming more and more health conscious. This has resulted in various health driven apps and smart watches flooding the market. Along with these, there are several textile products also which are entering the market. For example NADI X, yoga pants that have built-in sensors to correct the user's postures by vibrating as they move through yoga poses.

Hexoskin, for instance, tracks your heart rate and temperature. Digital socks are also available in market, which helps in counting steps, calories burned or gained and other data of the wearer. There is one more product which is a power suit by Fuseprojects which is designed for elderly people, suffering from muscle dystrophia to walk, stand and stay active for longer period of time. All of this data will come in handy for doctors and health providers to help their patients.

Woven in Touch Sensors to Control a Phone

Levis Strauss has introduced a new commuter Trucker Jacket which has jacquard by google woven in it. It has minute electronics incorporated in a snap tag which connects jacquard yarn in the cuff of the jacket to the wearer's phone. This snap tag which is present on the inner side of the cuff, enables the wearer to know about incoming phone calls, by blinking a light on the tag and by using haptic feedback by vibrating it. This tag has a long battery life, that lasts upto about two weeks.

Self-Cleaning Clothes

Life in 21st century is very busy, people want to attain everything in a very short span of time. This makes people super busy, with no time left to clean their daily wear clothes, specially the clothes of people who work in kitchen, clothes of people engaged in sports activity or of the military people who have to survive in extreme conditions. Nano technology enables a new concept of self cleaning clothes, which give clean and fresh clothes everyday. Along with being time saving, this technique is environment friendly too.

Automation and Robotics

When we talk about mass production of garments, automation is the key. In the field of automobile manufacturing, robotics is already being used and now, so it the case with garment manufacturing. With so many stages in production cycle, such as, spreading, laying, marking, cutting, bundling, assembling, finishing and packing, automation will reduce lots of time and energy. Emerging textile technology and innovation companies are developing interesting solutions to optimize retail processes and create insights into customer behavior by "digitizing" garment production.

Alginin

Kelp, a kind of seaweed is used to extract a textile fibre and this process makes the biopolymer solution into a kind of thread that can be knitted or to be 3D printed in order to minimise waste. The final garment produced is biodegradable and can be easily dyed with natural pigments.

Remeant Innovative Textile

Remeant is an innovative material which is made from single use plastic. The process of manufacturing patented Rameant ensures good quality, highly durable, easy to clean, light weight and waterproof. Remeant is non-recycled and a unconventional material.

Orange Fiber

An Italian company has innovated a natural fiber from by-product of industrial pressing of oranges. This is a cellulose fiber. These fibers are manufactured using nano technology, and are supplemented with citrus fruit oils, which in turn help in making it a unique and sustainable fiber.

Reverse Resources

Reverse resources help fashion houses and garment manufacturing units to reduce factory wastage of fabric which is done at the time of cutting of garment pieces. The Software as a Service (SaaS) enables to trace the amount of wastage in cutting before the actual cutting takes place. By keeping the track of this wastage, it is helpful to incorporate these fabric pieces into the garment manufacturing process, hence reducing the amount of other material usage.

AI Silk

AI Silk, manufactured by a Japanese company, is the huge step in taking smart textile to one step forward. This silk is spun from raw silk and then this is converted to a conductive wearable material. AI Silk uses a dyeing procedure which helps in preparing a strong and very absorbent fabric. It is presently being used in medical field as it reduces challenges faced by traditional medical electrodes. The added feature of being soft material which is comfortable to skin and does not deteriorate with washing. This fabric is essential to collect important information which helps in recovery from illness and injury.

Optical Fibre Application in Textiles

Optical fibre application will incorporate telecommunication devices, play consoles, interior textiles, automotive vehicles and public buildings and all those places where cables should not be visible. This fibre application can be successfully used in para-textiles and insulation construction. Furthermore, the measuring solution in para-textiles application contain obvious possibilities. Optodes can be integrated into demanding environments, in small spaces, and not least without the necessity for electricity conduction and tension inside the textiles.

Hence, these are the recent advances in the textile industry. Textile industry is the second largest industry in the world after agriculture. It has a huge global market that affect every country in the world, either directly or indirectly. So, it is very important for textile industries to have constant research and development, for regular growth.

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Bringing Mothers Back into Workforce: Mental Dilemmas, Challenges and Solutions

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Introduction

Material aspirations of modern life and the necessities of daily life often compel both partners to work. A qualified woman may work to maintain an effective career and be financially independent. The single working mother is a combination of all these entities, working not only to run the family, but also to be a financially independent head of the family. (Jayitha Poduval and Murali Poduval).

A working mother can be defined as a woman with the ability to combine a career along with the responsibility of raising a child. Within this broad term may encompass two different types of working women: the stay-at-home mother who works from home and the woman who works away from home while simultaneously managing to fulfill her maternal duties.

According to the World Bank, women comprise just 23% of India's labor force compared with the global average of 48%. A report by the Genpact Center for Women's Leadership (GCWL) states that merely 27% of women join the workforce, 48% drop out within 4 months of returning from maternity leave and 50% of women drop out before they arrive at the age of 30. Majority of women drop out of the corporate workforce to give birth and raise children, provide care to the elderly or sick family members and other such personal reasons. Whenever women wish to join back the workforce, they often face rejection from recruiters because of the gap years and lack of upgraded skills. The case for having more women in an organization has been established widely, it drives financial

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performance and innovation. Women who return to work can be speed trained for a specific time. This support will motivate them to learn more skills in a shorter span of time. Apart from economic benefits, having women in the workforce also provides room for more diverse thinking, problem-solving, and creative working methods.

Keeping women employed after maternity is not just about being inclusive, it also makes business sense. Studies suggest that increasing the participation of women in the workforce by 10 per cent could add \$700 billion to India's GDP by 2025. Unlike the general perception that paid maternity leaves are a burden on an organization, these leaves contribute towards a working mother's well-being and are also good for businesses. These leaves improve employee's growth in the organization and also save expenditure on repetitive hiring process which adds to the expenses and also results in waste of time in training a new person (Stroman et al. 2017)

In various studies it is concluded that the working mothers had better mental health and reported less depression than the non-working mothers. The most frequently reported source of stress for working mothers was not having enough time to do everything at home and office, whereas for non-working mothers lack of social life was a major cause for stress. The various studies done support the expansion hypothesis, which emphasizes the benefits rather than the costs of multiple role involvement.

Common Issues of Working Mothers

The Department of Labor of the United States of America, in The Family and Medical Leave Act of 1993(1993), clearly recognizes the importance of the needs of working parents. According to this, the number of single-parent households and two-parent households in which both parents work is increasing proportionally. It is important for the growth and development of children and the family unit that fathers and mothers are able to participate in early child rearing. The lack of employment policies to accommodate working parents (specifically mothers) can force individuals to choose between job security and parenting. Due to the nature of the specific roles of men and women in our society, the primary responsibility for early child care and family caretaking often falls on women, and such responsibility affects the professional working lives of women more than it affects the working lives of men. Employment standards that apply to men only, have serious potential for encouraging employers to discriminate against employment of women.

Certain common problems affect most working women. Foremost amongst these problems are income difficulties. If the mother works, childcare support (if joint family setup is not available) is essential and can be quite expensive. It may actually offset the financial benefits of both the parents working.

Mostly, in Asian countries in many joint family systems, grandparents and other non-working family members fulfill the need for childcare—they take over the job of childcare when the mother is at work. This important benefit (of readily available trusted child care from the family members themselves) in joint families not only recognizes that the working mother is an important member of the family, but also provides her the necessary cushion and support so that she can perform her dual role efficiently.

Stress can be quite high amongst working mothers and this may often reflect in their relationships at home. She has deadlines: to reach work on time, to send her child to school and to adhere to all the children's needs on time including food and dress, and she is also pressed for time to look after her home and often ailing parents simultaneously.

Housework is still considered as the woman's domain. Working women shoulder added responsibility in the workplace as well as at their domestic front. For example, unexpected sickness of children is an event that is difficult to handle. There is often a need to use unpaid leave and unexpected absences from work. Few employers would consider the needs of sudden leave requirements in women with young children. Even in double-income families, it is still the woman who is expected to take care of a sick child and her professional commitments are treated secondary even by the woman herself.

Nutritional requirements often get neglected in the quest to complete and meet all targets at home as well as at work (Finn, 2000). Finn calls such women as "Everyday Heroes", using everything from the dashboard to the desktop as a dining table. The result is a variety of nutritional deficiencies, ranging from iron and vitamins to proteins. Despite confiding in their physicians many just do not get the mental support they need.

The rush of married women into the workforce runs against traditional thinking that women must choose between family and career. Many observers condemned working mothers as selfish, unnatural and even dangerous to their children and society (Wilson, 2006). It was complained that the rise of juvenile delinquency could also be attributed to women who are working mothers, needs and requirements of the family will always supersede. But women still continue to work, the reasons are often not aspirational. Many of these women are young mothers and have spent years of time and money in developing their careers. Many of these women find the need to maintain a parallel source of income as a sign of social security and independence.

A mother may work because of a financial compulsion, a desire to fulfill herself, or to supplement the family income. In all of these three scenarios, she is a working mother, but the implications of her situation are different.

As Wilson (2006) says “many working women said that they worked because they ‘needed’ the money and which they defined as specific material goods-an extra lesson of study, additional clothes of specific brands, a vacation, extra furniture, owning a new home, car or even just a television-explaining their work was bringing a rise in the family's standard of living.” Both men and women had material needs and emotional expectations for better standards of living and a working wife could add considerably to achieving those goals (Wilson, 2006).

A financial compulsion for a woman could be a less competent spouse with an inadequate income, or a single mother who is dependent on her own earnings for survival. A second additional income from the mother adds to better living conditions and lowers the stresses of struggling for a comfortable life. However, when the mother is returning to work (without any financial compulsion) purely to maintain and advance a career that satisfies her and keeps her independent, she comes under scrutiny and criticism (Heilman and Okimoto, 2008).

Working women reformed the image of a good mother from one who stayed at home to one who also took on extra effort for her family's benefit. The working mother has to keep the convincing stand that she is working not just for her own sustenance, but also for the betterment of the family. Something like, “a working woman who put herself out for the kid's sake” (Wilson, 2006). This would however not fully recognize the working mother as an important member of the workforce and an important worker in her own right! It is possible for a working mother to protect her right to work in a number of ways. A less affluent member of society would put the argument that it brings in much needed extra money. A woman from a better class of living would say she has more money to spare and is utilizing her talents and skills to the best level by working in a job. In either case, the most important point is that it shouldn't affect the health and wellbeing of their children in any way. In any case, “having to work” takes away much of the problems a working mother has to face (Wilson, 2006). This compulsion of income and work is not a constant factor for every strata of women so many women leave jobs because their family's survival is not dependent on their jobs.

For women, there is a positive relationship between paid work and health persists across race, marital status, and life course. It is strongest among full-time working women, who report a lower increase in physical limitations relative to their unemployed or intermittently employed peers (Palvako and Smith, 1999). Full-time work, especially skilled work for women, is associated with higher levels of self-esteem, self-efficacy, and personal control and provides individuals with greater economic security – and better health – relative to the unemployed or underemployed (Lennon, & Dohrenwend, Ross & Mirowsky).

McKinsey's 2020 Women in the Workplace report, conducted along with leanIn organization revealed a startling statistic: one in four working women said that they were considering downshifting their careers or dropping out of the workforce entirely.

For working mothers, and particularly those mothers with young children, the number was one in three. Research from McKinsey shows just how dramatically the pandemic has affected working mothers. Women are dealing with a “double shift” of household responsibilities, mental health challenges, a more difficult remote-work experience, and concerns about leaving a job after motherhood. These burdens come on top of structural barriers for working women, including being the “only” woman in the room and having an allyship role for others.

One of the important aspects in early child care is breastfeeding. WHO recommends exclusive breastfeeding for the first six months and a diet with complementary foods up to two years and beyond. Breastfeeding contributes to the well-being of both mother and child. But, for employed women, who have to get back to work after the end of maternity leave, breastfeeding becomes a difficult task.

Promila Kapur (1970) in her work has highlighted the ability of women to manage dual roles. She noted that generally working women happily accept and manage dual roles but the conflict is felt by those who feel torn between loyalty towards their job and responsibility towards their husband and children. She explains “Intense conflict is possible when there is a clash between two equally important roles with similar aspirations.

Krishna Chakraborty in her study, the conflicting worlds of working mothers, found that employed housewives all over the world have to face the problem of adjustment among the varied role expectations: at work, home, family and childcare. Their position requires them to play a dual set of roles one as homemakers, wives and mothers, and the other as employees. Simultaneously confronted with the dual demands of home and work, they face adjustment problems. At home along with biological functions, they have other expectations to perform because of the society’s prevailing cultural norms and values. These new circumstances and responsibilities need a redefinition and reallocation of roles, duties, and responsibilities, not merely for women but also for every member of the family. Unless that is achieved there is no chance of decreasing the overload on working women and mothers. Whether it is out of their own choice or financial need that women choose jobs, adjustment between their roles and obligations is not an easy task. It requires ability and goodwill along with physical endurance and psychological acceptance.

Unpacking Motherhood Stereotypes

The construct of ideal motherhood is a product of patriarchal ideology where the perfect mother would give birth to sons (for family lineage), socialize daughters so that they can become obedient replicas of their mothers and excel in taking care of the ‘private sphere’ which comprise of home and family. In Indian culture, this traditional motherhood stereotype is reinforced in many ways through the nurturing mother-goddess “ghar ki laxmi” (or Annapurna) cult in Hindu religion that glorified the self-

sacrificing mother who is totally and deeply dedicated to the hearth and home. Religious studies scholars have explained that, “Colloquial phrases about the ‘Lakshmi of the home,’ famous in many Indian languages, refer to the quality of auspiciousness of women who play the proper wifely [or maternal] role” (Ganesh, 2010).

However due to modernization, and with the opening up of markets (LPG reforms) under neoliberalism and globalization in the 1990s, another new concept gradually gained visibility: that of the ‘working mother.’ Setting up a binary between ‘working mother’ and ‘stay-at-home mother’ also veils a concept in which Arlie Hochschild coined the term “second shift” which refers to the second part of a working mother’s day in which she comes home after working outside in a profession and has to take up care work and housekeeping work at home.

In the neoliberal market regime, the definition of the good mother refers to the mother who is both a good reproducer (birthing and nurturing future ideal neoliberal workers) and also a good producer (working outside the home as an ideal neoliberal worker herself). Such mothers are expected to be “neoliberal self-optimizing economic agents in the ‘public’ realm and maternalist self-sacrificing mothers in the ‘private’ realm” (Giles, 2014). This has led to the merging of expectations of the stay-at-home mother and the working-mother into the ideal neoliberal mother-worker, the supermom who effortlessly balances work and home, even in extraordinary times such as the coronavirus pandemic and the consequent lockdown. In Indian religio-cultural contexts, the supermom is usually visualized and idealized through the image of the multiple-handed mother goddesses (like Durga). The focus on the ‘ease’ with which the metaphorical supermom can juggle between work and home again negates and invisibilizes the effort and exhaustion of mothers; silences any resistant or non-normative voice; intensifies maternal guilt and self-blaming; and shames and labels mothers who fall short of the ideal supermom standards as ‘bad’ or ‘failed’ mothers.

Many more women now return to the workforce while having a newborn and the times have changed from a time when women were encouraged, whether covertly or overtly, to give up their careers in favor of being full-time mothers. Sometimes, the return to work is not a choice for all women. Some have no alternative except to return to their employment and separate from their newborns or infants when they might prefer to remain in the primary caretaking role. These women are no less vulnerable to the complications of returning to work than are the women who have the choice to remain home but decide to resume their professional work. Moreover, there is a range of feelings a new mother may have regarding her return to work. Some women may be eager to leave the chaotic, baby-focused surrounding of home life to return to the usually organized and adult-focused work environment. But many new mothers may not be in the best of mental and physical health to fulfill so many new responsibilities at work and home. Thus, the autonomy of women should be given so that they do not have any pressure to fit in a particular image.

Conclusion and Implications

In summary, it provides a clear overview in understanding the perception, feelings as well as challenges faced by married women professionals in terms of their career decision and choices. The conclusion is that pushed-out factors are the major drivers in influencing these groups in leaving the workforce which are controllable. Firstly, married women's value and career orientation has shifted to focus on home, indicating that they are concerned about balancing their family needs as priority. In the effort of trying to balance between work and family responsibilities, this constrained their ability to exit from the workforce. They begin to question whether the costs of juggling and the impact on their life as a whole is worth it before making a career decision. Secondly, the women professionals' negative experiences in former careers such as inflexible workplace, high volume of work, long working hours, outstation business trips, office politics have heightened their desire to leave the workplace. All these "pushed factors" increase their frustration and dissatisfaction towards jobs and as such drive them to disengage and lastly decide to withdraw from the workplace.

Thirdly, women professionals are compelled to stay at home while exploring alternative career options such as part-time or small businesses that would afford them to spend greater time with their family. Due to such constraints, more and more women are switching towards the creation of their own business, where they enjoy more flexibility, autonomy and freedom. To fulfill their own needs of achievement, self-esteem, flexibility in life, as well as to be financially independent, there have been an increasing number of women who entered in entrepreneurship (Raley et al., 2006).

Challenges of the adjustments women make after childbirth are the socially constructed picture of being a mother who "has it all" – perfect body, happy relationship with partner, loving relationships with children, an active social life and professional success

McMahon points to the influence of 'cultural rhetoric of individualism', for the middle classes in particular, she argues, a good mother demonstrates 'commitment without engulfment', and employs 'strategies of separation'. For middle class women 'employment is constructed as an opportunity for the expression of self'. Similarly, Jordan et al (1994) point to the moral imperative operating amongst the middle classes to 'make something of yourself'. In these circumstances, pregnancy and having children constitute a challenge to professional identity (Bailey 1999). Returning to work, can lead to a new resolution, a new alignment between different criterias of identity. Some jobs have a moral worth in the same way motherhood does, but on a larger and more public stage (Bailey 1999). Even so, within families there is also a possibility that the worth of work and the worth of the worker are just reduced to a financial calculation.

Work is central to identity for a human being, be it a man or woman. It develops a sense of self-esteem that one can contribute to society, not indirectly through the private sphere of family and home, but directly working in the public arena along with professional growth and social identity. There is also a glimpse of another aspect of balance for these women – the absence of fathers in the discourse of care, but there is a need to take partners into account for some balance of family life or resolution of identity and responsibility in the public sphere. This support will make a clear way for women to return back to work after motherhood.

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Society during the Vedic Period

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Introduction

The picture of the growth of Aryan civilization in India, however cannot be complete without a sketch of the social, economic, political, legal and religious institutions of the Aryan people. This paper will examine the society of the Aryans of the Rig Vedic period (1500 BC) and later Vedic period (1000-600 BC). In spite of the great antiquity of the Vedic period, the Aryan society of that time was by no means primitive. The Aryans were active and optimistic people, who prayed to their gods for granting them long life, worldly prosperity and brave sons. They had developed the ideas of law, order and good government. Their standard of morality was high. They knew many arts and crafts and had various amusements to entertain themselves. They had developed a rich and scientific language in which their sages' composed prayers. The aspects of family life, social differentiation, marriage, position of women and education of the Vedic people will be discussed in great detail subsequently.

Rig Vedic literature has several words for household units like 'durna', 'gaya' and 'griha' among several others which might have corresponded to different kinds of households. The primary unit of social life was the **family**, which was patriarchal, the head of the family being the eldest male member (usually the father), from the Rigvedic times. However, the term for the family(kula) is rarely mentioned in the Rig Veda. RC Majumdar presents two arguments regarding this, one being of a strict family discipline and the other of a joint family, substantiating it with examples and hymns from the Rig Veda. Many other scholars agree with the latter

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argument. Romila Thapar argues that the large extended family of the Rigvedic times encouraged the elders in the family to exploit the younger members, this she considers the lineage system. Several Marxist Historians, especially Suvira Jaiswal, have however, questioned her formulation in that they find traces of social division within the tribe, along the lines of classes rather than lineage. A notable feature of the etiquette of family life was the emphasis on the hospitality to the guest (Atithi).

In the later Vedic period, we do not see a drastic change in the family life, however Majumdar does put forth the view of individual families coming into forefront in this period headed by the father or eldest brother to whom belongs the Kula (originally "home or house" of the family, later the family itself). Upinder Singh says the variety of household forms in the Rig Vedic period made way for an idealised Griha unit headed by the Grihapati. Adoption was resorted to not only in the absence of natural children, but also to secure the addition of a specially qualified member to the family, like the Visvamitra's adoption of Sunahsepa as mentioned in Aitareya Brahmana. **Three asramas**, i.e., stages of life were prescribed and these stages were represented by the brahmachari (studentship), grhastha (householder), vanaprasthi (partial retirement from householding life by living in the forest). It seems that the fourth i.e., the sanyasa (or complete retirement from active participation in the world) stage of life was not known till the time that the Upanishads were written. The Vedas lay emphasis on the people following all the three ashramas. The sanyasis or the ascetics in later periods were individuals who protested either passively or actively against the Vedic social structure.

The word "varna" appears in many faces in the family books and usually means light or colour. The Rig Veda more frequently speaks of only two varnas- The Arya varna and the Dasa/Dasyu Varna between whom a hostile relation is often said to have existed. In three places in the Rig Veda, the dasa/ dasyu varna is often described as of dark-skin (krishratvach), of an unintelligible speech (mridhravach) and in one passage as "Anasa". Whether this means noseless, faceless or mouthless is uncertain, as opposed to Arya varna who were described as fair, blue-eyed and blonde people. The Rigveda shows much greater familiarity with terms like Jana, Gana, Vis than with Varna. All these terms spoke of clan or tribe-like social groups which point to the existence of a society simpler than the one strictly observing the complex Varna regulations. Marriages between people belonging to unequal Varna apart from those between Arya Varna and Dasvarna did not find any opposition. A clear reflection of this is the mention of a poet whose father was a physician and mother, the grinder of corn. The terms Brahmana and Kshatriya occur frequently in the family books but the term Varna is never associated with them. Moreover, the words Vaishya and Shudra are absent. Thus, the four-fold Varna order is seen as the feature of the later Vedic texts.

In the later Vedic texts, the term Varna is used definitely in the sense of **caste** without reference to colour in this age. Varna was partly an ideology that reflected the increasing social differentiation of the times. It was even more an ideology that justified this differentiation from the point of view of the elite groups. It was no longer limited to the Areyavarna and the Dasavarna but now, it divided the society into four hereditary strata, defining social boundaries, roles, status and ritual purity. The Purusha Sukta (Purusha Hymn) in the 10th Mandala of the Rig Veda which is considered to be the later edition, refers to four social groups- Brahmana (the priest), Rajanya (instead of Kshatriya) (the warrior), Vaishya (the trader) and Shudra (the slave), though the word Varna is not mentioned. It describes the four groups as originating from different parts of the body of a primaeval giant named Purusha. The body symbolism in the purusha hymn indicates that the four varnas were visualised as interrelated parts of an organic whole. From his mouth came the Brahmana, from the arms Rajanya, the Vishyas from the thighs while from the feet were born the Shudra. It clearly indicates a hierarchy of ranks with the Brahmana at the top and the Shudra at the bottom. They are considered to be the natural, eternal and unchangeable order of the world. The first three varnas were called the Dvijas or the twice born as they were entitled to the sacred initiation ceremony (Upanayana) while Shudras were denied this status. R S Sharma finds in the Vaishya the actual wealth producing section in the society and the Shudras as the labouring group. The Brahmanas and Kshatriyas had an undoubted precedence over the previously mentioned Varnas. Although there are no clear indications of the practice of untouchability in later Vedic texts, groups such as the Chandalas were clearly looked on with contempt by the elites. The Chhandogya Upanishad and Taittiriya and Shatapatha Brahmanas mention the Chandala in a list of victims to be offered in the presumably symbolic 'Purushamedha' (human sacrifice), and describe him as dedicated to the deity Vayu (wind). The dedication to Vayu has been interpreted as indicating that the Chandala lived in the open air or near a cemetery, but this is far from certain. The Chhandogya Upanishad states that those who perform praiseworthy deeds in this world swiftly acquire rebirth in a good condition- as a Brahmana, Kshatriya or Vaishya, while those who perform low actions acquire birth in a correspondingly low condition- as a dog, boar or Chandala.

The Rig Veda attaches importance to the institution of **marriage** and refers to various types of marriage i.e. monogamy, polygyny and polyandry. Rituals indicate post-puberty marriages and there are references to women choosing their husbands. A woman could remarry if her husband died or disappeared. There are also references to unmarried women like Ghosha, who grew up in the houses of their parents. Certain hymns in the Rig Veda also indicate towards elopement of lovers. As mentioned before, marriages between Aryavarna and Dasvarna were prohibited. R C Majumdar has written that there was considerable freedom on the

part of young persons concerned in the selection of wife or husband, as they generally married at a mature age. There is no clear evidence that the consent of the parent or brother was essential. Very little evidence of the prevalence of Sati or Widow burning is there in the Rig Veda, though we may detect a semblance or reminiscence of this ancient custom. The only safe conclusion would be that the practice, even if known, was not widely prevalent and was just confined to the Rajanya class. Mentions of the practice of Niyoga i.e., practice requiring a childless widow to cohabit with her brother-in-law until the birth of a son has also been mentioned.

Nineteenth century socio-religious reformers and early twentieth century nationalist historians often present the Vedic Age as a golden age for **women**. This statement is based on the existence of worship of Goddesses, composition of hymns by women, references to women sages, participation of women in rituals along with their husband, chariot races, attending the Sabha and other social gatherings. Women had to be under the protection of some guardian or the other eg. their fathers, husbands or brothers but are still said to enjoy a considerable amount of freedom. They did not remain indoors but moved around freely and attended fests and dances. However, Upinder Singh refutes these arguments by saying that the discussion about women of the Vedic Age focused on elite women, thus ignoring the less privileged members of this sex. She goes on to say that although the Rig Veda mentions goddesses, none of them were as important as the major Gods like Indra, Agni etc. Worship of female deities marked the ability of the community to visualize the divine and feminine form but did not mean real women enjoyed power. The number of hymns attributed to women is miniscule. There is also no mention of women priests. While women participated in sacrifices performed on behalf of their husbands, they did not perform sacrifices in their own right. They had less access to sacred learning. The birth of daughters was undesirable while hymns were composed for the birth of sons. Thus, saying that this age was a golden period for women is highly debatable and controversial.

The male dominance in family and society remained in the later Vedic period too. Polygyny was more prevalent than polyandry. The institution of Gotra appeared in later Vedic period. Literally it means cow pen, but in course of time it signified descent from a common ancestor. People began to practise Gotra exogamy. No marriage could take place between persons belonging to the same gotra or having the same lineage. The remarriage of a widow was allowed as seen in Atharvaveda. Polygamy undoubtedly prevailed. Hypergamy existed. We can see that an Aryan could marry a Shudra wife but a Shudra could not have an Aryan wife i.e., a male of a lower class could not marry a girl of a higher class. The system of dowry also prevailed.

Ranabir Chakravarti mentions that the position of women seems to have taken a worsening turn from the later Vedic times. The later Vedic texts strongly favour the lowering of age of marriage of girls to pre puberty stage, thus limiting their scope of choice of spouses and making their father the decision maker in this aspect. There is a clear disapproval of providing education and vedic learning for women. In fact, it is said that educated women become devoid of their femininity and assume more male like features. Sukumari Bhattacharjee says that women of this period were trained primarily in domestic chores. For women, marriage became as sacred as learning vedic texts. This later vedic texts offer little or no presence to women's presence in popular assemblies. (sabha and samiti). Recent researches by Sukumari Bhattacharjee, Kumkum Roy and Uma Chakravarti among many others have exposed the limitation of the Altekarian paradigm of looking at the supposedly dignified position of early Indian women. They have effectively driven home the point that in the patriarchal social and family life of the Vedic times, women did not enjoy an honourable position in the society.

Evidently, the entire instructions were **orally** given. The word 'Brahmacharian' used in the sense of a religious student is found in the Rig Veda. The sharpening of intellect and development of character in the Brahmacharian was aimed at as seen from the celebrated Gayatri verse which prays to Savitri for a stimulation of intellect. A very debatable point is whether the art of writing was known at all in this age. It is a well-known fact that no actual specimens of alphabets dated before the 4th century BC have been discovered in India. Some scholars are of the opinion that when Rig Veda was finally arranged in its present form, it was written in a script which formed an intermediate stage between the Indus Script and the Ashokan Alphabet. On the other hand, if we are to believe that these voluminous texts were committed in those old days to writing, we are faced with the problem of writing materials of which nothing is known, Thus, all this is a mystery.

During the later Vedic period, the Vedic literature formed the chief subject of instruction and a vital part of education. The process of imparting knowledge became more systemized during this age. Oral transmission of literary education continued. Art of writing was probably known to the Vedic Indians but the fact that it played no part in the education system of Ancient India is accepted by all. Vedic study, service to the teacher and chastity were the principal duties of the Brahmacharian. We know that women were taught to dance and sing, however their participation in the intellectual life of the society is not certain. It is important to note that numerous Vedic schools existed all over the country. What we can understand from our study of the Vedic Society is that, it was not static but dynamic. From the Rig Vedic period to the later Vedic period, society was constantly evolving and newer elements in the social aspect of life are very much evident from the changes one can see between the two periods.

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A Study on Security Analysis on Selected IT Sectors

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Introduction

Investment is parting with ones funds, to be used by another party, user of funds, for productive activity. Investment means conversion of cash or money into a monitory asset or a claim on future money for a return. The process of analyzing the individual securities and the market as a whole and estimating the risk and return expected from each of the investments with a view to identifying undervalued securities for buying and overvalued securities for selling is both an art and science and this is what is called security analysis. In this project we are going to see the complete picture of securities. The investor is going to decide whether to purchase the security or sell the securities by using the statistical tools such as moving averages and oscillators.

History of Stock Exchange of India

Security trading in India goes back to the 18th century when the East India Company began trading in loan securities. Corporate shares started being traded in the 1830s in Bombay (now Mumbai) with the stock of Bank and Cotton presses. The simple and informal beginnings of stock exchanges in India take one back to the 1850s when 22 stockbrokers began trading opposite the Town Hall of Bombay under a banyan tree. The tree still stands in the area which is now known as Horniman Circle.

The venue then shifted to banyan trees at the Meadows Street junction, which is now known as Mahatma Gandhi Road, a decade later. The shift continued taking place as the number of brokers increased, finally settling in 1874 at what is known as Dalal Street. This as yet informal group known as the Native Share and Stockbrokers Association organized themselves as the Bombay Stock Exchange (BSE) in 1875. The BSE is the oldest stock exchange in Asia and was the first to be granted permanent recognition under the Securities Contract Regulation Act, 1956.

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Need for the Study

Security analysis is important because it enables the investors to establish the expected return and risk for a stock and to evaluate its desirability in a logical, rational manner. First, economic analysis assesses the general state of the economy and its potential effects on security returns.

SEBI- Securities Exchange Board of India

SEBI plays an important role in regulating all the players operating in the Indian capital markets. It attempts to protect the interest of investors and aims at developing the capital markets by enforcing various rules and regulations.

Meaning of SEBI

SEBI is a statutory regulatory body established on the 12th of April, 1992. It monitors and regulates the Indian capital and securities market while ensuring to protect the interests of the investors formulating regulations and guidelines to be adhered to. The head office of SEBI is in Bandra Kurla Complex, Mumbai.

Research Methodology

The search for knowledge through objective and systematic method of finding solution to a problem is research.

Secondary Data

The data for this study is basically derived from secondary source data which includes National stock exchange, Wikipedia, investopedia.com and other websites and books for reference etc.

Objectives of the Study

- To study and understand the security analysis concepts.
- To interpret the securities of various IT sectors such as Wipro Ltd, TCS Ltd, with the help of statistical tool i.e simple moving average, exponential moving average, ROC (Rate of change), RSI (Relative strength index).
- To understand the concept of investment in securities through statistical tool.
- To advise the investors, how to choose the optimum securities for the investment purpose.

Scope of the Study

The study was limited to just analysis of the securities for the investment purpose. The study covers the period of past 10 days of data. This is going to help in knowing the level of risk and likelihood of profit, both in short run trend and long run trend which helps the investor for investment decision making i.e. whether to hold on or sell the securities or whether to buy the securities.

Analysis and Interpretation of Securities

- **Simple Moving Average**

Meaning

These are the one of the indicators to identify the trend direction of a stock or to determine its support and resistance levels.

- **Exponential Moving Average**

Meaning

It refers to an statistical indicator which is used to predict the future price movements by considering the present and past data.

$$\text{EMA} = [\text{Current Closing Price} - \text{Previous EMA}] * \text{Factor} + \text{Previous EMA}$$

- **Rate of Change**

Meaning

It is a popular oscillator which measures the rate of change of the current price as compared to the price a certain number of days or weeks back.

$$\text{ROC} = \text{Ratio} - 1$$

- **Relative Strength Index**

Meaning

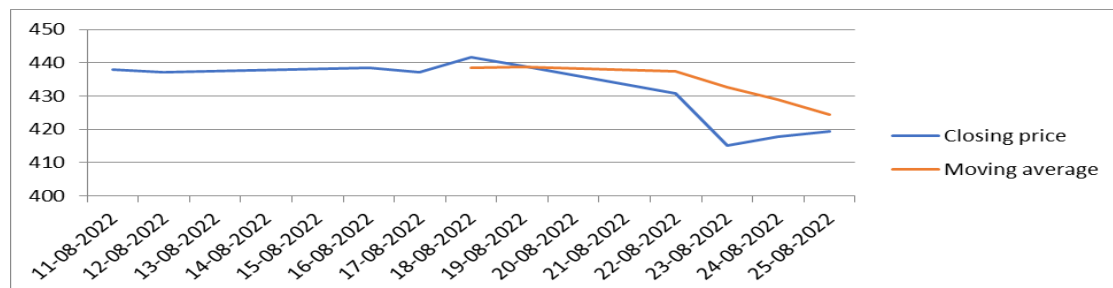
This is a powerful indicator that signals that buying and selling opportunities a head of the market.

$$\text{RSI} = 100 - [100 / 1 + \text{RS}]$$

Wipro Ltd.

- **Simple Moving Average**

Days	Closing Price	Total of 5 Days Price	Moving Average
11/08/22	438	-	-
12/08/22	437.10	-	-
16/08/22	438.50	-	-
17/08/22	437.25	-	-
18/08/22	441.75	2192.6	438.52
19/08/22	438.95	2193.55	438.71
22/08/22	430.90	2187.35	437.47
23/08/22	415	2163.85	432.77
24/08/22	417.80	2144.4	428.88
25/08/22	419.30	2121.95	424.39



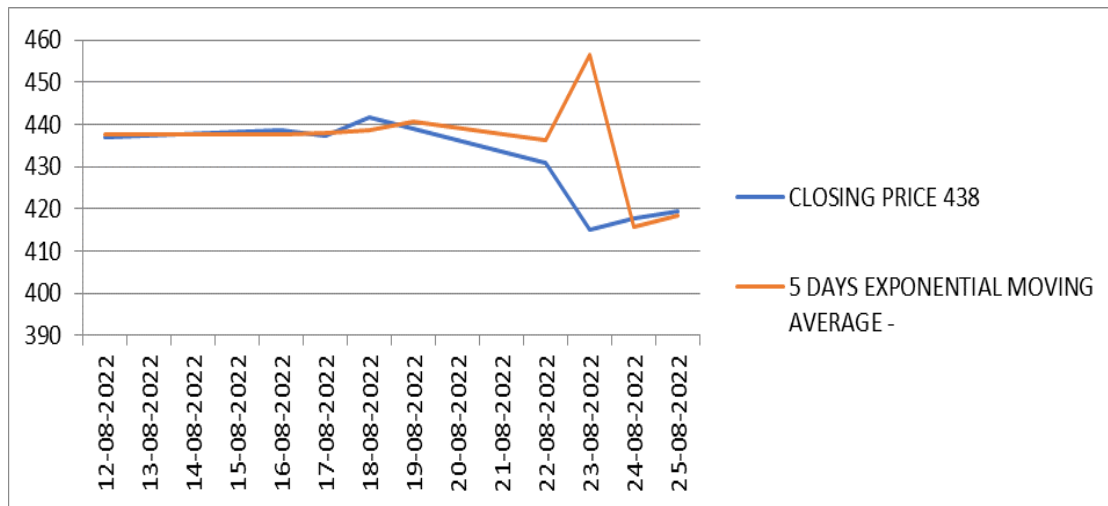
Interpretation

By the above calculation and analysis by seeing the trend line (Moving Average) we can observe that it is above the price line (Closing Price) which shows the negative sign for the short term investors.

Exponential Moving Average

Factor = $2/n+1$
 = $2/5+1$
 = $2/6$
 = 0.33

Days	Closing Price	Working Note	5 Days Exponential Moving Average
11/08/22	438	-	-
12/08/22	437.10	$(437.10-438)0.33+438$	437.70
16/08/22	438.50	$(438.50-437)0.33+437.10$	437.56
17/08/22	437.25	$(437.25-438.50)0.33+438.50$	438.08
18/08/22	441.75	$(441.75-437.25)0.33+437.25$	438.73
19/08/22	438.95	$(438.95-441.75)0.33+441.75$	440.82
22/08/22	430.90	$(430.90-438.95)0.33+438.95$	436.29
23/08/22	415	$(415-430.90)0.33+430.90$	456.65
24/08/22	417.80	$(417.80-415)0.33+415$	415.92
25/08/22	419.30	$(419.30-417.80)0.33+417.80$	418.29



Interpretation

By the above calculation and analysis it is not good time to invest for the short term, As we can see the decreasing trend.

Calculation of ROC [Rate of Change]

Days	Closing Price	Closing Price 5 Days Ago	Ratio	ROC
11/08/22	438	-	-	-
12/08/22	437.10	-	-	-
16/08/22	438.50	-	-	-
17/08/22	437.25	-	-	-
18/08/22	441.75	-	-	-
19/08/22	438.95	438	1.00	0
22/08/22	430.90	437.10	0.98	-0.02
23/08/22	415	438.50	0.94	-0.06
24/08/22	417.80	437.25	0.95	-0.05
25/08/22	419.30	441.75	0.95	-0.05

Working Note

Ratio = Current Price/Price N period ago

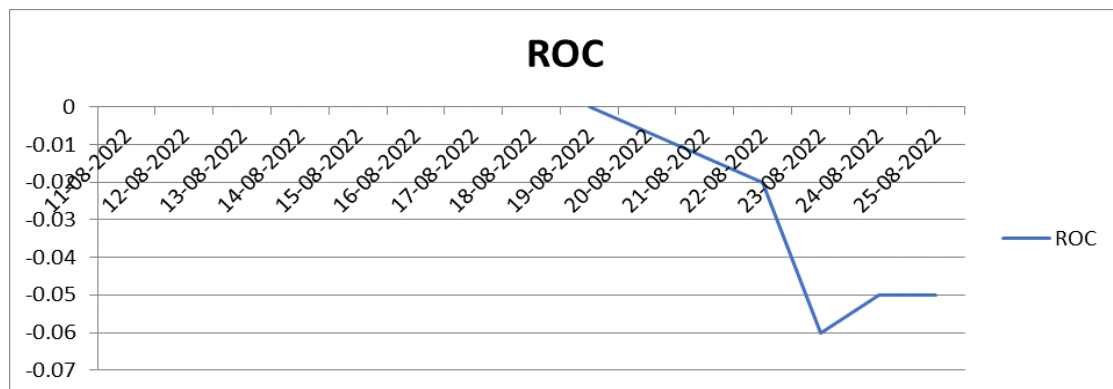
$$= 438.95/438$$

$$= 1$$

ROC = Ratio-1

$$= 1-1$$

$$= 0$$

**Interpretation**

The ROC lines oscillate across the zero line. By this above calculation and analysis we can see that the trend line is below the zero line which is oversold and hence it is better to buy the shares.

The ROC line oscillate across the zero line

When ROC line is above the zero line or reference line the price is rising and when it is below the zero line the price is falling.

One should buy the shares which are oversold and sell the share which is overbought.

Calculation of RSI [Relative Strength Index]

Days	Closing Price	Gain	Loss
11/08/22	438	-	-
12/08/22	437.10	-	0.9
16/08/22	438.50	1.4	-
17/08/22	437.25	-	1.25
18/08/22	441.75	4.5	-
19/08/22	438.95	-	2.8
22/08/22	430.90	-	8.05
23/08/22	415	-	15.9
24/08/22	417.80	2.8	-
25/08/22	419.30	1.5	-
	Total	10.2	28.9
	Average =	10.2/9	28.9/9
	Average =	1.13	3.21

$$\text{RSI (Relative Strength Index)} = \frac{\text{Average gain per day}}{\text{Average loss per day}}$$

$$\text{RSI} = 1.13/3.21 = 0.35$$

$$\begin{aligned} \text{RSI} &= 100 - [100 / (1 + \text{RSI})] \\ &= 100 - [100 / (1 + 0.35)] \\ &= 100 - [100 / 1.35] \\ &= 100 - 74 \\ &= 26 \end{aligned}$$

In the above calculation RSI is oversold, i.e 26 which is nearer to the 30. Means 30 indicates buy or not to sell securities decision.

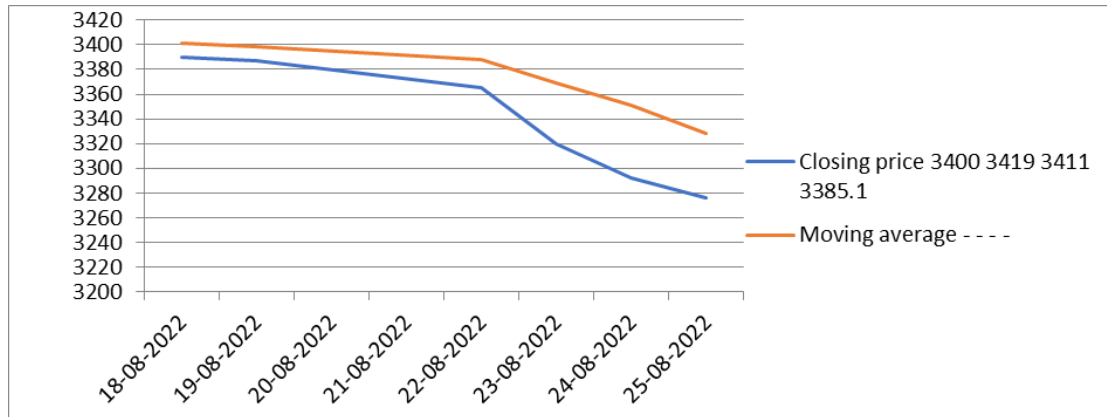
Note

- RSI value above 70 is considered as over bought.
- RSI value below 30 is considered as over sold.

TCS (Tata Consultancy Services)

- **Simple Moving Average**

Days	Closing Price	Total of 5 Days Price	Moving Average
11/08/22	3400	-	-
12/08/22	3419	-	-
16/08/22	3411	-	-
17/08/22	3385.10	-	-
18/08/22	3390	17005.1	3401.02
19/08/22	3387	16992.1	3398.42
22/08/22	3365	16938.1	3387.62
23/08/22	3319.95	16847.05	3369.41
24/08/22	3292	16753.95	3350.79
25/08/22	3276	16639.95	3327.99



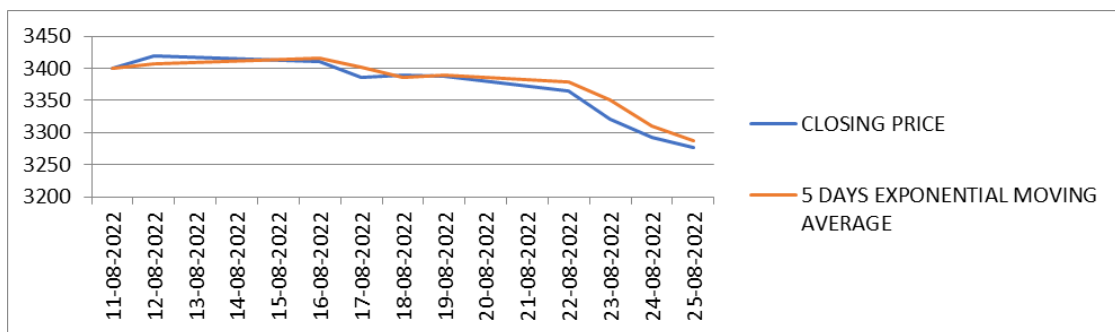
Interpretation

By the above calculation and analysis by seeing the trend line (Moving Average) we can observe that it is above the price line (Closing Price) which shows the negative sign for the short term investors.

Exponential Moving Average

Factor = $2/n+1$
 = $2/5+1$
 = 0.33

Days	Closing Price	Working Note	5 Days Exponential Moving Average
11/08/22	3400	-	3400
12/08/22	3419	$(3419-3400)0.33+3400$	3406.27
16/08/22	3411	$(3411-3419)0.33+3419$	3416.36
17/08/22	3385.10	$(3385.10-3411)0.33+3411$	3402.45
18/08/22	3390	$(3390-3385.10)0.33+3385.10$	3386.71
19/08/22	3387	$(3387-3390)0.33+3390$	3389.01
22/08/22	3365	$(3365-3387)0.33+3387$	3379.74
23/08/22	3319.95	$(3319.95-3365)0.33+3365$	3350.13
24/08/22	3292	$(3292-3319.95)0.33+3319.95$	3310.72
25/08/22	3276	$(3276-3292)0.33+3292$	3286.72



Interpretation

By the above calculation and analysis it is not good time to invest for the short term, As we can see the decreasing trend.

Calculation of ROC [Rate of Change]

Days	Closing Price	Closing Price 5 Days Ago	Ratio	ROC
11/08/22	3400	-	-	-
12/08/22	3419	-	-	-
16/08/22	3411	-	-	-
17/08/22	3385.10	-	-	-
18/08/22	3390	-	-	-
19/08/22	3387	3400	0.99	-0.01
22/08/22	3365	3419	0.98	-0.02
23/08/22	3319.95	3411	0.97	-0.03
24/08/22	3292	3385.10	0.97	-0.03
25/08/22	3276	3390	0.96	-0.04

Working Note

Ratio = Current Price/Price N period ago

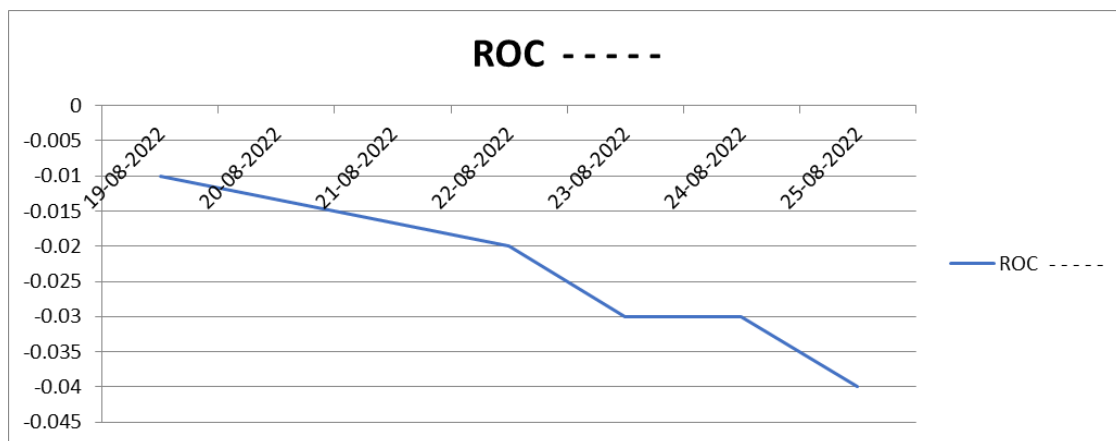
$$= 3387/3400$$

$$= 0.99$$

ROC = Ratio-1

$$= 0.99-1$$

$$= -0.01$$



Interpretation

The ROC lines oscillate across the zero line. By this above calculation and analysis we can see that the trend line is below the zero line which is oversold and hence it is better to buy the shares.

The ROC line oscillate across the zero line.

When ROC line is above the zero line or reference line the price is rising and when it is below the zero line the price is falling.

One should buy the shares which are oversold and sell the share which is overbought.

Calculation of RSI [Relative Strength Index]

Days	Closing Price	Gain	Loss
11/08/22	3400	-	-
12/08/22	3419	19	-
16/08/22	3411	-	8
17/08/22	3385.10	-	25.9
18/08/22	3390	4.9	-
19/08/22	3387	-	3
22/08/22	3365	-	22
23/08/22	3319.95	-	45.05
24/08/22	3292	-	27.95
25/08/22	3276	-	16
	Total	23.9	147.9
	Average =	23.9/9	147/9
	Average =	2.65	16.33

$$\text{RSI (Relative Strength Index)} = \frac{\text{Average gain per day}}{\text{Average loss per day}}$$

$$\text{RSI} = 2.65/16.33 =$$

$$\begin{aligned} \text{RSI} &= 100 - [100 / (1 + \text{RSI})] \\ &= 100 - [100 / (1 + 0.16)] \\ &= 100 - [100 / 1.16] \\ &= 100 - 86 \\ &= 14 \end{aligned}$$

Interpretation

In the above calculation RSI is oversold, i.e 14 which is nearer to the 30. Means 30 indicates buy or not to sell securities decision.

Note

- RSI value above 70 is considered as overbought.
- RSI value below 30 is considered as oversold.

Limitations

The major limitations are:

- Detailed study of the topic was not possible due to the limited size of the paper.
- The availability of the information in the form of annual reports and price fluctuations of the companies was a big constraint to the study.

Findings

- **Wipro Ltd.**
 - **Simple Moving Average:** under this calculation and analysis by seeing the trend line we can observe that it is continuously decreasing which shows the negative sign.
 - **Exponential Moving Average:** under this calculation and analysis it is not good to invest for the short term, as we can see the decreasing trend.
 - **ROC (Rate of Change):** The ROC line oscillates across the zero line. Under this analysis we can see that the trend line is below the zero line which is oversold and hence it is better to buy.
 - **RSI (Relative Strength Index):** RSI is oversold, i.e 26 which is nearer to the 30. Means 30 indicates buy or not to sell securities decision.
- **TCS (Tata Consultancy Services)**
 - **Simple Moving Average:** under this calculation and analysis we can see the decreasing trend.
 - **Exponential Moving Average:** Under this calculation and analysis we can see the decreasing trend.
 - **ROC:** Under this analysis we can see that the trend line is below the zero line which is oversold and hence it is better to buy.
 - **RSI:** In the above calculation RSI is oversold, i.e 14 which is nearer to the 30. Means 30 indicates buy or not to sell securities decision.

Suggestion

Suggestions to Investors

- We need to start off by knowing about the company and the industry it operates in.
- After getting to know the overview of the company, we need to go through its products and services which it offers to its customers.
- Investing rules to be remembered.
- Before buying a security, its better to find out everything one can think about the company, its management and competitors, its earning possibilities for growth.
- Learn how to take your losses cleanly. Don't expect to be right all the time. If you have made a mistake, cut your losses as quickly as possible.

Suggestions to Company

- Company should issue its shares in Initial Public Offering.
- Company should provide efficient dividend to the investors by increasing its sales as well as profit, so that the investors will get attracted.

- Companies should try to advertise i.e promote their products all over the world so that more number of investors and even many of the customers will be attracted.
- Companies should always try to maintain good name and fame.

Conclusions

- Now we have the clear idea and understood the concept of security analysis.
- And also we have done the analysis and interpretation of various IT sectors so that we get the clear idea of where to invest and where not to invest.
- The statistical tools which we have used in our project have given the accurate result. That is the idea of buying the shares and selling the shares.
- And the interpretation has given the clear-cut idea of what must be done with our shares.
- Finally, I would like to conclude that it is better to invest instead of keeping our savings constantly.

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Green Environment and its Role in Overall Growth of the Country

Dr. Jaishree Daverey*

Introduction

The strength of the Indian frugality depends in the inconceivable agriculture sector. It paves way for the betterment of People by perfecting land, water, climate change, etc. Civic pastoral areas are the agrarian grounded quarter which is positioned in various areas of India. This study helps us to understand the contribution of the agriculture sector in urban pastoral areas of India to the enhancement of the nation's frugality by conserving the green environment. Pollution is the major trouble for the human being as well as the environment. In this study, the experimenter discusses organic agriculture has been used as a tool for conserving the environment and the protection of ecological changes in the Urban pastoral areas of India. Now a day's conventional agriculture has been used as a general practice among growers of civic pastoral areas of India. This agriculture depends on the high operation of synthetic toxin, fungicides, dressings and genetically modified seeds that have raised applicable environmental enterprises which will affect the biodiversity. This study discusses the major contribution of organic agriculture for the enhancement of green environment in civic pastoral areas of India. This study examines the influence of named environmental and profitable factor on crop product and agrarian GDP through secondary data at civic pastoral areas of India. The experimenter can find out the use of organic agriculture to attain green growth and to cover the green environment. The experimenter named specific profitable and social factor which support organic agriculture through the green environment and green growth.

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Climate Change

According to United Nation's Framework Convention on Climate Change (UNFCCC) stated "a change of climate that's attributed directly or laterally to human exertion that alters the composition of the global atmosphere, and that's in addition to natural climate variability over similar time ages". According to UAE (United Arab Emirates) "The climate change miracle refers to seasonal changes over a long period with respect to the growing accumulation of green house feasts in the atmosphere. Diving this miracle is of utmost significance given the vital part that climate plays in the conformation of natural ecosystems and the human agriculture and societies on which they're grounded". The current situation has been exposed that human conditioning since the launch of the artificial revolution manifested in reactionary energy. It's used for power product, land deforestation for agriculture, and civic growth. Some corridor of the world have preliminarily endured the warming of littoral waters, high temperatures, a pronounced change in downfall patterns, and a lesser than before intensity and frequency of storms. Adding ocean situations and temperatures are anticipated to be an adding trend. In addition, the eventuality for severe also irretrievable climate and environmental changes, as well as the continued melting of polar ice layers, similar as those start in Greenland and West Antarctica, could beget ocean position rises exceeding 10 measures, negative oscillations in ocean currents, and enlarged methane emigrations. The chance that utmost global warming of the last 15 times is the outgrowth of human conduct is estimated to be further than 90. The breakdown to address climate change will inescapably undermine together the world's profitable and social stability.

Contribution of Agriculture to Green Growth

Green growth is the performance of profitable growth and enhancement while precluding environmental declination, biodiversity loss and weak natural resource use. The plan is to maximize the chances of exploiting cleaner sources of growth, thereby leading to a more environmentally sustainable development model. Agriculture faces huge challenges to apply a green growth strategy. Predictable growth in the demand for food and agriculture raw accoutrements due to the adding world population and inflows will place large demands upon scarce natural coffers, substantially land and water, used in the sector. Productivity growth in agriculture has played a main part in profitable growth in our countries. The rate of growth in total factor productivity in agriculture has exceeded that in numerous other sectors. In evaluation to various sectors, agriculture is unusual in that it can produce both negative and positive environmental externalities and can contribute to the provider of public goods. The predictable large development in the demand for its products could lead to an increase in the negative contribution of agriculture to global environmental quality, for illustration, loss of biodiversity through the clearing of Grassland and forest, unsustainable pressure on decreasingly

inadequate water inventories or increased water pollution by agrochemicals and beast waste. Data for the OECD countries propose some modest advancement have been made in reducing the environmental damage connected with agrarian conditioning since the early 1990s and there has been increased emphasis on strengthening the positive environmental part of the sector. Agriculture will be affected by global climate change. Although high temperatures and increased attention of carbon dioxide in the atmosphere could raise average yields for some crops, the liability that extreme climatic events will come more common raises the possibility of lesser variability in total food product and prices. Programs introduced to deal with the emigration of greenhouse feasts (GHG) could have together a circular and a direct effect on unborn agrarian growth. Agriculture has come precipitously obsessed on bought inputs, like toxin and agro-chemicals, whose costs might be suffering from frugality-wide dealings designed to reduce carbon emigrations. In addition, exact measures might be used to deal with GHG emigrations generated by crop and beast product. Policy measures that are designed to drop the impurity of water inventories or to achieve other ecological objects, similar as the safeguard of biodiversity, could also have an effect on agrarian conditioning and the cost of food. In discrepancy, there are openings for the sector to contribute to the mitigation of climate change through carbon insulation and the eventuality for reducing the overall environmental footmark of the sector through the growth and relinquishment of product styles that placeless environmental stress on land, water, and wildlife niche. A wide selection of programs, affecting agriculture and the food system, directly and laterally, has counter accusations for green growth. Programs that give to the intensification of product in the absence of any negative measures to defend environmental quality have a negative environmental impact. While numerous of the procedure needs for achieving green growth in agriculture are domestic in nature, there are essential transnational confines. Multilateral sweats to remove on-green programs could help to develop the environmental performance of the sectors. Maintaining open markets and broadening transnational cooperation will be vital in achieving green growth in the agrarian sector.

Green Growth and Economic Growth

Green growth is the pursuit of profitable growth and development. The purpose of green growth is to maximize the possibilities of exploiting cleaner coffers of increase, thereby main to a lesser environmentally sustainable growth model. Agriculture performs a main part in profitable growth and development and it's far significant contributor to profitable movement in different sectors of the profitable system. Agriculture is a significant stoner of natural coffers, substantially water and land. Its sports have important effect at the vacuity of these coffers and their excellence. Agriculture has a main influence on ecosystems and on non-agricultural shops and creatures, especially in expressions of biodiversity. Agrarian conditioning will have adverse environmental goods- induce dangerous environmental externalities

manifested in soil declination and corrosion, air and water pollution, and loss of biodiversity. Agriculture faces significant challenges in assessing a green growth policy. Prognosticated increase in the demand for food and agrarian raw accoutrements because of adding world population and inflows will place wide demands upon rare natural coffers, substantially land and water used within the area. It can beget an increase inside the adverse contribution of agriculture to transnational environmental value – loss of biodiversity over clearing of Grassland and forest, unsustainable burden on decreasingly scarce water coffers or elevated water pollution by using agrochemicals and beast waste. It'll be important in negotiating green growth in the agrarian area. Government assured agriculture stability through its policy and objects. It would help the growers to gain employment at pastoral background by adding their food product in an upholding manner. It would also help to meet the need of growing population through food security and would help to seek the raw accoutrements grounded on agro-based diligence. To ameliorate profitable status of agriculture community at civic pastoral areas, agrarian department has taken several ways by publicizing new schemes and propagating rearmost technologies in agrarian development. The conventional agriculture system used majorly by exercising synthetic diseases and fungicides would affect the lands fertility and lead to drastic climatic change. In order to fill the gap numerous interested levy growers put forth their trouble by enforcing organic agriculture in civic pastoral areas. Numerous NGO's also join hands with the agriculture people and they give finances to ameliorate organic agriculture in civic pastoral areas.

Universal Concern on Green Environment

Green environment is a global concern. Environmental pollution leads to dangerous goods on human lives and the ecosystem. In order to guard the green environment, the main impact on their duty of the people is clean exertion. Everybody should know about their environment. It has a great impact on their introductory requirements like food, sanctum and cloth. In order to balance the life of humans and girding, the ecosystem and green environment have a major part in the food chain, climate change and working conditioning. All human beings basically need have environmental mindfulness in their life. But for immediate demand and securities, people need to consolidate on the natural resource. It's tone distractive to their own life and predecessor. However, the state must treat heavy discipline, If manufactories don't observe the government rules and morals. The discipline should be severe on their operating license need to drop by the government. The seminaries and council pupil must be educated about environmental mindfulness and give protection of mindfulness about environmental in public places, townlets and social media to produce a green environment. Also take necessary action to help declination of green environment strengthening their examination platoon, regular monitoring of all public places like premises, roads, people living area, forest. The timely action is to be taken while any

illegal forms set up the destruction of the environment. The main focus for agriculture is to be of organic agriculture which automatically leads to a peaceful green environment. This thesis is to going to exfoliate light on the growth of agriculture by collecting the data of once twelve times and to read the trustability of unborn agriculture by using organic agriculture. This may lead to the successful growth of attaining green environment without failure and also sustainable profitable growth.

Conclusion

Protection of the green environment is the practice of shielding the natural environment by individualities, association and government through has sustainable renewable resource. Its objects are to cover and conserve natural coffers and the being natural environment and where possible to repair damage and rear chance. The biophysical environment is degraded due to the pressure of over-consumption, population growth and technology development. This study is about the product of the green environment through organic agriculture that helps to attain green growth. In ultramodern days conventional agriculture is extensively used for their high yielding capacity. Conventional agriculture helps in yielding, but the cost of product is high which reduce the periphery of profit. It also affects the environment in numerous ways like land pollution, water pollution, air pollution and climate change. Due to the operation of synthetic toxin, chemical fungicides and germicide, the land gets defiled as well as the product produced or contains dangerous chemical. To overcome this and for the protection of the green environment, organic agriculture is acclimated. Currently organic agriculture emphasizes soil fertility and conservation of the soil naturally without using a chemical to help the product and growth of crops. Organic tilling not only helps by furnishing better quality food but also save the green environment by not scattering dangerous fungicides into the air. Organic agriculture is essential for the protection of the green environment. It saves the green environment for being defiled and damaged. Through the study, the need for organic agriculture is concluded as the most important aspect of ecological balance by maintaining capacities compared to traditional agriculture ways. Organic tilling trends are cheaper and can be fluently grown in large scale and it would increase the possibility of fertility among commoners. The organic labors are healthier and retain more nutritive value As compared to conventional agriculture. Organic ways are more labor ferocious. Hence, it's favorable in countries like India for the development of pastoral area exports of organic labors fetches a high price in the transnational market because of their health benefits. Effectively it results in profitable foreign currency reserves. Chemical diseases and fungicides accumulation degrade soil fertility. The soil fertility and land to soil corrosion on the other side organic ways refrain from the use of synthetic diseases; hence they're eco-friendly. It's eventually concluded that through organic agriculture, the green environment is defended as well as green growth is attained in agriculture sector.

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INSPIRATM
Reg. No. SH-481 R- 9-V P-76/2014

Published by:
INSPIRA
25, Sudama Nagar, Opp. Glass Factory, Tonk Road, Jaipur - 302018 (Raj.)
Phone No.: 0141-2710264 Mobile No.: 9829321067
Email: profdrssmodi@gmail.com

Printed at:
Shilpi Computer and Printers
6/174, Malviya Nagar, Jaipur
Mobile No.: 92148 68868

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Website : inspirajournals.com

₹ 430/-

