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VOCATIONAL TRAINING TO PRISONERS IN TAMIL NADU

Dr.C.PARAMASIVAN, Ph.D.

Assistant Professor of Commerce Periyar E.V.R. College (Autonomous) Tiruchirappalli, Tamil Nadu.

Abstract

Prison is one of the complicated and pathetic places where the convict and under trial persons are lodged owing to their involvement in illegal or unlawful activities. It is the universal phenomenon which had an ancient history from the age old periods. The system and treatment of prison and prisoners have been changing because of growing evaluation of the human rights approach. In the early periods, prison was one of the places where the anti-social and anti-national persons were lodged, but now it has been changing, and even if the prisoners are convicts, they are treated as human beings and his/her rights are protected by law. Rehabilitation steps have been taken to create a new life after imprisonment is quite common in all around the world. This paper made an attempt to explore the performance of vocational training and prison industry in Tamil Nadu.

Keywords: Prison, prisoner, jail, convicts, under trial, detune, Borstal School,

Introduction

The words 'Prison' and 'Goal' are derived from the Latin words which mean to "Seize" and "cage" respectively. The oxford English Dictionary defines prison as, "A place properly arranged and equipped for the reception of persons who by legal process are committed to it for safe custody while awaiting trial or punishment". With this view, the present paper discusses the demographic profile of prisoners in Tamil Nadu. (Raju.L.P 2014) The prison system as it operates today in our country is a legacy of the British Rule. It was the creation of the colonial rulers over our penal system with the prime motive of making imprisonment "a terror to wrongdoers". In India, Jail is the popular term which describes the prisons,

which are categorized into the following types.

Prisons serve the public by keeping in safe custody those committed by the courts and treating them with humanity and helping them lead a useful life in society as law abiding citizens after their release from the prison. Prison in India is an age old concept. In the early periods; unused old forts were used as prison where the persons who acted against the government were lodged. Studying the demographic profile of prisoners is unique nature and it involves in social understanding of the prisoners in the jail. This paper made an attempt to explore the demographic status of prisoners in the country.

CONCEPT OF PRISONS

A prison also known as gaol or jail is a place in which people are physically confined and usually deprived of a range of personal freedoms.(wikiperdia.org)The Online Oxford English dictionary defines prison as, "A building to which people are legally committed as a punishment for a crime or while awaiting trial.4" In our country "Prison" falls under state subject in List II of the Seventh Schedule to the Constitution of India. The administration of Prisons falls in the hands of the state Governments, and is governed by the Prisons Act, 1894 and the Prison Manual of the respective State Governments. Thus, States have the primary responsibility and authority to change the current prison laws, rules and regulations.

Prisons are the public institutions and therefore they must perform the function assigned to them by law. The law declares simply and precisely that if individuals are convicted of crimes, they shall be placed on probation, fine, or undergo a sentence of imprisonment. Men are thus sent to a prison as punishment. Strictly speaking, the law sends them not to be reformed but primarily to be held in safe custody. Thus we can safely say that till the last century the idea has been to keep the prisoner in safe custody alone. The recent tendency now is, of course, that prison system is meant for reformation of the prisoners that they may return to society as useful members and this function of the prison is now termed as discipline. (B.S. Haikerwal)

PRISONS IN TAMIL NADU

The Presidency Jail for women in Vellore, was the first prison constructed in Tamil Nadu during the year 1830 followed by Madras "Penitentiary" during the year 1837 and thereafter all other prisons were constructed one by one up to the year 1872. After Independence Central Prison, Puzhal was the only prison constructed during the year 1981 and some additional accommodation was made in other Prisons. All the Prison buildings are more than 150 years old

Table No 1

Prisons in India and Tamil Nadu

Catagory of	Nu	nber	Percentage
Prisons	India	Tamil Nadu	to India
Central Prisons	131	9	6.87
Special Prison for Women	19	3	15.78
Borstal School	20	12	60.00
Special Sub Jails (Men : 2 Women : 3)	37	5	13.51
District Jails	364	9	2.47
Sub Jails (Men : 87 Women :8)	758	95	12.53
Open Air Prison	54	3	5.56
Others	04	-	-
Total	1387	136	9.80

Source: Tamil Nadu Prison Department

Table No. 1 indicates that there are 9 central prisons, 3 special prisons for women, 12 borstal schools, 5 special sub jails, 9 district jails, 95 sub jails and 3 open air prisons in Tamil Nadu.

VOCATIONAL TRAINING IN PRISON

MihikaBasu (2013) nearly two years after a report by Tata Institute of Social Sciences (TISS) recommended effective vocational training programmes to improve employability of prisoners post release, the higher and technical education department has decided to extend its facilities to prisons in the state. A major finding of his study was that while 48 per cent of inmates had no job skills, almost 74 per cent of them expressed the need for jobs after release.

Mission News wire (2012) "Building the skills of India's prison population is a key focus for reducing poverty and the potential for recidivism," says Fr. Mark Hyde, Executive Director of Salesian Missions, the U.S. development arm of the Silesians of Don Bosco. "Providing educational opportunities while in prison helps youth learn the skills necessary to have a productive life once they are released".

RAND Corporation report (2013) Prison inmates who receive general education and vocational training are significantly less likely to return to prison after release and are more likely to find employment than peers who do not receive such opportunities, according to a new RAND Corporation report.

Researchers found that inmates who participate in correctional education programs have 43 percent lower odds of returning to prison than those who do not. The estimate is based on studies that carefully account for motivation and other differences between correctional education recipients and non-recipients. The findings also suggest that prison education programs are cost effective.

Paramasivan.C (2016) Vocational training is one indispensable training to enlarge the self-employment activities of the unemployed or the underemployed, which make them as a viable manpower in the country. In the topical periods, skills and vocational training become budding aspects promote employment to opportunity to all. As such, providing vocational training to the prison inmates is one of the innovative schemes which make the prisoners as a valuable resource and also it helps to generate income for them to meet their dependents. Vocational training to the prisoners will make them as self-employee entrepreneurs after their imprisonment is over. Therefore vocational training to prison should be strengthened and various types of vocational training should be offered.

The Hindu (2015) in the article of Prisons in Tamil Nadu top in productivity, Productivity in Tamil Nadu prisons has topped the country with a total earning of Rs. 36.97 crore last year. With an inmate population of 15,784, the State has also topped in prisoner rehabilitation, thanks to a variety of educational/vocational courses. In 2012, the State was placed fifth in gross earnings from products of inmates with revenue of Rs 11.56 crore.

Sold under the 'Freedom Bazaar' brand, Tamil Nadu prison products made many heads turn when they were displayed at the recently held Global Investors Meet in Chennai where multinational corporate companies showcased their might.

Going by data released by the National Crime Records Bureau, the Tamil Nadu government had spent Rs. 38.84 crore on prisoners lodged in 136 jails, including nine central prisons, across the State in 2014. This expense included food, clothing, education, vocational courses and welfare activities.

Kerala stood second in prison productivity with an inmate population of 7,078 and goods valued at Rs. 21.43 crore.

On the rehabilitation front, Tamil Nadu again topped with 961 prisoners being rehabilitated. "Sustained efforts are on to make sure that every inmate leaves the prison with employable skills which will help in merging with the mainstream workforce of the society. Last year 2,185 inmates went through Elementary Education, 1,201 Adult Education and 699 Higher Education programmes. About 300 underwent computer courses," the official said.

As many as 4,951 prisoners who could not afford or engage legal counsel were provided free legal aid in association with the Tamil Nadu State Legal Services Authority.

The object of vocational training to prisoners is reformation the and rehabilitation and with this objective in mind training in various simple trades like plumbing. simple electrical wiring. painting including sign board writing, brick making is offered and prisoners are awarded with certificates by State Council Vocational Training to enable them to seek employment after their release.

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Table No. 2

Details of Vocational Training

1	Bread Making
2	Diploma and PG Diploma Spiritual
3	L E D Bulb Making
4	Candle Making
-	Four Wheeler and Two Wheeler
5	Mechanism
6	Computer Hardware Course
7	Sanitary Napkin Manufacture
8	Music Class
9	Information & Communication Vocational Technology
10	Handmade paper & Products
11	Diploma in Housing Electrician
12	Herbal Training
13	Diploma in Garment Fashion Designing
14	Basic Tailoring
15	Assistant Cook
16	Basic Wood Work
17	Screen Painting
18	Music Class
19	Kunthakal Art
20	Phenyl Making
21	Cleaning Powder
22	Drawing Class
23	Candle Making
24	Tailoring course (Women)
25	Candle Products (Women)
26	Electrical&Wiring (Men)
27	Diploma in Four Wheeler Mechanism
28	Diploma in Catering Assistant
29	Block Printing
30	Sanitary Napkin
31	Computer Training
32	Beautician Course

33	Hand Embroidery
34	Tailoring And Embroidery
35	Mat Work and Woollen Work
36	Muffler Making
37	Computer Training
38	Baby Napkin and Baby Frock
39	Tailoring course
40	Beautician Course
41	Gem Cutting
C	

Source: Tamil Nadu Prison Department

PRISONER'S EDUCATION

Q Hayat (1983) numerous reports dating back to the end of the 19th century have pointed to the need for educational programs in prisons. However, the basic penal philosophy is one of deterrence and retribution. Prisoner education remains largely neglected. The prison education program includes both general education and vocational education. Further needs are proper supplying and staffing of libraries, improved vocational education, provision of television and radio facilities to inmates, and adequate funding.

The Hindu (2012) Community college education fosters hope among prisoners, ten convicts undergoing life sentence at the Special Prison for Women, Tiruchi, have recently completed a beautician course conducted by the Mahatma Gandhi Community College.

The year-long course was initiated by the community college in January 2011 and was taught by Latha Thiruvengadam, a beautician appointed by the Tamil Nadu Open University. The final exams, which were conducted over four weekends in February, tested candidates for theoretical as well as practical knowledge.

The beautician course covered a variety of treatments like threading, waxing, facials, and scalp massages, acupressure head massages to relieve headaches, hair colouring, manicure, pedicure, hair dressing, and preparation of

Research Explorer

herbal hair oils and complete bridal makeup. "During their practical exams, the candidates were allowed to use other inmates as their models, so that even they had a chance to experience such things." After their release, the students will have to work at some parlour to gain practical experience before starting off on their own, she added. "Once they begin their own parlours, these women can make up to Rs.15,000 in the initial stages."The course is one among the various vocational courses being taught by the Mahatma Community College.10 Gandhi life sentence convicts at Special Prison for Women complete beautician course. Conducted in collaboration with local community colleges and the Indian Centre for Research and Development of Community Education (ICRDCE), the courses and training programmes are available across nine central prisons in the state.

Speaking about the courses offered to prison inmates, Father Xavier Alphonse S.J., Director, ICRDCE said, "In January 2010, we registered around 261 inmates from Central Prisons in Puzhal, Vellore, Cuddalore. Palayamkottai, Salem. Madurai, Coimbatore and Tiruchi. The first batch under this set up is being trained to become DTP operators, beauticians, and computer operators, catering assistants, four wheeler mechanics, electricians and plumbers."

Besides these vocational training courses, the community college also trains inmates who have studied up to class VIII to take the SSLC and Plus Two examinations. The training programmes impart training in life-coping skills and work skills. besides including an internship, preparation of resumes. applying for jobs and grooming for interviews.

Table No. 3 **Prisoner's Education and Vocational** training through N.G.Os' Participation

No. of prisoners studying as on 31.08.2008		
in the Prison School	127	
in Adult Education Programme	728	
Under graduate course	156	
Post graduate course	22	
M.Phil., /MCA course	7	
Computer course	72	
in Vocational training	2217	
No. of Prisoners trained (2006 - 2	2007)	
Cup and Plate	60	
Tailoring	105	
Readymade Garments	20	
Bakery	12	
Computer training (31.03.2008)	2280	
CT. INID . D.		

Source: Tamil Nadu Prison Department

Table No. 3 explains the prisoner's education and vocation training through N.G.O's participation. There are 2217 prisoners who studied vocational training course as on 31.08.2008. During the year 2006-2007, 60 prisoners were trained in cup and plate making, 105 in tailoring, 20 in readymade garments, 12 in bakery industry and 2280 were trained in computer training.

Table No. 4

The Non-Governmental Organizations are running industries in prisons

No. of Prisoners trained (2012-13)		
No.	Trade	No. of prisoner Studying
1	Basic Sewing Operator	20
2	Bed Side Assistant	57
3	Basic House Wiring	20
4	Security General Guard	40
5	Assistant Manson	38
6	Weaver Looms	50
7	Hand tufted carpet Manufacturing (Handloom)	10

8	Computer	117	
0	Fundamental	20	
9	Handmade Paper	28	
10	Tailor	60	
11	Painter Assistant	39	
12	Basic of Beauty and Hair Dressing	46	
13	Assistant Cook	74	
14	Assistant Plumber	20	
15	Basic Wood Work	16	
16	Basic Electrical Training	20	
17	Hospitality Assistant	20	
18	Basic Cultivation of Cereal Crops	20	
19	Garment Packer	20	
20	Spoken English and Communication Skill	40	
21	Attendant - Ethnic Indian Sweets, Snacks & Food	20	
22	House hold help Kitchen	20	
23	Bulp Beater	40	
24	Agitator -Pulp QC	40	
25	Packer	40	
26	Manufacturing of Envelopes	40	
27	Paper Cutter	40	
28	Dosa Maker	20	
29	Idly Sambar Maker	19	
30	Helper	18	
	Total	1052	

Source: Tamil Nadu Prison Department

CONCLUSION

Vocational training is provided to enhance the skills in a particular field which helps one become an independent worker or gain self-employment to income by the generate person. Vocational training may be of different categories for different aspects depending on the nature of work and capacity of the trainee. In Tamil Nadu, almost all the central jails are giving vocational training to their inmates particularly to the men convicts Weaving, Tailoring, handle making, bricks making, carpentering,

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sanitary napkin making, computer training are the major vocational training in the central Jails in Tamil Nadu. Providing vocational training to the prison inmates helps to divert their concentration into the productivity generation and income aspects which help their family members also. This kind of vocational training should be given to all the prison inmates their basic knowledge and skill should be identified based on which vocational training should be given with the help of NGO's Academic institutions, training centre and voluntary trainer. Providing vocational training is not only giving training but also it is one of the best ways of rehabitation measures to the prisoners.

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THE STUDY OF VOCABULARY DEVELOPMENT BY USING APPLIED LINGUISTIC THEORY AMONG SECONDARY SCHOOL STUDENTS

Prashant Thote & Gowri S Gyanodaya Vidya Mandir

Abstract

Applied Linguistic Theory is the foundation of significant achievement of language teaching-learning. Vocabulary teaching is the key element in teaching English at senior secondary school and it is a long process. The purpose of the present study is to assess the impact of applied linguistic theory on language learning among secondary school students. Experimental study design is employed for the study. Total 80 students participated in the present study, 40 students were in experimental group and other 40 in control group. Data are collected through pre-test and post-test. Students in the experimental group were taught vocabulary learning, students' memory rule, student's motivation through applied linguistics and control group adopts traditional vocabulary teaching method. Result of the study reveals that applied linguistic theory is not only effective but also efficient in fostering student's interest in language learning and improves effectiveness of language learning. Result concludes that applied linguistics theory should be the foundation for language teaching and much better transfer of knowledge.

Keywords: Experimental, Teaching Method, Traditional method, Vocabulary

Introduction

Applied Linguistics is a discipline understanding studies intellectual communication and language teaching, majority focusing on internal research of linguistics. Applied linguistics is having application in philosophy, psychology, and education. sociology Applied linguistics is a discipline to provide solution to linguistic problems. Applied linguistic should assist in re-construction of language teaching systems to connect. The application of applied linguistic in

teaching of language has been widespread to improve efficiently and effectively.

In language teaching vocabulary teaching is significantly important. In recent years not much attention is given to vocabulary teaching. Teacher used the mechanical approach in teaching Traditional vocabulary. method of vocabulary teaching is teaches read vocabulary list, students read vocabulary by themselves, teacher explain usage- use of new words to create new sentencesstudents recite words mechanically after class room teaching. Vocabulary teaching

methodology was not interesting and effective in student's point of view. The active participation of students in vocabulary learning was neglected. The based on above situation, the teaching English is primarily studied under applied linguistic theory.

Present Condition of Vocabulary Teaching in Senior Secondary School:

Teaching vocabulary is always very important part of teaching. The new curriculum in English text is becoming more difficult and number of words in teaching which put challenges in teaching methodology. As an educator, educational teacher is necessary to study present status of English teaching at senior secondary school and to incorporate the gap between requirement in new curriculum and existing practice. The strategy of new vocabulary teaching pedagogy application of applied linguistic, through specific application, consolidation of vocabulary, understanding, students understanding improves and springy application in varied situation.

Research question:

The following research question was designed to guide the study.

- 1. Can application linguistic theory has positive impact on students learning vocabulary statistics?
- 2. Can application of linguistic theory, improve the students' performance in vocabulary?

Total 80 students of grade 11 of private English medium school in Industrial Township at rural area participated in the study. The study was conducted in the academic year 2019-20. The students are taught by same teacher and their class time table is same. All students have same language proficiency and same curriculum of content. The students are divided into two sections, one group the experimental group, who are exposed to vocabulary teaching pedagogy memory rule, that meets students motivates students in vocabulary learning

and improve vocabulary application ability to teach English and students in the control group are exposed to traditional methods of teaching.

Table 1

Teaching Method

Steps Control Group		Experimental	
Jucha	Control Oroup	Group	
	Teachers read the	Introduction to	
	world loudly and	context based	
	students will	approach is used.	
	repeat after.	Introduced to at least	
	Focus is on	six different	
	pronunciation.	background clues, it	
	spelling and	includes antonym.	
	meaning Most of	synonyms and	
	the students	examples (Six)	
	cannot concentrate	Teacher raised	
One	on learning the	important questions	
	word	to accist students in	
	word.	informing magning of	
		neuring meaning of	
		new words. In this	
		process students do	
		not learn new words	
		but learn to	
		recognize new	
		words. This phase	
		took two weeks.	
	Students will read	Teachers used	
	new words by	vocabulary statistics	
	themselves	to express words	
	reading, teachers	1. Use picture,	
	will walk in class-	object, simple	
	room to monitor	story as clue to	
	students reading	help students to	
	words, covered	guess unfamiliar	
-	pronunciation.	words.	
1 WO	Students just read	2. Use of context by	
	the word but not	teachers as clue	
	understanding	3. The cultural and	
	meaning of word.	social	
	-	background used	
		by teachers as	
		clue.	
		4. Use of linguistic	
		context as clue.	
	Teachers explain	Reading is a key	
	application of new	element to improve	
	words. After	vocabulary.	
	reading the words.	Students were asked	
	teachers wrote on	to read article and	
Three	the black board	get unknown words	
	and explain	and select one by	
	meaning, spelling	one. Some clues are	
	of new words and	provided by teacher	
	use Teachers also	to guess meaning of	
	explain the use of	the word Teacher	
	capitani me use or	the word. Teacher	

	new word and	explains and
	grammar, students	elaborates the words
	takes notes.	in detail. After
		completion of
		accessing the word
		correctly students
		should combine
		these words together
		to listen, speak, read
		and write.
	Teacher gives	
	examples of word	
Four	and able to make	
rour	sentences.	
	Teacher corrects	
	the mistakes.	
		Students were
		Students were grouped. It took
		Students were grouped. It took four weeks to
		Studentsweregrouped.Itfourweekstocompletethistask.
	Teacher gives 2	Studentsweregrouped.Ittookfourweekstocompletethistask.Eachgroupwere
	Teacher gives 2 minutes to	Studentsweregrouped.Itfourweekstotocompletethistask.Eachgroupgivensome
	Teacher gives 2 minutes to understand new	Studentsweregrouped.Itfourweekstotocompletethistask.Eachgroupgivensomephotographtoguess
Five	Teacher gives 2 minutes to understand new words. Teacher	Students were grouped. It took four weeks to complete this task. Each group were given some photograph to guess the meaning of new
Five	Teacher gives 2 minutes to understand new words. Teacher asks questions and	Students were grouped. It took four weeks to complete this task. Each group were given some photograph to guess the meaning of new words. Teachers
Five	Teacher gives 2 minutes to understand new words. Teacher asks questions and answer that	Students were grouped. It took four weeks to complete this task. Each group were given some photograph to guess the meaning of new words. Teachers move around the
Five	Teacher gives 2 minutes to understand new words. Teacher asks questions and answer that students do not	Students were grouped. It took four weeks to complete this task. Each group were given some photograph to guess the meaning of new words. Teachers move around the class-room to ensure
Five	Teacher gives 2 minutes to understand new words. Teacher asks questions and answer that students do not know.	Students were grouped. It took four weeks to complete this task. Each group were given some photograph to guess the meaning of new words. Teachers move around the class-room to ensure smooth discussion.
Five	Teacher gives 2 minutes to understand new words. Teacher asks questions and answer that students do not know.	Studentsweregrouped.Ittookfourweekstocompletethistask.Eachgroupweregivensomephotographtoguessthemeaningofnovearoundtheclass-roomtoensuresmoothdiscussion.Studentsinfer
Five	Teacher gives 2 minutes to understand new words. Teacher asks questions and answer that students do not know.	Students were grouped. It took four weeks to complete this task. Each group were given some photograph to guess the meaning of new words. Teachers move around the class-room to ensure smooth discussion. Students infer meaning of new
Five	Teacher gives 2 minutes to understand new words. Teacher asks questions and answer that students do not know.	Students were grouped. It took four weeks to complete this task. Each group were given some photograph to guess the meaning of new words. Teachers move around the class-room to ensure smooth discussion. Students infer meaning of new words by

Table 2

Information of students

Group	Number	English Proficiency
Experimental	40	Grade II
Group		
Control Group	40	Grade II

Experimental Content

The material used included English text books of class XI and two test papers. Two test before and after experiment conducted to understand students' mastery over vocabulary. Both qualitative and quantitative analysis is applied. Result conducted for 82 weeks and in three stages. The questionnaire survey is the first stage, bottom up test result shows that both group students have same language proficiency.

In that stage all students (both EG and CG) participated in questionnaire

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survey (Pre-test). It is to get suggestion form students on vocabulary teaching.

Table3

Average score before Experiment

Group	Ν	Average
Experimental Group	40	67.56
Control Group	40	68.07

Table 4

Passing Rate

Group	Ν	%
Experimental Group	40	54.50
Control Group	40	56.60

Results in table 3 and 4 reveal that student's performance in English before experiment is equal, there is no obvious difference.

In control group students are exposed to traditional method, teacher plays a active role but students are passive learners.

Table 5

Average score after experiment

Group	Ν	Average
Experimental Group	40	76.37
Control Group	40	68.98

Table 6

Passing Rate

Group	Ν	%
Experimental Group	40	72.50
Control Group	40	54.50

Result in table 5 and 6 reveals that the average score of both EG and CG are significantly different after experiment. The average score of EG is higher than CG (76.37> 68.98). By comparing the passing

9

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rate, EG is slightly lower than CG but after experiment passing rate of two groups are quite different.

Result and Discussion:

Teaching vocabulary is integral part of English teaching. As an English teacher, we need to provide continuous motivation to students to learn and memorize English vocabulary, so learners may learn by themselves and improve effectiveness of English vocabulary. The effective and efficient methodology of teaching vocabulary has noteworthy improvement in student's interest and performance in English. It will help students to have conceptual understanding and memorize English vocabulary by choosing and properly using the vocabulary teaching statistics.

Conclusion:

- 1. The applied linguistics approach in teaching vocabulary is effective.
- 2. Teacher should frame comprehensive teaching system to attain objective of teaching and achieving minimum outcome of learning with learning indicator.
- 3. Teacher needs to use applied linguistics in classroom process to cultivate the social talent. Thus it should be the best transformation of knowledge.

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PRODUCERS PARTICIPATORY APPROACH TOWARDS ORGANIC IN MYSORE DISTRICT

Dr. H. M. Chandrashekar

Associate Professor of Agribusiness Management and Project Director, ICSSR - MRP, Institute of Development Studies, University of Mysore, Manasagangotri, Mysuru

Abstract

The current agricultural crisis and the farmers situation in the era of globalization, increasing capitalization of agriculture, chemical intensive and bio-technology oriented farming and implications of soil and water degradation or depletion for farmers livelihoods. Food is our most basic need, the very stuff of life. 75 percent of the Indian population derives its livelihood from agriculture, and every fourth farmer in the world is an Indian, the impact of globalization on Indian agriculture is of global significance. Small and marginal farmers are pushed to extinction, as monoculture replace biodiversity crops, as farming is transformed from the production of nourishing and diverse foods into the creation of markets for seed company products, as farmers are transformed from producers in to consumers of corporate-patented agriculture products. Agriculture is the most important livelihood strategy in India, with two thirds of the country's workforce depending on farming. Most farmers are small and marginal farmers cultivating areas of less than two hectares. Increasing land fragmentation, diminishing natural assets, high costs for external farm inputs, indebtedness, and pesticide-related health issues have threatened the livelihoods of many farming families. So, organic farming is best and ultimate livelihood option for any kind of social horizon. If you are in any profession take big 'U' turns and lives and enjoy remaining life without any presser. Organic farming makes following assets Enhanced Natural assets – here all kind of natural assets will increased and without any environmental cause. Enhanced Social assets – organic farmers will get in same thread and they will discuss about new methods and connected to each other always .Enhanced **Human** assets – by eating organic food and working in organic farm will improve the health. Enhanced Financial assets – here reduced the input cost and increased outputs. Famers will not apply for any loans because no need buy inputs. Enhanced **Cultural** assets – celebrate local festivals with related to agriculture and connected to our cultural roots. An attempt is made in this paper to analyse the socio and economic status of organic products producers in Mysore District.

Keywords: Organic farming, Cultivation, Environmental and Marketing Arrangement

Research Explorer

Introduction

The main idea behind organic farming is 'zero impact' on the environment. The organic farming is to protect the earth's resources and produce safe and healthy crop. Organic farming is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local condition, rather than the use of inputs with adverse effects.

Organic farming combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved. Organic farming is being practiced in 130 countries of the world. The ill effects of chemicals used in agriculture have changed the mindset of some consumers of different countries who are now buying organic with high premium for health. Policy makers are also promoting organic farming for restoration of soil health and generation of rural economy apart from making efforts for creating better environment. The global organic area is 26 million hectare roughly along with 61 standards and 364 certification bodies roughly. The world organic market is now \$26 billion. The organic area in India is 2.5 million hectare including certified forest area.

A) CONCEPT OF ORGANIC FARMING

Organic farming is not new to Indian agriculture community. Several forms of organic farming are being successfully practiced in diverse climate, particularly in rain fed, tribal, mountains and hill areas of the country. Among all agriculture systems, organic farming is gaining wide attention among farmers, entrepreneurs, policy makers and agricultural scientists for varied reasons such as it minimizes the dependence on chemical inputs (fertilizers, pesticides, herbicides and other agro-chemicals) thus safe guards and improves the quality of resources, and it is labour intensive and provides an opportunity to increase rural

employment and achieve long term improvements in the quality of resource base.

B) ORGANIC FARMING AT GLOBAL LEVEL

According to the 2009 survey almost 31 million hectares are currently managed organically by more than 600000 farms worldwide. This constitutes 0.7 percent of the agriculture land of the countries covered by the survey. The continent with most organic land is Oceania with almost 11.9 million hectares, followed by

Europe with almost 7 million hectares, America 5.8 million hectares, Asia almost 2.9 million hectares, North America 2.2 million hectares and Africa 0.9 million hectare.

C) FAVORABLE EFFECTS OF ORGANIC FARMING ON ENVIRONMENT

Organic farming is much better for environment than conventional the farming. One of the greatest environmental problems today is energy consumption and organic farming. As a matter of fact, energy efficiency is around seven percent greater for the organic system. Other positive farming environmental aspects of organic farming include the use of much less fertilizer, and the complete avoidance of synthetic fertilizers, which are harmful to soil, water, animal and people. Also, the nitrate content of organic fields is significantly lower than on conventional farms due to the absence of soluble fertilizers. Organic farming focuses on preserving the habitats of all species and their surrounding environments, including the air and water. Organic farming releases much less carbon dioxide than does conventional farming. Carbon dioxide is the leading greenhouse gas that causes global warming.

ORGANIC FARMING IN INDIA

In Indian agriculture, organic manures have been used since Sir Albert Howard. A British agronomist way back in 1900 started the organic farming. The commercial organic farming, as practiced

today, is still at a nascent stage. According to a survey of International Federation of Organic Agriculture movement and Stiftung Oekelogie and Landbou (SOEL) February 2005 India has about 76,326 hectare land under organic management. Which is only 0.05 per cent of total agricultural land According to this survey; there are about 5,147 certified organic farms in India. The Indian organic farming industry is estimated at us20 million and almost entirely export oriented. Acceding to Agricultural and Products Processed food Export Development Authority (APEDA 2005), agency involved in promoting Indian organic products with a worth of rupees 72 million are being exported from India.

Organic farming is a holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological, cycles and soil biological activity. It emphasizes the use of management practices in preference to the use of offfarm inputs. This is accomplished by using, where possible, agronomic, and biological and mechanical methods, as opposed to using synthetic materials to fulfill any specific function in the system. The approach and outlook towards agriculture and marketing of food has seen a quantum change worldwide over the last few decades. Whereas earlier the seasons and the climate of an area determined what would be grown and when, today it is the "market" that determines what it wants and what should be grown. The focus is now more on quantity and "outer" quality (appearance) rather than intrinsic or nutritional quality, also called "vitality". Pesticide and other chemical residues in food and an overall reduced quality of food have led to a marked increase in various diseases, mainly various forms of cancer and reduced bodily immunity. This immense commercialization of agriculture has also had a very negative effect on the environment. The use of pesticides has

led to enormous levels of chemical build up in our environment, in soil, water, air, in animals and even in our own bodies. Fertilizers have a short-term effect on productivity but a longer-term negative effect on the environment where they remain for years after leaching and running off, contaminating ground water and water bodies. The use of hybrid seeds and the practice of monoculture have led to a severe threat to local and indigenous varieties, whose germplasm can be lost forever. All of this is for "productivity". In the name of growing more to feed the earth, we have taken the wrong road of un sustainability. The effects already show farmers committing suicide in growing numbers with every passing year; the horrendous effects of pesticide sprays by a government-owned plantation in Kerala some ago; the pesticide years contaminated bottled water and aerated beverages are only some instances. The bigger picture that rarely makes news however is that millions of people are still underfed and where they do get enough to eat, the food they eat has the capability to eventually kill them. Yet, the picture painted for the future by agro-chemical and seed companies and governments is rosy and bright .Another negative effect of this trend has been on the fortunes of the farming communities worldwide.

This is where organic farming comes in. Organic farming has the capability to take care of each of these problems. Besides the obvious immediate and positive effects organic or natural farming has on the environment and quality of food, it also greatly helps a farmer to become self-sufficient in his requirements for agro-inputs, and reduce his costs. Chemical agriculture and the agriculture and food distribution systems have developed, propagated, sustained and now share a symbiotic relationship which affects each of us in many ways.

NEED OF ORGANIC FARMING

With the increase in population our compulsion would be not only to

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stabilize agricultural production but to increase it further in sustainable manner. The scientists have realized that the 'Green Revolution' with high input use has reached a plateau and is now sustained with diminishing return of falling dividends. Thus, a natural balance needs to be maintained at all cost for existence of life and property. The obvious choice for that would be more relevant in the present era, when these agrochemicals which are produced from fossil fuel and are not renewable and are diminishing in availability. It may also cost heavily on our foreign exchange in future.

The key characteristics of organic farming include

- Protecting the long term fertility of soils by maintaining organic matter levels, encouraging soil biological activity, and careful mechanical intervention
- Providing crop nutrients indirectly using relatively insoluble nutrient sources which are made available to the plant by the action of soil micro-organisms
- Nitrogen self-sufficiency through the use of legumes and biological nitrogen fixation, as well as effective recycling of organic materials including crop residues and livestock manures
- Weed, disease and pest control relying primarily on crop rotations, natural predators. diversity, organic manuring, resistant varieties and limited (preferably minimal) thermal. biological and chemical intervention
- The extensive management of livestock, paying full regard to their evolutionary adaptations, behavioral needs and animal welfare issues with respect to nutrition, housing, health, breeding and rearing

• Careful attention to the impact of the farming system on the wider environment and the conservation of wildlife and natural habitats

Organic farming was practiced in India since thousands of years. The great Indian civilization thrived on organic farming and was one of the most prosperous countries in the world, till the British ruled it.

In traditional India, the entire agriculture was practiced using organic techniques, where the fertilizers, pesticides, etc., were obtained from plant and animal products. Organic farming was the backbone of the Indian economy and cow was worshipped (and is still done so) as a god. The cow, not only provided milk, but also provided bullocks for farming and dung which was used as fertilizers.

Given below are some of the advantages of organic farming for Small farmers:

- High premium: Organic food is normally priced 20 - 30% higher than conventional food. This premium is very important for a small farmer whose income is just sufficient to feed his/her family with one meal.
- > Low investment: Organic farming normally does not involve capital investment as high as that required in chemical farming. Further, since organic fertilizers and pesticides can be produced locally, the yearly costs incurred by the farmer are also low. Agriculture greatly depends on external factors such as climate. pests, disease. Furthermore, most of the small farmers are dependent natural rain for water. on Therefore in cases of natural calamity, pest or disease attack, and irregular rainfall, when there is a crop failure, small farmers

practicing organic farming have to suffer less as their investments are low. (It should be noted that while shifting from chemical farming to organic farming, the transition might be costly)

Less dependence on money lenders:

Many small farmers worldwide commit suicide since chemical inputs, which are very costly, are not required in organic farming, small farmers are not dependent on money lenders. Crop failure, therefore, does not leave an organic farmer into enormous debt, and does not force him to take an extreme step.

- Synergy with life forms: Organic farming involves synergy with various plant and animal life forms. Small farmers are able to understand this synergy easily and hence find it easy to implement them.
- Traditional knowledge: Small farmers have abundance of traditional knowledge with them and within their community. Most of this traditional knowledge cannot be used for chemical farming. However, when it comes to organic farming, the farmers can make use of the traditional knowledge. Further, in case of organic farming, small farmers are not dependent on those who provide chemical know-how.

Constraints in Organic Farming in India:

There are many constraints to the spread of organic agriculture in India. Here are the main ones.

1. Bias towards chemical farming:

Existing policies, research and extension activities all support highexternal-input farming. Little attention is given to organic agriculture, and no resource materials are available.

2. Misappropriation of local varieties:

There is a danger that local seed varieties will be patented by multinational companies. The Indian government should recognize the rich heritage which is the property if India and its local people. This property should be protected by law.

3. Hazardous chemicals:

The government should ensure that hazardous substances which are banned internationally do not reach Indian farmers. Such chemicals are dangerous to people and the environment. Laws already regulate them, but they are not properly enforced.

4. Certification of organic farming:

Policy support for organic agriculture is arriving, but it caters to big organic enterprises. The procedures and requirements are not suited to small-scale farmers.

5. Bias in incentives:

The government provides many different incentives for high input agriculture. Equal attention should be given to sustainable agricultural practices.

6. Lack of research and extension support: to organic farming and on various aspects like traditional varieties.

7. Poor marketing:

There is a lack of organized, appropriate marketing structures for small-scale organic farming.

8. Misinformation and market power:

The pesticide industry provides misleading or false information to farmers. Its well-established marketing structures feed India's farmers with persuasive messages promoting highinput farming.

9. Lack of awareness:

Farmers and consumers are still not awakened to the dangers of chemical farming and the continuing depletion of natural resources.

Changes needed to achieve the potentials of organic agriculture

Many changes are needed if India is to overcome these constraints and achieve its rich potential in organic agriculture.

Research and extension: Research is needed to improve the yield of local crop varieties. Research and extension systems should place more emphasis on developing indigenous crops and livestock.

Supporting small-scale organic farming: Specific attention should be given to improving local agricultural production by marginal farmers and smallholders who are still "organic by default" and frequently depend on public welfare programmes.

Protect livelihoods of rural poor: The deregulation of national food markets has been agreed on an international level. Within this framework, agricultural policy should develop new strategies to prevent small-scale farmers from being pushed out of the market and off their land into poverty.

Local control of land: Large areas of wasteland and forest land located close to villages should be supervised by village committees. This would increase their ability to rehabilitate and use these lands in a sustainable way.

Local enterprises: Village-level, farmbased enterprises need to be promoted, strengthened and linked to potential markets. This requires support structures that are rarely in place. The government should provide guidelines and support to improve transport facilities, access to information, training, local marketing systems, etc.

Education: Organic agriculture should become part of the agricultural curriculum. Professional degrees in organic agriculture should be offered at universities to meet the demand for qualified specialists.

Cropping Pattern in Mysore District

Cropping pattern means the proportion of area under various crops at a given period of the time. Cropping pattern differs from macro to micro regions both in area and time and it is largely governed by the physical, culture and technological factors.

Mysore district is a dry area in general as it lies in the rain - shadow region of the Western Ghats. Wet crops like sugarcane and rice occupy lesser area when the compared to dry like ragi, groundnut, jowar and mulberry. But in the recent years ht area under wet crops in slightly increasing because of increase in irrigation facilities. The areas under different crops is given in table 3.4 It can be seen from the Table 3.6 that the district has 20.4 per cent of the area under Paddy. Ragi is another important Cereal product in the district. Area under cereals constitutes 40.8 per cent of the total area under all crops. Pulses are also important crop in the district with 20.6 per cent of the cropped area under pulses. Non-food crops have major share in H.D Kote, Hunsur and Periyapatna. T. Narasipura. K. R Nagar and Nanjangud are mainly paddy growing areas. Pulsed, Ragi and other non-food crops are mainly grown in Mysore.

Objectives

- 1. To study the present scenario of organic farming in the study area.
- 2. To assess and evaluate the factors which facilitates the adoption of organic farming
- 3. To analyses the constraints of organic farming in the study area.
- 4. To study the Organic farming is ultimate livelihood for Vulnerable poor
- 5. To provide the remedial measures to both the farmer and consumers in the study area

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Methodology

The present research is conducted in Mysore District. The district has been purposefully selected due to the availability of data base relating to organic farmers. Department of Agriculture has documented details relating to the growers who are practicing organic farming in the district namely selected H.D.Kote. Department of Agriculture and MYRADA has initial several programmes to provide training in organic farming. H. D. Kote have been selected for the present study, as the concentration of organic growers is more in this Taluk.

Sample Size

The 50 organic producers were selected for the study and by administering the questionnaire the primary data has been collected through personal observation and Interview in the study area.

Table 1

Educational Status of Farmers in study area

Particulars	No. of Respondent	Percentage
Illiterates	25	50.0
Primary	11	22.0
Higher Secondary	11	22.0
Graduates	3	6.0
Total	50	100.0

Source: Primary survey, 2019

The above table 1 reveals that the educational status of the sample farmers in the study area. Out of 50 farmers, 25 (50.0) percent are illiterate, and remaining 50 percent are literate out of that (11) 22.0 percent farmers are studied up to 7th standard, (11) 22.0 are obtained Higher

Secondary education level and only (3) 6.0 percentage of farmers obtained Graduate level of Education. It indicate present situation only those who are illiterate and Primary and Secondary level farmers are involving in organic farming and suggested thing is to if more educational people are involve in Organic Farming it useful to understanding the things of Cropping Pattern and method of Cultivation and easily understanding the facts in training programmes and also they may adopt technology if they are literate people.

Figure: 1

Level of education of respondents of



Table 2:	
Income status of Farmers in	study
area	

Income level	No. of Respondents	Percentage
Rs. 10,000 to Rs. 50,000	37	74
Rs. 50,000 to Rs. 1,00,000	10	20
Rs. 1,00,000 to Rs.1,50,000	3	6
Total	50	100

Source: Primary Survey

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The table and figure 2 clearly shows that income of sample farmers in the study area. In level of income of farmers the range of (Rs.10,000 to Rs.50,000) 74 percent had found, the range of (Rs.50,000 to Rs.1,00,000) 20 percent of farmers having annual income in the study area, and only (Rs.1,00,000 to Rs.1,50,000) 6 percent farmers are found in the study area. This shows status and standards of living of the family, and it conclude those Low income groups' people are engaging in Organic Farming in the study area and for the Successful Organic farming huge investment are needed.

Figure 2: Income level of Farmers



Particulars	No. of Respondent	Percentage
1 to 5	39	78
5 to 10	10	20
10 & Above	1	2
Total	50	100

Source: Primary Survey, 2019

The table 3 shows that the Family Size of the samples farmers in the study area. Out of the 50 respondents (39) 78 percent of farmers are come under 1 to 5 size of family, (10) 20 percent of farmers having 5 to 10 size of family. (1) 2 percent size of family is involving in organic farming. The above table depicts people who are 1 to 5 size of family farmers are adopting organic farming, but in organic farming suitable for family size more than 5 and above because of it can save labour cost.

Figure: 3

Family Size of Respondents



Table 4Occupations of the Farmersin thestudy area

Particulars	No. of Respondent	Particulars
Agriculture	49	98.0
Subsidiary	1	2.0
Total	50	100.0
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Source: Primary Survey, 2019

The table 4 reveals that out of 50 samples of the farmers in the study area. Out that (49) 98 percent of the respondents are involving in Agriculture as Major Occupation for their sustainability of life, only (1) 2 percent are involving them in some other work

Table 6

such as carpenter, daily labor, Bar Bar and other work as subsidiary Occupation. It found that No one is purposefully engaging in Organic farming in the study area.

Table: 5

Land Holdings of farmers in the study area

Particulars	No. of Respondent	Percentage
0.5 to 1	5	10.0
1 to 2	13	26.0
2 to 3	13	26.0
3 to 4	10	20.0
4 t0 5	4	8.0
> 5	5	10.0
Total	50	100.0

Source: Primary Survey, 2019

The table 5 and figure 4 indicate that land holding in the study area. It clearly shows that (0.5 to 1) of 10, (1 to 2)of 26, (2 to 3) of 26, (3 to 4) of 20, (4 to 5) of 8, above five 10 percent of land holding in respectively. The low land holding in the study area because of testing the yield and high land holding because of perhaps Training bv MYRADA. It clearly shows that the small and marginal farmer are cultivating or practicing the organic farming. And only few people are engaging in organic farming in the study area.

Figure: 4 Land Holdings of the farmers



Source of Irrigation in the study area		
Particulars	No. of Respondents	Percentage
Bore well	11	22.0
Ponds	1	2.0
Rain fed	38	76.0
Total	50	100.0

Source: Primary Survey, 2019

The table 6 reveals that the source of irrigation sample farmers in the study area. It shows that (38) 76 percent of the respondents are depends on Rain fed, (11) 22 percent of farmers on Bore Well and remaining (1) 2 per cent of the farmers are depends on Ponds. It clearly mentions that the farmers are facing the problem of irrigation in the study area. And they expect the irrigation facilities for promoting of organic farming by the Govt.

Table 7

Types of Irrigation in the study area

Particulars	No. of Respondents	Percentage
Not having	39	78.0
Flood Irrigation	2	4.0
Sprinkler	9	18.0
Total	50	100.0

Source: Primary Survey, 2019

The table 7 shows that 78 per cent of respondent are not having any kind of irrigation in the study area, 18 per cent of farmers are having Sprinkler irrigation, 4 per cent of farmers are obtained Flood irrigation and no one found in the drip irrigation segment. it clearly indicate that depends on Rain Fed is cause for weeds growing easily, and also indicate more water will waste in flood irrigation perhaps we save water if we can adopt drip irrigation.

Research Fralorer

Reason for growing Organic crops		
Particulars	No. of Respondents	Percentage
Training by MYRADA	16	32.0
Soil Fertility Mgt	4	8.0
Environment protection	1	2.0
Low cost of cultivation	25	50.0
Healthy & Tasty Food	2	4.0
Family attitude	2	4.0
Total	50	100.0

Table 8

Source: Primary Survey, 2019

The table 8 reveals that reason for growing organic crops of sample in study area. It clearly indicate (16) of 32 percent of respondent due to training by MYRADA, (4) of 8 percent for soil fertility management, (1) of 2 percent for Environment protection, (25) of 50 percent of people due to Low cost of cultivation, (2) of 4 percent are for Healthy and tasty food, and lastly (2) of 4 percent of farmers are growing for Family attitude. It summarize the things most of people who are involved in organic farming they may having the lack of Investment.

Table: 9

Motivational Factors to Farmers

Particulars	No. of Respondents	Result
Own	1	2.0
MYRADA	49	98.0
Total	50	100.0

Source: Primary Survey, 2019

Table 9 and represents Motivational factor for cultivating organic farming in the study area. (49) 98 percent of the farmers are cultivating organic farming because of promoted by MYRADA, only (1) 2 percent of farmers are growing by their own and by the family attitude. It indicate if any policy can made for promoting of organic farming by any Govt. or NGO's we may bring No. of farmers into Organic Farming.

Table	10
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Problems in Organic Farming					
Problems	No. of Respondent s	Percentage			
Weeds	26	52.0			
Irrigation	11	22.0			
Wild Animals	10	20.0			
Crop decease	1	2.0			
Labour	1	2.0			
Certified Inputs	1	2.0			
Total	50	100.0			

Source: Primary Survey, 2019

The table 10 reveals that problems in Organic Farming samples respond by sample farmers in the study area. The above table represents clearly out of 50 respondents facing deferent kinds of problems such as (26) of 52 percent weeds, (11) of 22 percent irrigation, (10) of 20 percent Wild Animals attack on crops, (1) of 2 percent is Crop decease, (1) of 2 percent is labor, and (1) of 2 percent facing the problems of above respective problems. And it indicate comparatively weeds are major problem in Organic farming other than Non-Organic Farming, because in modern farming use the pesticides, insecticides, herbicides and other can be used, but in organic farming also using of pesticides but which are certified as organic manure and not affect the soil, these organic manures are not that much effective to avoid the weeds.

Table: 11						
Remedial measures solve the	problems					

Remedial measures	No. of Respondents	Percentage	
Crop Rotation	42	84.0	
Hand Weeding	6	12.0	
Use of Certified Seeds	2	4.0	
Total	50	100.0	

Source: Primary Survey, 2019

The table 11 shows remedial measures for solve the problems of problems of samples drawn in the Study area. Out of 50 sample drawn (42) of 84 percent Crop Rotation, (6) of 12 percent Hand weeding, and (2) of 4 percent farmers are using Certified Organic Manures for Avoid the above coated problems. It indicating farmers are go through the traditional system because of may be lack of investment for adopt the technology like adopt drip irrigation for avoid the weeds in the crop area, also in the study area farmers facing irrigation problems.

Table 12Major buyers for organic crops

Buyers	No. of Respondents	Percentage
MYRADA	47	94.0
Others	3	6.0
Total	50	100.0

Source: Primary Survey, 2019

The table 12 reveals that the Major buyer for the Organic Products of the sample farmers in the study area. That shows out of 50 of 100 percent, MYRADA can purchase of 47 of 94 percent and remaining of the products are

purchased by others like Tamilnadu buyers and local buyers has purchase in the study area. It indicates for organic products specific buyer will need.

Findings of the study

- 1. Educational background of the farmers shows that there are fifty per cent of the farmers are studied primary and secondary level of education and other fifty per cent of the farmers are illiterate among those practicing organic farming.
- Majority of organic growers has 4 to 5 range of family members and only few of having more than ten members in a family. It shows that more employment opportunity provided by organic farming system.
- 3. Low level of income group farmers are involve in the organic farming, shows that status and standards of living of the family, and it conclude those low income groups farmers are engaging in organic farming in the study area and for the successful organic farming need huge investment.
- 4. Motivational factor of farmers to cultivating organic farming in the study area KABINI organic farmers producers' Pvt. Ltd., (MYRADA) it constitute of more than ninety five per cent. It indicate if any policy can made for promoting of organic farming by any Govt. or NGO's we may bring more number of organic farmers into organic agriculture.
- 5. Cost of cultivation: economic performance of any system could be analyzed the costs and the returns. In the present study cost of cultivation is less comparatively with (Secondary data) modern farming system, and the yield of organic farming is less in conversion stages and after three to five years the yield will be double than modern farming system.

- 6. The demand factor of organic is gradually increasing in the study area due to more people are having health consciousness.
- 7. Existing marketing **arrangements:** in the 4th chapter, an attempt to understand who are the consumers, who are the demanding organic commodities, why they are purchasing, their willingness to pay higher price and the opinions of these consumers to improve the system. This helps in suggesting suitable policy measures in order to develop an organized marketing system which acts as an intensive to producers.

Suggestions

- 1. The study clearly shows the economic profitability of organic farming. But it is true in the case of farms which were converted from modern to organic farming around more than five to six years and it is applicable to the ecosystem with assured irrigation. It is necessary to initiate in depth farm level studies of this nature in different agro climatic conditions and those farm which are in the initial stage of transition to understand the economic profitability at those levels. This helps in designing appropriate support policies for promoting organic farming on a large scale under different agro-climacteric conditions. Such research should initiated be bv agricultural research institutions.
- 2. It has been observed that cost of cultivation under organic farming is high in transition stage, though the farm Business Income from ecological agriculture is more due to higher yield and price. It is mainly due to the purchase of organic manure by the growers. Efforts should be made to

encourage farmers to keep livestock to produce on farm organic inputs in order to reduce the cost of organic manures.

- 3. Another important observation of the study is that only those growers who have other sources of income and those who can easily absorb the reduction in yield are converting to organic agriculture. In order to encourage more growers to convert support is to providing to absorb the effects of decrease in yield in the initial years. Providing subsidized organic inputs, price support are some of the options.
- 4. Training is another important factor influencing farmers to attain technical efficiency in production and get higher income. It helps in optional utilization of resources.
- 5. Certification is an important aspects of organic products. Despite several efforts of the state government, producers are not getting certification for their produce because, according to them, it is a difficult process and expensive.
- 6. Agriculture policy of Karnataka envisaged the involvement of NGOs in promotion of organic farming in the state. Though NGOs have several advantages, it is necessary to improve the capacity of these institutions. Technical training is to be given to before assigning the responsibilities.
- 7. Remunerative price acts as an economic incentive for encouraging more farmers to shift to organic farming. Presently there is no established marketing system for organic produce and due to this there is a large variation in received. Government price should take steps for the promotion of a market to cater to

the domestic and export markets. Marketing channels are to be developed and by networking with the retail chains to provide remuneration price can be assured.

8. Government can also announce minimum support price and procure the produce and sell through separate outlets. This price acts as a floor price for price formation in the open market. This system also ensures continuous supply to the consumers.

Conclusion

Organic farming is gaining momentum all over the world as it offers a means to address food

self reliance, rural development and nature conservation. The common thread in this approach is the sustainable use of bio-diversity, in terms of both agriculture's contribution to biodiversity and biodiversity's contribution to consciousness agriculture. People's towards healthy food, ecology and pollution free environment through conventional farming has encouraged them in practicing organic farming. Organic agriculture used to be a way of life in India, a tradition which for centuries has shaped the thought, the outlook, the culture and economic life of its people. Prior to independence and till two decades later a majority of the Indian farmers were unaware of the use of plant nutrition fertilizers for and pesticides for control of pests and diseases. In fact, it was all holistic agriculture then and the majority of farmers were cultivating in this way. However, to feed the ever-growing population of the country, it was felt necessary to rapidly increase the production of food grains. Thus, to achieve self sufficiency in food, dams and irrigation systems were put in place, use of external inputs like seeds of high yielding varieties of crops, chemical fertilizers and plant protection chemicals were developed and made available.

Organic agriculture recognizes that crop rotation and an intensive partnership with animal husbandry is important to maintain the ecosystem balance. Organic farming aims at production of quality and safe agricultural products which contain no chemical residues, following ecofriendly production methods and the farming systems that restore and maintain soil fertility.

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STUDY ON THE MEMBERS' PERCEPTION TOWARDS THE PERFORMANCE OF MULTIPURPOSE AGRICULTURAL COOPERATIVES IN WEST SHEWA ZONE OF OROMIA REGION, ETHIOPIA

Mr. KEBEDE G/WOLD

Ph.D. Research Scholar

Prof: S. NAKKIRAN

Professor of Cooperative Management, Institute of Cooperatives and Development Studies, Ambo University, Ethiopia

Abstract

Cooperatives are crucial engines of economic and social development in most developing countries. Their performance fluctuated widely with a declining trend. Due to these members perception towards the performance of cooperatives was very poor and their participation and involvement in cooperatives is low. The study therefore, sought to examine member's understanding based on four performance criteria. To meet the intended objectives of the study, data were drawn from primary and secondary sources and follows a mixed method research approach. A two-stage stratified sampling method was employed to select the sample districts and cooperative societies. Systematic sampling methods were used to reach at 236 member respondents from the sampling frame of cooperative societies. The finding result indicates that out of the sixteen items stated for perceptual examination 12 items were in disagreement, 2 items were agreed and the rest two items were below 50 % of the Likert scale measurement. This shows that a negative perception /attitudes of members towards the various functions and activities of the cooperatives from the normally accepted performance of cooperative enterprises.

Keywords: Multipurpose agricultural cooperatives, Perception, Performance

Introduction

A cooperative is an autonomous association of persons united voluntarily for the common social, economic, cultural needs and aspiration through a jointly owned and democratically controlled enterprises (ICA, 1995). Perceptions are defined as "an individual's or group's unique way of viewing a phenomenon that involves the processing of stimuli and incorporates memories and experiences in the process of understanding" (McDonald, 2012).

Customer service received good performance evaluations and was one of

the issues identified by respondents to be the reason for patronizing cooperatives. Experience of the farming community in cooperatives indicated by the age of the household head and is the likely to have a range of influences on member's participation and perceptions Farmers with long experience in farming may have better and wide knowledge to perceive risks and constraints to effective transfer of new technologies (Ortmann & and better performance King, 2007;Ugochukwu, 2013). These perceptual understandings of members on performance of agricultural the cooperative could be positive, negative or neutral influence on the level of members participation depending on the benefit gained. The basic benefits on literature reviewed members gained from cooperatives include supplying farm inputs, storage facilities, facilitating bank loans, marketing and business activities (Berko, 2001).

Hence, members do not perceive their cooperatives perform well in terms of their needs and expectation. Therefore, the study examine member's perception on the bases of four performance criteria in West Shewa Zone, Oromia region, Ethiopia where there is a large number of agricultural cooperatives.

Objective of the study

Members' Perception on the Performance of Multipurpose Agricultural Cooperatives in West Shewa Zone of Oromia Region, Ethiopia

Significant of the study

The study would be useful for the management bodies in which operating under similar conditions in improving cooperatives performance through appropriate and relevant measures. It also provides policy makers and development practitioners who are interested in further promotion and support of agricultural cooperatives as an important institution for cooperative development. Pre-eminently, the study will be useful to elucidate the performance of multipurpose agricultural cooperatives by taking West Shewa Zone into consideration.

Description of the study area

The study was carried out in West Shewa Zone, Oromia region where three districts were selected purposefully and six cooperative societies (Assgorii, Barodo, **Ouillimmitto** Metii. Billo. and T/Gebakimissa) were identified on the bases of some selection criteria. Agriculture is the dominant economy of the area where mixed farming was practiced. The major crops grown in the area are theff, barely, sorghum, maize, lentils chickpeas and that of animals are oxen, cows, sheep, goat, etc.

Research methodology

This research employed a mixed method approach where both qualitative and quantitative data types were used to examine member's perception on the performance of agricultural cooperatives. The study uses sixteen perceptual statements (Items) and it had been developed based on four performance criteria (membership base, management, marketing and financial performance) on the five point Likert scales measurement approaches and questionnaires were distributed to the respondents among 236 agricultural cooperative members. To supplement data gathered through questionnaire, open-ended questionnaires were employed in order to corroborate the collected from questionnaires. data Descriptive statistics such as frequencies, percentages were used. The data collected from questionnaires were analyzed using Statistical Package for Social Sciences (SPSS) version 20.0 software.

Data collection tool

The study largely employed questionnaire as data collection method. In order to realize the selected respondents, the study used well-designed questionnaire as best instrument and closed and open ended questions were designed.

Determining sample size

Sample size determination is the most important design decision problem that faced by most researcher or scholars who are engaged in research. The sample size of the study or the number of member of the respondent were determined using Kothari (2004) formula:

$$\mathbf{n} = \frac{\mathbf{p} \ast \mathbf{q} \ast \mathbf{z}^2 \ast \mathbf{N}}{(\mathbf{N} - 1)\mathbf{e}^2 + \mathbf{z}^2 \ast \mathbf{p} \ast \mathbf{q}}$$

Where:

n = is the minimum sample size required (236)

N = is number of population (Cooperative under study) 6054

Z= 95% confidence interval under normal curve (1.96),

e = acceptable error term (0.05)

n

$$=\frac{0.8*0.2*(1.96)^2*6054}{(6054-1)(0.05)^2+(1.96)^2*0.8*0.2}$$

$$n = \frac{0.16 \ * \ 3.8416 \ * \ 6054}{6053 \ * \ 0.0025 \ + \ 3.8416 \ * \ 0.16}$$

$$n = \frac{3721.1274}{15.747156} = n = \underline{236}$$

From the selected district cooperatives two hundred thirty six (236) respondents were selected by using Probability Proportional to size sampling techniques (PPS). In this case, the researcher considers the available resources and time.

Sample districts and selected cooperative societies										
S/ N	f the	elected	of ent		Total memb	No. ers	of	PPS		
	Name of districts	Name of s PMAC	Year establishm	Capital	Male	Female	Total	Male	Female	Total
1	odi	Meti	1969	252, 067.15	461	74	535	18	3	21
	An	N/Bilo	1977	64, 318.00	248	39	287	10	3	13
2	Dendi	Asgorii	1997	102, 534.45	830	143	973	32	6	38
		Borodoo	1997	176, 567.00	474	288	762	18	11	29
3	utaye	G/Kemissa	1988	789, 985.50	1403	94	1497	55	4	59
	T/k	Qiiliinxo	1994	348, 018.30	1435	565	2000	56	20	76
Total				2,191,808.7	4851	1203	6054	189	47	236

 Table 1

 Sample districts and selected cooperative societies

Source: Zonal Cooperative Promotion Office (2017)

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Results and discussions

In the result and discussion part descriptive statistical analysis was used to examine member's perception on the performance of agricultural cooperatives.

As the findings of most of the respondents' perceptions towards the various purpose and business operations of multipurpose agricultural cooperatives they are involved in indicates unfavourable perception towards the normally assumed purpose and business operations and benefits of cooperatives. Many of them indicated that cooperatives performance in terms of membership base, management, marketing and financial performance was poor.

The Likert Scale measurement approaches elicited "Strongly disagree" and "Disagree" to 50% or more of the respondents on the various purpose and business operations of the six multipurpose agricultural cooperatives.

Twelve positively stated statements elicit 61.26% respondent disagreement while 2 other positively stated statements elicited 90.25% respondent agreement. As dominantly reflected in the 12 statements out of the 16 Likert scale items on the multipurpose agricultural cooperatives, most of the respondents, about 61.3% or 145 members expressed negative/unfavourable attitude towards the various functions/activities and qualities of the agricultural cooperatives they belong to in the three districts of the study area.

Only two statements elicited "Strongly agree" and "Agree" to 50 % or more of the respondents on the purpose and business operations and activities of the multipurpose agricultural cooperatives. These are being a member of agricultural cooperatives results in productivity (i.e. members relatively better than nonmembers) (194:82.2 %) and price of inputs being better in cooperatives (232: 98.3%). below The Table illustrates the unfavourable attitude/ perception of the

members towards the various functions/activities of their cooperatives:

The statement to receive a greater percentage of disagreement over the many purpose and business operations and activities of the cooperatives is 'having access to loans through agreements reached between the cooperatives and banks'. Similarly, the Likert scale measurement approach also indicates that the only item to receive a greater percentage of agreement over the various functions/activities of the agricultural price of inputs being cooperatives is better in cooperatives. In general the overall performance of agricultural cooperatives is low. The Likert scale questionnaire are supported by the openended questionnaire forwarded to member respondents.

Conclusion;

Findings from the quantitative and qualitative analysis in terms of the performance criteria revealed that members' attitudes /perceptions are characterized by a dominantly emerged negative theme. From similar study, it can also be deduced that cooperatives do not agricultural inputs. steadily supply Besides, member's involvements did not significantly influence leadership for improved cooperative performance. Members stated that cooperative membership is important than not to member for some small benefit, as a result cooperatives business activities were not strong. On top of these, the financial data of cooperatives were not reported to members during meeting and cooperatives did not make formal agreement with banks to facilitate access to credit to members. As a result, member's perceptions on the overall performance of cooperatives were found to be poor. This indicated those cooperatives' competitiveness and institutional sustainability and viability is questionable.

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WASTE PLASTIC AND R.C.A - THE ONLY RAW MATERIALS FOR PLASTIC TILES AND BLOCKS

D. RISHAV SINGH

Department of Civil Engineering (Dream Institute of Technology) Thakurpukur, B.H. Road, Kolkata - 700104

Abstract

This paper elucidates about the use of plastic waste material in making of Plastic Tiles and Plastic Blocks with mixing of Recycle Cement Aggregate (R.C.A). The components used include everything from plastic screws and hangers to bigger plastic parts that are used in decoration, electric wiring, flooring, wall covering and waterproofing. Plastic use in road construction that have shown same hope in terms of using plastic waste in road construction. i.e. plastic roads. Plastic Tiles and Blocks are made mainly by using plastic carry bags, disposable cups and PET bottles that are collected from garbage dumps and RCA materials which are one of the biggest list in Constructional waste and is available very easily everywhere they mostly come from building demolishing . By using plastic waste and RCA as modifier, we can reduce the quantity of cement and sand by their weight, hence decreasing the overall cost of construction. The disposable plastics are the main source of plastic. For these plastic pollution is not only the ocean also in desert. Construction waste is very dangerous as it is directly affecting our health and creating much pollution like Air, water, land etc.

Keywords: Plastic Recycled, RCA Waste Construction, Waste, Replacement, 3-R Principal; Waste Management's Tiles, Blocks.

Introduction

In simple word a plastic is material which is made from natural materials such as cellulose, coal natural gas, salt and crude oil through a polymerization process. Polymerization is a process where molecules (i.e. Monomer) is converted into polymer. Polymers is repeating structure of molecules (i.e. Monomer) like a long chain if reparation is in order then polymer if in non-order then macromolecules. In simple word concrete means mixing of cement, sand, aggregate and water in ratio. Where cement act as a binding material, sand and aggregate as filler material. when any building is demolished this concrete is only called a waste and it has no importance for others but here R.C.A. is used as a filled material after doing the crushing and sieving.

History of Plastic and R.C.A:

Over the last century humans have learned how to make synthetic polymers,

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sometimes using natural substance like Cellulose but more often using carbon atoms provided by Petroleum and other fossil fuels. This polymers are strong, light weight and flexible. In words, its what make them so Plastic, Now, human learned how to create and manipulate them, polymers have become an essential part of our lives. Especially over the last 50 years plastic have changed the way that we live. The first Synthetic Plastic was invented in 1869 by John Wesley. By treating cellulose, derived from cotton fiber with camphor, John Wesley discovery a plastic that can be made in shapes manv and this invention eliminated the use of natural substance. This discovery was Revolutionary for the first time

This development helped not only people but also the environment at that time because no pollution with plastic use was notice at that time. The demand of plastic was so high that during World War II the demand of plastic was increased by 300%.

Around 200 BC Human have learn the way of construction but without use of cement composition they used volcanic Ash and other natural substance in concrete. Joseph Aspdin Invented cement in UK in 1824. John Smeaton who Known as Father of Civil Engineering discover the method for concrete by using cement, this discovery this revolutionary because it was cheap in compare to other building materials. About 6 billion cubic meter of concrete is made each year which is equal to 1 cubic meter for every person on earth.

1. TYPES OF PLASTIC:

There are 7 types of plastic exist in our current modern days:

The different types of plastic that are manufactures and used worldwide are provide in Figure 1.

Polyethylene terephtalate (PET)	ê Pet	Beverage bottles, medicine jars, rope, clothing and carpet fiber
High-density polyethylene (HDPE)	ALL HOPE	Containers for milk, motor oil, shampoos and conditioners, soap bottles, detergents, and bleaches
Polyvinyl chloride (PVC)	Ŷ	All kinds of pipes and tiles
Low-density polyethylene (LDPE)	ALLEPE LEPE	Cling-film, sandwich bags, squeezable bottles, and plastic grocery bags
Polypropylene (PP)	ക്ല	Lunch boxes, margarine containers, yogurt pots, syrup bottles, prescription bottles, plastic bottle caps, plastic cup
Polystyrene (PS)	ঞ	Disposable coffe cups, plastic food boxes, plastic cutlery and packing foam
Polyethylene Acrylonitrile butadiene styrene (ABS) Polyamide (PA) or Nylons Polybutylene terepithalate (PBT)		Baby bottles, compact discs, and medical storage containers

Fig 1: Different types of plastic

World construction Aggregate Demand (million metric tons) (The Freedonia Group, 2012)

Problems with C&D Waste

				% A Gro	nnual owth	
	2005	2010	2015	2005	2010	
				-	-	
				2010	2015	
Constructi						
on	27300	37400	4830	6.5	5.2	
Aggregate	27500		0	0.5	5.2	
Demand						
North	3280	3010	3710	-17	13	
America	5260	3010 3	3710	-1.7	4.5	
Western	2020	2630	3050	2.1	3.0	
Europe	2920	2030	3030	-2.1	5.0	
Asia	16000	24750	3260	0.1	57	
Pacific	10000	24750	0	9.1	5.7	
Other	5100	7010	8940	6.6	5.0	

2. THE IMPORTANCE OF PLASTIC AND CONCRETE IN TODAY'S SOCIETY:

In today's society plastic is highly depended on by a number of industries, including aerospace and automotive. By some it may be argued that without plastic the developments made within these industries would not have been possible or at least profitable and with 170,000 people employed in the industry. According to a report since 1950 around

8.3 billion tons of plastic have been produced and only 9% of it has been recycled. About 2 million plastic bags are used every minute.

Concrete is used more then any other manmade material on the planet. About 6 billion cubic meter of concrete is made each year which is equal to 1 cubic meter for every person on Earth. During 19th Centuries the demand of concrete is increased by 200% due to its demand and durability. According to Washington post "China has used more concrete during the year 2011-2013 then united states concrete use in the entire 20th Century." Each year 2.5 Billion cubic meter debris of concrete is produced in the world.

3. PLASTIC WASTE:

Plastic is killing more than 1.1 million seabird and animal every years. The average person eats 70,000 micro plastic each day. Plastic debris is found absolutely everywhere, from the Arctic to Antarctica. But thanks runoff, and to our fondness for directly dumping our trash into the nearest river or lake, plastic is growing increasingly common in the world's oceans. We already know that franking is bad for the planet - it pollutes water, soil and air with toxins, it creates underground cavities that collapse into sinkholes, and it raises pressure in underground rock formations, destabilizing them and leading to in places earthquakes, even where earthquakes are uncommon. Plastics go into the water bodies which are already polluted due to many sources. Fish and other aquatic animals. Plastics become a nuisance because their of nonbiodegradability. Soil fertility deteriorates as plastic bags form part of manure and remain in soil for years. Polythene bags if burnt release highly toxic gases like phosgene, carbon monoxide, chlorine, sulphur dioxide, nitrogen oxide beside deadly dioxins.



Fig 2: Plastic Waste

4. CONCRETE WASTE:

Concrete is the most generally utilized substance on Earth. Concrete is a parched behemoth, sucking up for all intents and purposes a tenth of the world's mechanical dihydrogen monoxide use. In urban areas, concrete also coordinates to the warmth island impact by retaining the glow of the sun and catching gases from vehicle debilitates and forced air system units – however it is, at any rate, superior to progressively foreboding black-top. Limestone quarries and concrete processing plants are moreover regularly contamination sources, alongside the trucks that ship materials among them and building destinations. At this scale, even the procurement of sand can be calamitous – annihilating such a large number of the world's sea shores and stream courses that this type of mining is presently progressively run by composed malefaction groups and connected with deadly viciousness. The cementation of Japan negated great tasteful goals of concordance with nature and an energy about major (fleetingness), however was justifiable given the ever-present fear of quakes and torrents in one of the world's most seismically dynamic countries.

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Fig 3: Concrete Waste

5. EXPERIMENTAL:

Plastics used in the experimental program are waste water bottles, polythene. Sand was sourced from local supplier.

RCA used in the experimental program are collected from a local building demolishing site. Using recycled materials as gravel reduces the need for gravel mining. From economic point of view recycled concrete is a construction materials that the community does not need to pay for: those who generated the concrete waste pay for fee to have it recycled.

Specific gravity of R.C.A (G) =2.62
 Fineness modulus (F.M)=2.9



Fig 4: colourful plastic tiles

Process of making of Plastic Tiles



PREPARATION OF SPECIMEN:

The collected waste such as plastics bottles are cleaned in water and dried properly before being cut into small pieces to enable easy heating. The plastic pieces and RCA are taken in a proportion of 1:3, 1:1.5, 1.1 (plastics : RCA) by weight and are heated in container. The heated materials are then mixed to get a homogenous mix and then poured into cube moulds of 70.7x70.7x70.7 mm size. After cooling it for 10 hours in the mould, the specimen are remolded and immersed in water for 24 hours being removed for testing





Research Explorer

32

Volume VIII, Issue 26

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TEST OF SPECIMEN:

The sample was tested for water absorption, and compressive strength and normal blocks were also tested to compare with those of sand plastic block specimens.

COMPRESSIVE STRENGTH:

Tiles should have a specified minimum compressive strength so that they can be used in construction works



At Y axis compressive strength 1st specimen= 1:3 proportion (15 Mpa) 2nd specimen =1:1.5 proportion (10Mpa) 3rd specimen=1:1 proportion (5Mpa)

WATER ABSORPTION TEST:

*Water absorption of tiles specimens are tested.

* It has shown that recycled sand and plastics block have low water absorption ratio.



*1st class tiles have water absorption =20% of its weight

*2nd class tiles have water absorption =16% -20% of its weight.

BUT,

Specimen 1 = 1:3 (plastic: sand) has water absorption 3% of its weight

Specimen 2 = 1:1.5 has water absorption 2 % of its weight

Specimen 3 = 1:1 has water absorption 1.5% of its weight.

As the water absorption of the recycled tiles have the low water absorption ratio so it has superior durable properties.

BULK DENSITY TEST:

Bulk density is a property of powders granules and other divided solids, especially used in reference to chemical mineral components, substances, ingredients, foodstuff, or any other masses of corpuscular or particulate matter. Soil weight is most often expressed on a soil volume basis rather than on a particle basis. Bulk density is defined as the dry weight of soil per unit volume of soil. Bulk density considers both the solids and the pore space, where as particle density consider only the mineral solids.



RESULT:

Specimen 1= proportion 1:1 =1.23 gm/ml Specimen 2= proportion 1:1.5= 1.25 gm/ml Specimen 3 = proportion 1:3 = 1.28 gm/ml

Research Explorer

Volume VIII, Issue 26

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SPECIFIC GRAVITY TEST:

Specific gravity is a special case of relative density. It is defined as the ratio of density of a given substance, to the density of water. Substances with a specific gravity greater than 1 are heavier than water, and those with a specific gravity of less than 1 are lighter than 1.



RESULT:

Specimen 1= proportion 1:1= 1.37 Specimen 2= proportion 1:1.5= 1.219 Specimen 3= proportion 1:3= 1.08

Table 1

Physical properties of the R.C.A.

Physical properties	value
Specific Gravity	2.54
Aggregate crushing value	28.91%
Aggregate impact value	24.17%
Water absorption value	2.44%
Nominal Max size (mm)	20
Fineness Modulus	6.79
Bulk Density (kg-m ⁻³)	1250
Porosity (vol.%)	5.03
Absorption (wt.%)	2.03
Moisture content (wt%)	1.57
Angular number	12.7

Table 2:

Specification of the Tiles

	NORMAL TILES	OUR PLASTIC
		TILES
DIMENTION	for wall 12*12,8*10,4*4 ,8*8,12*24, for floor 12inch	250*300*1 0mm
WEIGHT	4pounds/ft^2	450 gm
RATE	50 rs per square feet	20 Rs.
WATER ABSORPTION	3% to 7 %	1%



Fig 6: plastic tiles

Other Specification:

- Making cost of one unit of plastic tiles = Rs. 5-7.
- Selling Price of plastic tiles per unit = Rs.15-25.
- Volume of material required in 1 unit of plastic tiles = 0.000075 meter cubic.
- Amount of plastic = 250 gm.

6. HOW TO SET UP THE BUSINESS FROM THIS PLASTIC TILES:

- Selection of area where factory will setup.
- Area required 15000 to 2000 square feet.
- The owner have to notify and register their premises with the local governing authority before the beginning of operations

Research Explorer

Volume VIII, Issue 26

ISSN: 2250-1940 (P), 2349-1647(O)

- Document required: application Form for the consent. DD for the statuary fees amount. Lease agreement copy, NOC copy in name of factory.
- Manufacturing process of each product with flow diagram. SSI Registration copy. M.O.A. copy. List of raw material with monthly or annual consumption.
- Shed for storage unit and machines. Setup of power connection, water supply, place to keep raw materials.
- The installation of machines Cutter Machine (for Waste plastic, Boiler unit (to liquid the plastic), Mixing Machine (for mixing the mixture), Mould for tiles, Table vibrator (for good compaction) Crusher Machine (for crushing the concrete debris).

CONCLUSION

- 1. Making plastic tiles from RCA and waste plastics can be an alternative to the traditional clay tiles.
- 2. RCA plastic tiles have lower water absorption, compressive strength higher than compare to clay tiles.
- 3. Waste plastics and waste Concrete which is available everywhere may be put to an efficient use in tiles making.
- 4. The process is so simple that a villager can also start this as a business with very less investment, Raw material waste plastic and waste concrete can be available at very low price and easily available. Running this business don't required any special skills even labors can also work very comfortable with minimum training. This business model is a profitable with minimum investment.

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SUSTAINABLE DEVELOPMENT GOALS & WOMEN EMPOWERMENT THROUGH MGNREGA: A CASE STUDY

KALACHANDSAIN

(Govt. Approved PTT) Department of Economics Balagarh B.K. Mahavidyalaya Balagarh, Hooghly, WB

Abstract

The Sustainable Development Goals (SDGs) are a collection of 17 global goals set by the United Nations. The broad goals are consistent though each has its own targets to achieve. The SDGs cover a broad range of social and economic development issues. No Hunger and Women Empowerment are the two important SDGs. For sustainable growth, MGNREGA programme promises to deliver poverty alleviation and to improve empowerment of the women coming from the under privileged section of the society helping them towards self reliance and generating confidence amongst them. The MGNREGA programme inculcates the habit of saving among women, so that they can reinvest in entrepreneurial activities. This paper attempts to examine the role of MGNREGA programme in poverty alleviation and women empowerment as a part of sustainable development goals (SDGs) in Kalna block II, the major sub-division of PurboBardhamman district. The primary data has been collected with the help of a structured questionnaire and secondary data so far available from different journals, magazines and websites.

Keywords: MGNREGA, PurboBardhamman, Sustainable development, Women,

Empowerment. Hunger, Poverty.

I. Introduction:

Empowerment, a multidimensional comprising political, social. process cultural, economic and legal dimensions helps one to gain control of their lives by their raising alertness. The term 'empowerment' denotes the process of growing the assets and capabilities of individuals or groups to make purposive choices and to transform those into desired

actions and outcomes (Chakrabarti et. al. 2008). Women empowerment can be treated as a process by which women can enjoy greater control over material and intellectual resources that will enable themselves to have greater sovereignty over household decision making and economic resources In India, women are important for national development because they constitute half of country's

human resources. However, the results of National Sample Survey showed that women economic activities are on the decline. This trend was supported by the World Development World Bank's Indicators (2014), which showed that only 27 percent of women in the age group of 15 or elder than that participated in the labour force, declined from 34 percent in the year 2000. This turn down was concentrated among the poor and rural need of job women who are in opportunities (Kabeer, 2016). Therefore, to improve the socio-economic conditions of rustic women, it is necessary to empower the women. The Government of India has launched and implemented several programmes towards poverty alleviation and women empowerment but it has been seen that women in rural areas remained poor. The Government of India has initiated Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA) which is not only a scheme but an Act that provides legal guarantee to work and under this scheme both women and men participate freely in the rural areas. Women's empowerment was not among the original in-tentions of the National Employment Rural Guarantee Act (NREGA), and is not among its main objectives. However, provisions like priority for women in the ratio of one-third of total workers (Schedule II (6)); equal wages for men and women (Schedule II (34)); and crèches for the children of women workers (Schedule II (28)) were made in the Act, with the view of ensuring that rural women benefit from the scheme in a certain manner. The success of MGNREGA depends on the inclusion of all, mainly women in rural India. In contrast to the high participation of women in the pro-gramme as workers, their participation in processes like work se-

lection, social audit, mobilisation of civil society, and share in the control and management of assets created is not

encouraging. This being the case, in some

places, women's participation in the gram

sabha has increased, and there is even an increase in the number of women who speak in the gram Sabha.

II. Sustainable development goals:

In 2015, the world agreed a new set of global goals to eradicate extreme poverty and achieve sustainable development. Building on the Millennium Development Goals, they are known as the Sustainable Development Goals, or SDGs. The SDGs are built on the Millennium Development Goals (MDGs). However, contrarily to the MDGs that were intended for action in developing countries only, the SDGs apply to all countries. They cover the three mentioned dimensions above of sustainable development: economic growth, social inclusion and environmental protection. UN has also put forward the idea of six essential elements that help frame and reinforce the universal integrated and transformative nature of the Sustainable Development Agenda. One of important SDG is women empowerment. This goal includes the following important targets: i) End all forms of discrimination against all women and girls everywhere; ii) Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation; iii) Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation; iv Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate; v) Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life;

III. Literature review:

There are many studies related to the impact of MGNREGA on women's participation and their empowerment, most of which show positive impact. It was endeavoured to review some of them.

Malhotra et al. (2003) made a pioneer study of measuring and analyse the women empowerment. Here used six commonly dimensions, viz. economic, socio-cultural, familial-interpersonal, legal, political and psychological including their potential operationalization in the household, community.

Parveen et al. (2004) quantitatively measures rural women empowerment of Bangladesh at household level. Education, training and exposure to information media have the potential to increase women's empowerment to a large extent.

Khan et al. (2008) studied the women's empowerment in Faisalabad district of Pakistan based upon sociocultural context of study area. The study suggests revolutionary changes in women education that will support gender awareness and self esteem among women.

Chaudhry et al. (2009) shows diverse result of women empowerment in three different regions, viz. urban, rural and tribal areas of Southern Punjab (Pakistan). Besides education, access to media, socio-cultural norms of the community, job of women and household participation rate, a variable about the knowledge of an Islamic Concept of women empowerment has an effect upon women empowerment index constructed in the study.

Jean Dreze (2011) states that MGNREGA has become tool for rural empowerment by providing 100 days employment per year per household, increased bargaining power of women and rural labour and provided independent earning opportunity to women for empowerment. The authors also found that 79 percent women collect their own wages and 68 percent keep wages with them.

Reetika Khera and Nandini Nayak (2011) in the elaborative study found that limited and irregular labour market, social barriers and working condition discouraged women's work participation. But, local availability of government work. work. regulated working hours; less exploitative and dignified nature of work under MGNREGA have been main motivating factors for women to participate in works. MGNREGA helped avoiding hunger and purchasing of medicines, migration, payment for children education ad repayment of debts and avoiding hazardous working conditions for majority of the women job seekers, the study found.

Varghese (2011) made a study of women empowerment based upon five independent variables and total women empowerment as dependent variable. It shows that women in Oman are better in household decision making and economic decision making than social empowerment.

IV. Objectives of this Study:

Following are main objectives of this paper. i. To understand the socio economic conditions of women job seekers. ii. To examine how Sustainable Development Goals, particularly, the goal of no-hunger and no poverty been achieved in the study area through MGNREGA. iii. To assess the impact of the MGNREGS on empowerment of women, one of the SDGs, in the study area.

V. Sample Design and Data Collection:

For the present study Kalna Block II, district Burdwan, West Bengal State, India has been chosen. Statistical tools like Chi-square test; percentages etc have been used for data analysis. This study is based on primaryand secondary data. Secondary data have been collected from reference books, journals, and websites. The primary data were collected by administering a structured schedule, exclusively prepared by keeping in view the objectives of the study, from 50 randomly chosen female beneficiaries of the MNREGS in January, 2017.

VI. Results and findings: Women's Participation under MGNREGS in Kalna Block II

There are various factors which determine the women worker's participation under this scheme, viz. nature of work that does not need skilled worker, the limited hours of work, availability of work locally, reduction of migration of male member, substantial jump in the wage rate etc. At the national level women participation has increased significantly to 53.01% in 2012-13 (till January, 2013). Highest participation is seen in states like Kerala (92.66%). Women Participation rate of Kalna Block II under MGNREGA scheme is also found to be high (near70%). Socio-economic condition of respondents: A Socio-economic condition represents the status, position and growth of a society. Therefore, it is very important to understand the socioeconomic structure of a society. In this section, we discuss the socioeconomic conditions of women job card holder in our study area. Socio-economic conditions include the family structure, family headship and educational status of the women.

A. Family structure

Family structure has laid an influence upon empowerment of women. In the study area, 35% of respondents belong to nucleus family and rest 65% to joint structure before family ioining MGNREGA and 40% of respondents belong to nucleus family and rest 60% to joint family structure after joining MGNREGA (Table 1). In joint family the women has to compromise family matters strictly with other family member. The decision making power is shared equally with all other family member and husband even cooperating his wife with a good manner cannot interfere in this matter for the sake of peace of family. There is a negative relation between family structure and women empowerment and vice-versa.

B. Family headship

In our society of India in most cases women live under the headship of husband or other family members like father in-law or brother in-law. Family head holds the supreme authority not only in family decision making but also in positioning the role of women in family. In our study, 60 % and 40 % (Table1) of respondents belong to husband headship with headship of other family member before and after joining MGNERGA. The women being much more flexible with husband in pertaining with family issues than other family member, the women empowerment tends to increase in headship of her husband than other member of her family.

C. Educational status of women

As women empowerment largely depends on awareness of women rights and education which ensures bargaining power of women on family matter. As per field report, 10% women are illiterate before joining MGNREGA. 30% women are primary and middle school and 60% women are secondary and above while these rates are 20% and 80% after joining the MGNREGA. This implies that involvement of MGNREGA expands the literacy rate among the rural women as well as empowerment

Table 1
Percentage distribution of response
pattern of Explanatory variables

Explanatory variables		Total responden t (N=50) Before job cards		Total respondent (N=50) After job cards	
		No.	%	No.	%
Type of family	Joint	35	70	30	60
structure	Nucleus	15	30	20	40
Family headshi	Others	20	40	30	60
р	Husband	30	60	20	40
Educati onal	Illiterate	05	10	00	00
status of women	Primary and middle school	15	30	10	20
	Secondar y and above	30	60	40	80

Source: Calculated and compiled by author

Income level of members:

For the improvement in standard of living, income acts as a major determinant. The income of the members has increased after joining MGNREGA scheme. The highest category of Rs (3000-4000) per month. This increase shows that members have raised their income level after joining the MGNREGA scheme. 14% of respondents lie in the income group of Rs (3000-4000) which has been increased to 24% after joining the said scheme. Again 16% of respondents lie in the income group Rs (5000-6000). It is very significant. According to the data collected there is an impact that there is change in income after enrolment under MGNREGA scheme. Many women job card holders involved themselves in economic activities independently and to raise their income level and standard of living.

Rise in income among the women job card holder represent not only standard of living among the women but also reduction of poverty among the members which is the one of SDGs.

Hypothesis1: H0- There is no significant difference in the monthly income of the women members. H1- There is a significant difference in the monthly income of the women members. Table 2: Monthly Income of the members before and after joining MGNREGA

Table 1

Monthly Income of the members before and after joining MGNREGA

Sr. No.	Month ly income in Rs.	No. of Respo ndent s	Perce ntage	No. of Respo ndent s	Perce ntage
1	Less than 1000	04	08	00	00
2	1000- 2000	14	28	05	10
3	2000- 3000	18	36	10	20
4	3000- 4000	07	14	12	24
5	4000- 5000	05	10	10	20
6	5000- 6000	02	04	08	16
7	Above 6000	00	00	05	10
Total		50	100	50	100

Source: Calculated and compiled by authors

Table 3

Chi-square value

Chi-square value	Significant	df
21.37	5%	5

Source: Calculated and compiled by authors

Chi-square value Significant df 21.37 5% 5

The critical value of chi-square = 11.070 at 0.05 level of significance

The critical value of chi-square = 16.7496 at 0.005 level of significance

The calculated value of chi-square is 21.37, which is greater than the tabulated value i.e 16.7496. Hence, it is taken as quite significant at the 0.05 level. Therefore, the null hypothesis is rejected and alternative hypothesis accepted. It reflects that the respondents having higher income has increased significantly after joining MGNREGA. So we can simply say that MGNREGA has positive impact on women level of income.

Community and Women empowerment

4 shows Table the Women Workers' Participation in the Gram Sabha in the study area. From the Table 4 shows that after joining the MGNREGA 50% respondents said that they attended the Gram Sabha and 40% respondents said that they not only attended the Gram Sabha but also they had been speaking in Gram Sabha. Ten percent women (NREGS workers) now also meet and interact with government officials (Table 4). This has larger effects in terms of increase in confidence levels.

Hypothesis1: H0- There is no significant difference in the Women Workers' Participation in the Gram Sabha H1- There is significant difference in the Women Workers' Participation in the Gram Sabha

Table 4:

Chi-square value

Women Workers' Participation in the Gram Sabha

	Bef join MGN A	ore ling REG	Aft join MGNF	er ing REGA	Chi- squa re value	d f	Significa nt level
	Nu mbe r	%	Num ber	%			
%of Women attaining Gram Sabha	15	30	25	50			
% of Women Speaking Gram Sabha	10	20	20	40	1.023	2	99%
% of Women Interacti ng Gram Sabha with Officials	01	02	5	10			

Source: Field survey, 2017, January.

The critical value of chi-square = 1.03 at 0.95 level of significance The critical value of chi-square = 0.020 at 0.99 level of significance

The calculated value of chisquare is 1.023 which is greater than the tabulation value i.e. 0.20 at the 99% level of significant. Therefore, null hypothesis is rejected and alternative hypothesis is accepted. It reflects that community and women empowerment has improved significantly after joining the MGNREGA scheme.

Contingency coefficient:

The Contingency coefficient, denoted by C, provides a measure of correlation between two variables, with each of these variables being classified into two or more categories. Other coefficient of correlation does not have limits (\pm). Its upper limit is dependent upon the number of categories. It does

not have negative value. After computing the value of chi -square () from the given data, the value of contingency may be computed directly by the use of the following formula:

C= $\sqrt{\frac{x^2}{x^2+N}}$ (Where N= number of observation.)

Here, value of Contingency coefficient is 0.06 which is positive that's mean MGNREGA has positive impact on women empowerment in our study area. The calculated value of chi-square is 1.023 which is greater than the tabulation value i.e 0.21 at the 99% level of significant. Therefore, null hypothesis is rejected and alternative hypothesis is accepted. It reflects that community and women empowerment has improved significantly after joining the MGNREGA scheme.

Findings:

The major findings of my study are

i) Women members become educated after joining the MGNREGA scheme in the study area.

ii) Level of income of the women members increase.

iii) Dependence of women on men started declining in the said study area.

iv) MGNREGS is one of the main sources of alternative employment for women in the study area.

v) It is observed that participation of women in decision making over family affairs is good.

vi) Women Workers' Participation in the Gram Sabha in the study area is not bad.

Conclusion

MGNREGA has positive impact on not only employment prototype of women empowerment. but also their Empowerment of women has emerged as an unintended consequence of MGNREGS. Women have benefited more as workers than as a community. Women as individuals have gained because of their ability to earn independently, due to the paid employment opportunity under

MGNREGA. MGNREGA is widely acclaimed that it provides employment, income and help the rural people to come out of the poverty. Independent and have monetised earnings increased choices reduced consumption and economic dependence. This has helped women in registering their solid involvement to the household's' income. Their increased presence in the gram sabha, the increasing number of women speaking out in the gram sabha, frequent interactions with government officials and access to banks and post offices are new On achievements. the one side. MGNREGA has positive impact on unemployment pattern of women and on the other side, said scheme reduce hungerpoverty among the rural women. Women have benefited both as individual and as Women community. are benefited individually because they are competent to earn independently, spend some money for their own needs, contribute in family expenditure etc. So we can conclude that MGNREGA is not only a scheme but also an instrument, which helps to achieve the SDGs in the rural area.

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THE UTILIZE OF COMPUTER ALGEBRA AND ITS APPLICATIONS SOLVING SOME ALGEBRAIC EQUATIONS WITH MATLAB CODE

DR. MAHESH BOHRA

Department of Mathematics Govt. Women Engineering College, Ajmer, Rajasthan, India

RISHABH CHAUDHARY

Department of Mathematics Bhagwant University, Ajmer, Rajasthan, India

&

MANOJ KUMAR

Department of Mathematics Bhgwant University, Ajmer, Rajasthan, India

Abstract

In this paper we are discusses some applications of computer algebra and its application in solving algebraic equations with Matlab code. Computer algebra is an area of computer science and mathematics where you can calculate symbols representing mathematical objects instead of their numeric values. The purpose of computer algebra systems using computers is to symbolically manipulate a formula. For example, we see that some algebraic polynomial has some common uses of expansion, factoring, root finding, or simplification. As we see, some systems also provide us with numerical computation, graphics and simulation other functionalities. We have surveyed in this paper the problem of implantation and which currently examines its available methods. We have implemented and tested using methods of algorithms for practical examples.

Keywords: Root, Algorithm, Application, Computer, Algebra, Numeric Value.

I. Introduction

A computer can be any algebraic system (CAS) with the ability to manipulate mathematical expressions similar to manual calculations of scientists and mathematical mathematicians. "Computer algebra" or "symbolic computation" is part of the development of computer

algebra systems in the late 20th century that have accelerated the work of algorithms on mathematical objects such as polynomials. Here we can divide computer algebra systems into two parts. Which is thus special and general purpose? Are devoted to a specific part of specific mathematics, such as number theory, group theory, or elementary

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mathematics teaching. The purpose of a general-purpose computer algebra system should be useful to a user working in any scientific field that requires manipulation of mathematical expressions. To be useful, a general-purpose computer algebra system must include various features such as [1]:

- Allows the user interface to enter and display mathematical formulas. And usually from a menu selection, keyboard, mouse, or stylus.
- A simplified, a rewrite system to simplify mathematical formulas,
- Here is a large library of special functions and mathematical algorithms
- A convincing-exact numeral may be required for the larger size of the integer [1],

For the needs of users, the library should provide not only simplification needs but also [3]. For example, we can see that the calculation of the largest common divisors of a polynomial can be used to simplify expressions involving fractions systematically [2].

Other fields have a range of applications, such as in algebraic geometry in polynomial systems, applications in proving automated geometric theorems, computer aided design (CAD) and computer aided manufacturing (CAM) systems, computer graphics, virtual reality investigations. We have raised this problem to implicate [4].

These are proven and implemented using the software package Matlab, some samples run to present their applicability. And other algorithms have also been suggested [5].

II. Algebraic calculations

Symbol manipulation or algebraic computation of computer algebra is an area of scientific computation that develops, analyzes, implements and uses algebraic algorithms. The characteristics of algebraic computation are as follows [6,7,8]:

- Compute with precise exact numbers no rounding.
- Computation between variables and symbols (eg, a,b).
- Computations between functions (eg sin a, cos b).
- Manipulate of formulas.
- Operations of symbolic (differentiation, factorization, integration etc.) [9,10]

Unlike numeric differentials, the following are symbolic differentials follows as [11,12]:

Computation of	Computation of
Numerical	Symbolic
Here we are computing only with numbers. e.g.: 4 + 7 = 11	Computing in algebraic number domains algebraic structures such as polynomial rings, finite fields, etc. with computing. Eg.: a+4b=6a, 1/12+1/8=5/24
Approximate	Accurate
results	representation of
E.g.: 0.86602,	results
cos(3.1415)= -	E.g.: $\sqrt{3/2}$,
133	Cos($\sqrt{3/2}$)=-1
Numeric evaluation	Symbolic
e.g.: x ² -y ² = ??	simplification
(undefined x,y)	e.g.: $x^2-y^2 = (x-y)(x+y)$

III. Manipulation of Symbolic

Commonly supported symbolic manipulations include [13]:

- statistical computation
- integral transforms
- taking some limits
- Some differences and differential equations are solved [14].
- There are some solutions to linear and some non-linear equations on different domains.
- partial and total differentiation
- Is a short expression or some standard form of simplification and assumptions including automatic simplification and simplification with constraints [15]

IV. computer algebra systems used in mathematics

- Knuth–Bendix completion algorithm[2]
- Root-finding algorithms[2]
- Polynomial factorization via e.g., over finite fields,[3] Berlekamp's algorithm or Cantor–Zassenhaus algorithm.
- Gaussian elimination[4]
- Greatest common divisor via e.g. Euclidean algorithm[5]
- Chinese remainder theorem[5]
- Diophantine equations[5]
- Hypergeometric summation via e.g. Gosper's algorithm[5]
- Limit computation via e.g. Gruntz's algorithm[5]
- Cylindrical algebraic decomposition[5]
- Padé approximant[5]
- Schwartz–Zippel lemma and testing polynomial identities[5]

V. Relationship between basic algebraic systems [1]



VI. Solving algebraic equations with matlab CODE and VI. The resultant method [1][7]

Suppose you have the system [6]

$$x^2 y^2 = 0$$
$$x - y/2 = \alpha$$

Research Explorer

and solve for *x* and *y*. First, create symbolic objects [6].

syms x y a

There are ways to output of solve [6].

 $[solx,soly] = solve(x^2*y^2 == 0, x-y/2 == a)$

The call returns the following [6].

```
solx = 0
a
soly = -2*a
0
```

Modify the equation to $x^2y^2 = 1$. The new system has more solutions [6].

 $[solx,soly] = solve(x^2*y^2 == 1, x-y/2 == a)$

Four distinct solutions are produced [6].

solx =

$$a/2 - (a^2 - 2)^{(1/2)/2}$$
$$a/2 - (a^2 + 2)^{(1/2)/2}$$
$$a/2 + (a^2 - 2)^{(1/2)/2}$$
$$a/2 + (a^2 + 2)^{(1/2)/2}$$

soly =

$$-a - (a^2 - 2)^{(1/2)}$$

- a - (a^2 + 2)^{(1/2)}
(a^2 - 2)^{(1/2)} - a
(a^2 + 2)^{(1/2)} - a

Since not specify the dependent variables, solve uses symvar to determine the variables [6].

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This way is assigning output from solve is quite successful for "small" systems. For instance, if you have a 10-by-10 system of equations, typing the following is both awkward and time consuming [6].

[x1,x2,x3,x4,x5,x6,x7,x8,x9,x10] = solve(...)

To circumvent this difficulty, solve can return a structure whose fields are the solutions [6]. For example, solve the system of equations $u^2 - v^2 = a^2$, u + v = 1, $a^2 - 2^*a = 3$.

syms u v a

 $S = solve(u^2 - v^2 == a^2, u + v == 1, a^2 - 2^*a == 3)$

The solver returns its results enclosed in this structure.

S =

struct with fields:

a: [2×1 sym] u: [2×1 sym] v: [2×1 sym]

The solutions for a reside in the "a-field" of S [6].

S.a

Sample run

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Answer = -1

Exact and approximate plot figures are shown [1].



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USUAL CANE JUICE WITH AN UNUSUAL BLEND – A CASE STUDY IN TAMIL NADU, INDIA

ANA RAJ. J

PG Scholar (Extension Education), Department of Agricultural Extension and Rural Sociology, TNAU, Coimbatore-003

FLOWRINE OLIVE. P,

PG Scholar (Master of Business Administration), Department of Agriculture and Rural Management, TNAU, Coimbatore-003

&

KARTHIKEYAN. C,

Professor (Agricultural Extension), Directorate of Extension Education, TNAU, Coimbatore-003

Abstract

With the programmes like 'Skill India', 'Stand up India' and 'Make in India', the government of India is giving more emphasis on enterprises, in particular agricultural enterprises. Enterprises and start – ups in agriculture is a rarely chosen option among the farmers and unemployed youth. This is because of the heavy risk associated with agribusiness. But here is a graduated duo, who left their highly paid job and are now engaged in sugarcane juice business, solely with their own effort and self-motivation. They have become successful with this commercial crop, in their first attempt on agribusiness. In this context, in India, cane juice is the most sought after health drink, next only to coconut which cater during summer to combat heat and sun stroke. Documenting this success story will not only guide the sugarcane farmers in starting a business venture, but also will motivate the interested youth to become Agripreneurs. This unique model of business can be very well replicated in other areas but success is assured only when there is dedication and perfection.

Keywords: Enterprise, Sugarcane juice, Agripreneurs, Dr. Karumbu and Innovation.

SUGARCANE-AN INTRODUCTION:

Sugarcane (*Saccharum officinarum*) is one of the several species of tall perennial true grasses of the tribe Andropogoneae. It is native to the warm temperate and tropical regions of South Asia and Southeast Asia. Sugarcane is the world's largest crop by production quantity. In 2012, the Food and Agriculture Organisation (FAO) estimated that sugarcane was cultivated on about 26×10^6

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hectares, in more than 90 countries, with a world-wide harvest of 1.83×10^9 tonnes.



The world demand for sugar is the primary driver of sugarcane agriculture. Cane accounts for 80% of sugar produced; most of the rest is made from sugar beet. Other than white sugar, products derived from sugarcane include molasses, bagasse and ethanol

Тор	five s	sugarcane	producers -	2015
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S.	C	Production (Thousand
No.	Country	Metric Tonnes, TMT)
1.	Brazil	739267
2.	India	341200
3.	China	125536
4.	Thailand	100096
5.	Pakistan	63750

Source: Food And Agricultural Organization (FAO) of United Nations: Economic And Social Department: The Statistical Division

CANE JUICE:

A vital component of sugarcane is Cane juice. This juice is mostly consumed immediately after crushing the cane and is not considered for value addition due to poor keeping quality. Given its popularity to beat the heat, cane juice also possess plenty of health benefits as listed below.

- i. Cures Acne.
- ii. Prevents or treats sore throat, cold and flu.
- iii. Helps in speedy recovery from jaundice.
- iv. Promotes weight loss, keeps body fit and healthy.
- v. Clears urinary flow; helps kidney to function smoothly.
- vi. Good for digestion.
- vii. Lowers body cholesterol.
- viii. Fights against **Healthy Cane juice** prostate and breast cancer
- ix. Diabetic can enjoy without fear.
- x. Provides glucose and hydrates body quickly.
- xi. Cures febrile disorders.
- xii. Aids liver functioning.
- xiii. Facilitates development of bones and teeth.
- xiv. Prevents bad breath and tooth decay.
- xv. Ensures safe pregnancy.



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ISSN: 2250-1940 (P), 2349-1647(O)

Nutritional information of 28.35 g

S.	Nutrionts	Quantity
No.	Nutrients	(g)
1.	Proteins	0.20
2.	Water	0.19
3.	Ash	0.66
4.	Fat	0.09
5.	Total carbohydrates	27.40
6.	Sugar	25.71
7.	Calcium	32.57 mg
8.	Potassium	162.86 mg

(1ounce) of cane juice

Source: indobase.com

Cane juice has about 36 calories per 100 gm of weight.

In India, cane juice is the most sought after health drink next only to coconut which cater during summer to combat heat and sun stroke. These health drinks are mostly sold by street – side vendors usually when the demand increases with the increasing mercury level. Of the two, cane juice is normally rejected by health conscious citizens because of the unhygienic crushing process and poor keeping quality. This has led to a situation in which cane juice is strike off as a health drink inspite of its innumerable health benefits.

DR. KARUMBU – A CANE JUICE SURGEON:

In order to revive the glory of cane juice, the two graduates, Manikandan and Arul Prasath (MBA and BCA resp.,) of Coimbatore, both in their late twenties, thought of a venture with cane juice. Both of them were childhood friends from a nearby village in a neighbouring district of Coimbatore.

There born a business venture in agriculture, named literally as "Dr. Karumbu" (*Karumbu* is the Tamil word

for Sugarcane). It is a first of its kind enterprise, running successfully by a duo with no agricultural background. The trade name "Dr. Karumbu" and trade design were coined and developed by them for which they had availed trademark after registration.



Actually, Arun and Manikandan started the cane juice business in 2009 as a counter in a shop in Race course, Coimbatore. But they realised that this did not add any value to their brand. So in 2011, they opened their first Dr. Karumbu outlet in Nehru Nagar, Coimbatore. In the Race course counter, they also offered fast foods. But very soon they realised that it was unhealthy and when they opened the Nehru Nagar outlet, they decided not to add any food to their menu. All the ideas and strategies followed by them are their own and none of them are implemented before elsewhere. They have also not consulted any scientific or business organisations for technical or marketing advisory. The initial investment made by them is Rs. 10 lakhs for which they had availed a loan from the bank. Now, the enterprise is running very successfully with many innovative strategies implemented mostly by trial and error method. More than academic localities, cane juice sales is a mass hit in residential areas among the aged senior citizens and fitness freaks

ISSN: 2250-1940 (P), 2349-1647(O)

The duo had established their business venture with three strong principles which are projected below.

- ➢ Health & Hygiene
- Zero impact on environment (Go Green)
- Awareness creation

PROCUREMENT & PROCESSING:



The main raw material for this enterprise is Sugarcane. After trying out with a few sugarcane varieties, they had fixed the variety PSR 00-343 as the best one for quality juice extraction. This variety is grown by the farmers of neighbouring Erode district of Tamil Nadu in large numbers. PSR 00-343, released by Philsurin is tall with fairly thin to medium, cylindrical, brownish purple stalks.

It has the advantage of very good germination and heavy tillering, resulting in high tonnage of 120 tons cane per hectare with each ton yielding 2.22 bags of 50 kilos, or a yield of 266.4 bags of sugar. This is highly resistant to smut and rust and resistant to yellow spot disease. Hence, it is procured from them with the help of middle men. While procuring, they ensure that the cane is cut properly and no damages are reported. Usually, 5 tonnes of canes are procured on weekly basis and also based on demand.

After procurement, the canes are stored in a processing unit at Koundampalayam, which is situated in the outskirts of Coimbatore. In this processing unit, peeling of outer purple coat is done manually by three trained labourers. Similar to procurement, peeling is also done based on demand and is stored in cool condition for a maximum of only two days; above which the cane will become unfit for quality juice extraction

VALUE ADDITION AND SALES:



The duo had designed a unique cane crushing machine which crushes the cane efficiently. The machine is regularly cleaned and gloves are used while the sugarcane is fed into the machine. They are employing labourers on part time basis for juice extraction and machine maintenance. The extracted cane juice is bottled in plastic bottles bearing their brand name. Only fresh stalks are used for juice extraction. No water, white sugar, preservatives or artificial flavour is added to the juice. It is 100% raw, pure, natural and unrefined extract. Since the juice is extracted from pre – cooled cane, it is not a necessary to add ice to it while serving.

Apart from this bottled cane juice, they also came up with a set of mocktails with cane

juice by blending healthy seasonal fruits like Amla, Mango, Sapota, Cucumber, Pine apple, Water melon etc., thereby avoiding fruits such as Apples and Grapes, that are not available as fresh always. All their value added products are

ISSN: 2250-1940 (P), 2349-1647(O)

very reasonably priced and named appropriately. Sales takes place for 12 hours a day from 10 in the morning to 10 in the night.

List of products of Dr. Karumbu with

price

S. No.	Products	Price / cup
	Freshly squeezed sugarcane juice Basics	
1.	Natural	
2.	Lemon	
3.	Ginger	
4.	Lemon & Ginger	
5.	Chilli	Rs. 20. 00
6.	Chat Masala	
7.	Pepper & Salt	
8.	Mint	
	Cane O Lemon delight	
1.	Lemon mint cool	
2.	Lemon Ginger cool	
3.	Lemon Ginger mint cool	Rs. 30. 00
4.	Chilli Lemon cool	
5.	Honey Lemon cool	Rs. 35. 00
	Smoothies	
1.	Banana	Rs. 30. 00
2.	Mango (Seasonal)	Rs. 40. 00
	Herbal juice	
1.	Amla	Rs. 30. 00
	Blended with Sugarcane juice	
	Mocktails	
1.	<i>Cucumber refresher</i> (Sugarcane juice, Cucumber, Lemon)	Rs. 30. 00

2.	Sweet Rasam (Sugarcane juice, Chilli, Ginger, Mint, Lemon)	Rs. 30. 00
3.	<i>Pineapple Mint</i> (Sugarcane juice, Pineapple, Mint)	Rs. 40. 00
4.	<i>Coconut cane</i> (Sugarcane juice, Tender coconut, Honey)	Rs. 40. 00
5.	Heart Warmer (Sugarcane juice, Water melon, Pomegranate, Lemon)	Rs. 60. 00
6.	<i>Cucu Pineapple cooler</i> (Sugarcane juice, Pineapple, Cucumber)	Rs. 40. 00
7.	Water melon Cucumber Punch (Sugarcane juice, Water melon, Cucumber)	Rs. 40. 00

Source: Dr. Karumbu outlet, Saibaba colony, Coimbatore.

The price list itself throws light on the uniqueness of Dr. Karumbu. Though they are selling all these cane juice blends, the most preferred among the public is raw cane juice extract. Plastic bottles with raw cane juice of small (200 ml), medium (500 ml) and large (1000 ml) size of prices Rs. 20, 40 and 70 respectively are sold akin to commercial carbonated beverages. These bottled cane juices must be consumed within a day of purchase even if it is in the refrigerator because sugarcane juice has a shelf life of only an hour and a half. Another unusual fact about this product is that consumers of any age group can have it, irrespective of diabetics. Since, all the products take up their sweetness from cane juice which has only complex sugar, no white sugar is added to them. This complex sugar in the cane juice takes a long time for breaking down into simple sugar in the body and hence does not harm diabetic patients. Whereas if white sugar is added for sweetness, it consists of simple sugar which is easily absorbed by the body and hence lead to a spike in blood sugar levels.

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CHALLENGES:

When raised queries about challenges faced by them, they responded quickly as listed below after prioritization.

- Peeling of purple coat of sugarcane by the labours occupies a major part of their costs. More than costs, it requires highly skilled labours with sumptuous time for peeling.
- The above constraint is a consequence of lack of an efficient sugarcane peeling machine. A sugarcane peeler will reduce their expenses and ensures quick supply of peeled canes to the outlets.
- Shorter shelf life of the products. This hinders the sales of their product to distant places. The shelf life of cane juice can be lengthened by adding artificial preservatives, which is against their ethics.
- Usage of plastic bottles for sales is another issue which is also against their motto of 'Go Green'.
- Since there is no organic cane producing farms known to them, they were made to procure inorganic canes for processing at present.
- Lack of awareness among the public about the benefits of cane juice. Moreover, there also prevails a misconception that just drinking a glass of juice would give them diabetes.

FUTURE PLANS:

To overcome the above listed constraints and also to meet out the rising demands, they had few plans for implementation in the future.

- Planning to give franchise of their brand name to other interested Agripreneurs.
- Opening another one or more outlets in addition to the present two outlets.

• Efficient usage of cane trash (canes after juice extraction) by sending it as an input for compost and paper cup making.

A missed out interesting fact is that both of them left their well - paid software jobs to start this business. Through this business, they are not only solving the problems of cane juice lovers, but also increasing the number of cane juice lovers. Each of the two outlets is taken care by them individually. Both the outlets are rented and employs two to three labours on part time basis. More than all these, the duo had set an example for many unemployed graduates. They stand as a figure of confidence to many new young innovators and also to farmers. This unique model of business can be very well replicated in other areas but success is assured only when there is dedication and perfection.

SUGGESTIONS:

All the strategies followed by them are based on their own research and development. Till today, they had consulted only with their closed circles. There is a possibility of utmost improvement to the enterprise if it is technically supported by Sugarcane Breeding Institute, State Department of Agricultural Marketing and Agri – business and the Tamil Nadu Agricultural University and financially supported with the schemes of Ministry of Micro, Small and Medium Enterprises (MSME).

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AN ANALYSIS OF WORKING CAPITAL MANAGEMENT IN SAIL AND RINL

N.K. PRADEEP KUMAR

Academic Consultant Department of Commerce S.V.U College of CM&CS, Sri Venkateswara University Tirupati, Andhra Pradesh – 517 502, India

Abstract

Working Capital Management has its impact on liquidity as well profitability. The impact on effectiveness and profitability of working capital is tried to find out by measuring the fluctuation in fixed assets, current assets and sales. For this, two major companies i.e. Steel Authority of India Limited (SAIL) and Rashtriya Ispat Nigam Limited (RINL) is taken. An adequate level of working capital provides a business with operational flexibility. Business with an adequate level of working capital have more options available to it, and can make its own choice as to when working capital will be used and how it will be used. On the other hand, if a firm is short of working capital, it may be forced to limit business operations, extension of credit to customers and the amount that it invests in inventory. This will adversely affect production as well as sales which in turn will affect profitability of the concern. The paper makes an assessment of management of working capital, examines the adequacy of the working capital, observes the actual liquidity and solvency position and offers the valuable suggestions for the adequacy and healthy management of working capital in these units.

Keywords: Working Capital, SAIL, RINL, Liquidity, Profitability

Introduction

Working capital is life blood of business enterprises. It has been now established that the utilization of working capital magnifies the profitability of an enterprise considerably. The firms have therefore, to optimize the use of limited available sources through efficient and effective management of working capital. Usually, working capital

management is concerned with the problems that arise in attempting to manage the current assets, the current liabilities and the inter- relationship that exists between them. The aim of working capital management is to manage the concern's current assets and current liabilities in such a way that adequate working capital is an maintained. An adequate level of

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working capital provides a business with operational flexibility. Business with an adequate level of working capital have more options available to it, and can make its own choice as to when working capital will be used and how it will be used. On the other hand, if a firm is short of working capital, it may be forced to limit business operations, extension of credit to customers and the amount that it invests in inventory. This will adversely affect production as well as sales which in turn will affect profitability of the concern.

PROFILE OF SAIL AND RINL

The Iron and steel industry in India features a strong incumbent footing as well as rapidly developing companies. The government owned Steel Authority of India with its five integrated plants and three special alloy plants is the biggest and most diverse in terms of production and acts like an operating company with an annual production of 13.5 million metric tons. SAIL is the 24th largest steel producer in the world. Rashtriya Ispat Nigam Limited (RINL) is the corporate entity of Visakhapatnam Steel plant, the most modern and successful owned by plant the government. Visakhapatnam Steel Plant – popularly known as "Vizag Steel", is one of the first shore-based integrated steel plants in India with more than 75 per cent of value added products in its basket, RINL has a wide marketing network spread across the country. In order to maintain its techno economic supremacy, **RINL** is modernizing its existing assets, which would further increase the capacity to 7.3 million tons by 2017. These two account for a quarter of production in India. They not only play an important role in the production of primary and secondary steel, but also contribute substantially to

value addition in terms of quality, innovation and cost effectiveness.

OBJECTIVES

The working capital management of the companies has been studied keeping in view the following objectives:

- To assess the inventory effectiveness; and
- To evaluate liquidity and solvency

HYPOTHESES

Null hypothesis is framed in the present study. In order to test the variables of working capital viz., inventory efficiency and current ratio the following are employed:

- (i) there is significant difference in the inventory ratio; and
- (ii) there is no significant difference in the current ratio.

RESEARCH METHODOLOGY

Sample Design

The study confines public sector units in India according to the Ministry of Steel website, Government of India, the universe for the study consists of 9 iron and steel units spread over public sector out of them 2 units are conveniently selected. The sample thereafter constitutes two public iron and steel industrial units' viz. Steel Authority of India Limited (SAIL) and Rashtriya Ispat Nigam Limited (RINL).

Data Base

The present study is based on the secondary sources. The data have been collected through various published annual reports of the SAIL and RINL and other selected official websites; books, magazines, journals have been referred and used for the purpose of the study.

Period of the study

A ten year period commencing with the financial year 2003-04 and ending with 2012-13 has been adopted.

LIMITATIONS OF THE STUDY

The present study is confined to the working capital management analysis in terms of inventory, solvency and liquidity. The figures taken from the annual reports have been rounded off to two decimals of rupees in crores. Secondary data have been collected from more than one source. Hence, there may be slight divergence between one source and another on the same variable.

TOOLS OF ANALYSIS

The data culled from different sources are synthesized, tabulated, analyzed and interpreted. Further, statistical tool t-test is applied to analyze the data.

ANALYSIS OF WORKING CAPITAL

Analysis of Working Capital has been carried out keeping in view the objectives as set for the present research paper.

INVENTORY EFFICIENCY

Inventory Turnover Ratio

The ratio establishes a relationship between costs of goods sold and average inventory of finished goods. The objective of computing this ratio is to determine the efficiency with which the converted into inventory is sales. Financial analysts have fixed a norm of eight times as an optimum turnover of inventory. A relatively low inventory may be the result of ineffective inventory management i.e. carrying too large an inventory and poor sales or carrying expired inventory to avoid writing off inventory losses against income. Normally a high number indicates greater sales efficiency and a lower risk of loss through un-saleable stock. A high inventory turnover ratio indicates that stock is fast moving. As a result inventory is effectively turned into sales. The inventory turnover ratio is shown in Table 1.

TABLE 1Inventory Turnover Ratio

		(in times)
Year	SAIL	RINL
2003-04	4.83	4.04
2004-05	4.83	3.90
2005-06	4.06	3.96
2006-07	3.76	4.43
2007-08	4.18	3.86
2008-09	4.04	2.86
2009-10	3.07	2.95
2010-11	3.32	3.14
2011-12	3.02	3.34
2012-13	2.52	2.94
Average	3.76	3.54
CSLD		3.65

Source: Compiled from the annual reports of SAIL and RINL

It is evident that in the case of SAIL and RINL, the inventory turnover ratio had reported a mixed trend of rise and fall over the study period. Further, it is noticed that the ratio also had depicted a decline during the latter years of the study period in both the firms i.e. SAIL and RINL. The highest ratio registered was 4.83 times in 2003-04, the lowest being 2.52 times in 2012-13 in SAIL. But in the case of RINL, the ratio had ranged between the highest of 4.43 times in 2006-07 and the lowest of 2.94 times in 2012-13. The ratio recorded on an average 3.76 times and 3.54 times in SAIL and RINL respectively which is more or less nearer to the consolidated average ratio of 3.65 times. It is obvious that inventory turnover ratio was less than the standard norm of eight times during entire period of study in SAIL and RINL. It indicates that the inventory was not turned into sales effectively in these companies.

DEBTORS EFFICIENCY

Debtors Turnover Ratio

The ratio establishes a relationship between net credit sales and average account receivables (average debtors).

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The ratio is intended to evaluate the ability of a company to efficiently issue credit to its customers and collect funds from them in a timely manner. There is no general norm for the receivables turnover ratio; it strongly depends on the industry and other factors. A high turnover ratio indicates a combination of a conservative credit policy and efficient management in collecting the accounts receivables, as well as a number of high-quality customers. A low debtor's turnover ratio implies inefficient management of debtors or less liquid debtors. It is also quite likely that a low turnover level indicates an excessive amount of bad debt. But in some cases, too high a ratio can indicate that the company's credit lending policies are too stringent, preventing prime borrowing candidates from becoming customers. This ratio is computed by dividing the net credit sales by the average account receivables (average debtors). The debtors' turnover ratio is presented in Table 2

TABLE 2Debtors Turnover Ratio

		(in times)	
Year	SAIL	RINL	
2003-04	13.74	63.81	
2004-05	14.85	149.29	
2005-06	14.81	44.10	
2006-07	14.66	36.59	
2007-08	12.98	97.30	
2008-09	14.29	47.72	
2009-10	11.61	54.14	
2010-11	10.27	31.67	
2011-12	9.73	31.02	
2012-13	10.08	11.99	
Average	12.70	56.76	
CSLD	34.73		

Source: Compiled from the annual reports of SAIL and RINL

In the case of SAIL, the debtors' turnover ratio had varied between 9.73 times in 2011-12 and 14.85 times in 2004-05. The ratio had shown fluctuating trend over the study period. The average

debtor turnover ratio registered was 12.70 times. It is interesting to note that the highest ratio of 149.29 times was registered in 2004-05, the lowest being 11.99 times in 2012-13 with an average ratio of 56.76 times. The ratio had remarkably slid down to 11.99 times in 2012-13 from 63.81 times in 2003-04. Between these two public sector companies the average debtors' turnover ratio was higher in RINL. Further, it may be observed that the RINL had adopted a stringent credit policy. The debtors were less liquid leading inefficient to management of debtors in the case of SAIL.

TECHNICAL AND LIQUIDITY PERFORMANCE

Current Ratio

The ratio establishes a relationship between current assets and current liabilities. The objective of computing this ratio is to measure the ability of the firms to meet its short term obligations and to reflect the short term financial strength/solvency of the firm. In other words, the objective is to measure the safety margin available for short term creditors. A higher current ratio is a clue that a company is able to pay its debts maturing within a year. On the other hand, a low current ratio points to the possibility of a firm not being able to pay its short term debt. However, too high a ratio indicate the presence of idle funds with the firm or the absence of investment opportunities with the firm and too low ratio may indicate the inadequacy of working capital which may deter the smooth functioning of the firm. The current ratio is shown in Table 3

TABLE 3 Current Ratio

		(in times)	
Year	SAIL	RINL	
2003-04	0.92	4.57	
2004-05	1.41	4.88	
2005-06	1.46	5.20	
2006-07	1.86	4.97	
2007-08	1.99	3.70	
2008-09	2.02	2.84	
2009-10	2.28	2.22	
2010-11	2.19	1.65	
2011-12	1.63	1.21	
2012-13	1.37	1.03	
Average	1.71	3.23	
CSLD	2.47		

Source: Compiled from the annual reports of *SAIL and RINL*

It is evident that the current ratio depicted wide fluctuations in the both the iron and steel companies. The current ratio in SAIL had varied between the lowest of 0.92 times and the highest of 2.28 times over the study period with an average ratio of 1.71 times. The ratio was less than the standard norm of 2:1 times in six years out of a decade under study. It indicates that the SAIL was unable to meet its currently maturing obligations during the study period barring four years. In other words, the liquidity performance was unsatisfactory in a majority of the years under report. In RINL the ratio had reported a decline which came down to 1.03 times in 2012-13 from 4.57 times in 2003-04. In RINL, the ratio was too high in the first five years of the study period. It implies that the more working funds were blocked up unnecessarily in current assets upto 2007-08. Further, it is noticed that the company was unable to repay its current liabilities out of current assets from 2010-11 onwards as the ratio was less than the standard norm of 2:1. Between these two companies, the liquidity performance of RINL was better.

ISSN: 2250-1940 (P), 2349-1647(O)

APPLICATION OF 't' – TEST FOR CURRENT RATIO

Application of 't' – test for current ratio of SAIL and RINL companies is presented in Table 4

To determine whether there was any significant variation in the current ratio between the individual iron and steel companies and the industry, the following null hypothesis was formulated and it was tested through students 't' test.

H₀: "There is no significant difference in the current ratio".

TABLE 4

Application of 't' Test For Current Ratio

Particulars	SAIL	RINL	
Mean of Current	1.71	3.23	
ratio			
SD of			
Current	0.43	1.64	
ratio			
CV of			
Current	25.15	50.77	
ratio			
'r' Current	0.82	0.27	
ratio	0.85	0.57	
Calculated	0 140505927	2 9 1 9 0 6	
value of 't'	0.140393827	2.84890	
p – value	0.882813774	0.010911*	
Table value of 't'	2.262	2.262	

Note : * *indicates Significant Source: Computed from Table 3*

It is found that there is no significant difference in the current ratio of SAIL, whereas there is significant difference in the current ratio of RINL. Hence, it is concluded that null hypotheses was accepted for SAIL but rejected for RINL.

't' – TEST FOR TESTING THE HYPOTHETICAL CURRENT RATIO

Students't' – test is applied to test the hypothetical current ratio of 2:1. The details of SAIL and RINL units are furnished in Table 5

TABLE 5

't' – Test for Testing the Hypothetical Current Ratio

SAIL	RINL
1.71	3.23
0.428280	1.641016
- 2.03138134	2.2486
2.262	2.262
	SAIL 1.71 0.428280 - 2.03138134 2.262

Note :

i) No. of observations in each case are 10 (No of years=10)

ii) Hypothetical ratio is 2:1 for all the enterprises.

iii) Degree of Freedom (N-1) or (10-1=9) for all the enterprises *Source: Computed from Table 4*

The calculated value of 't' is less than the table value of 't' at 5 per cent level of significance for current ratio in SAIL and RINL. It shows that the hypothetical current ratio holds good over the years.

QUICK RATIO

The quick ratio establishes a relationship between quick assets and current liabilities. The objective of computing this ratio is to measure the ability of the firm to meet its short term obligations as and when due without relying upon the realization of stock. The higher the quick ratio, the better the position of the company. The commonly acceptable quick ratio is 1:1 but may vary from industry to industry. A company with a quick ratio of less than one cannot currently pay back its current liabilities. It is a sad sign for investors and partners. This ratio is computed by dividing the

quick assets with the current liabilities. The quick assets ratio is presented in Table 6

TABLE 6 Quick Ratio

		(in times)
Year	SAIL	RINL
2003-04	0.58	3.99
2004-05	0.99	4.00
2005-06	0.88	4.43
2006-07	1.25	4.39
2007-08	1.47	3.15
2008-09	1.42	2.07
2009-10	1.75	1.65
2010-11	1.54	0.95
2011-12	0.90	0.74
2012-13	0.66	0.66
Average	1.14	2.60
CSLD		1.87

Source: Compiled from the annual reports of SAIL and RINL

It is obvious that the quick ratio recorded on an average was 1:14 times and 2.60 times in SAIL and RINL respectively over the study period. The highest quick ratio of 4.43 times in 2005-06 was recorded in RINL, while the lowest of 0.58 times in SAIL in 2003-04. The liquid ratio was too high in six years out of ten years in RINL. It implies that more working funds were blocked up in current assets even after excluding the inventory from total current assets. The situation had resulted in under-trading in RINL. The liquid ratio was satisfactory on an average in SAIL as the ratio had just exceeded the standard norm of 1:1.

ACTUAL LIQUIDITY AND SOLVENCY POSITION

Actual liquidity position of an enterprise mostly depends on its ability to pay off its current financial obligations from the net cash flows generated from its own operations but not by current assets alone, when it is being run. It is understandable that a manufacturing concern is unable to dispose of its current assets due to either lack of demand in the

market or current assets lack the quality of conversion into cash at a given point of time. The higher the cash flow ratio, the greater the degree of liquidity and solvency of a firm and vice-versa. Hence, the relationship of current liabilities with the net cash flows may be measured by computing net cash flow to current liabilities.

Net Cash Flows to Current Liabilities

The ratio of net cash flows to current liabilities can be computed as follows:

Net Cash Flows to Current Liabilities = <u>Net Profit + Non-cash expenses</u> x 100 Current Liabilities

The net cash flows to current liabilities ratio is portrayed in Table 7

TABLE 7 Net Cash Flows to Current Liabilities

	(111)	percentage)
Year	SAIL	RINL
2003-04	29.67	160.53
2004-05	63.72	207.75
2005-06	31.25	102.55
2006-07	49.93	78.65
2007-08	48.39	71.65
2008-09	28.12	33.94
2009-10	45.83	20.94
2010-11	36.32	16.34
2011-12	28.80	14.40
2012-13	12.83	4.64
Average	37.49	71.14
CSLD	54	.32

Source: Compiled from the annual reports of SAIL and RINL

It is evident from Table 7 that an analysis of individual public sector companies reveals that the net cash flow to current liabilities ratio was positive throughout the period of the study in SAIL and RINL. The net cash flow to current liabilities ratio had remarkably slashed down from 29.67 per cent to 12.83 per cent in SAIL and from 160.53 per cent to a mere 4.64 per cent in RINL over the study period. It indicates that the actual liquidity performance had deteriorated more particularly in RINL during the later years of study. It may be noted that the ratio had exceeded the cent per cent norm in the three years out of ten years in RINL.

CONCLUSION

The following are the conclusion and suggestions offered for the better financial health of sample companies.

- Inventory turnover ratio was less than the standard norm of eight times in SAIL and RINL. It indicates that the inventory was ineffectively turned into sales. Consequently, there is a high risk of loss due to unsalable stock.
- In RINL, liquid ratio was too high in six out of ten years. It implies that more working funds were blocked up in current assets. The situation had resulted in undertrading. Liquid ratio is better in the SAIL as it had exceeded the standard norm of 1:1.
- In RINL, the net cash flow to current liabilities ratio had exceeded the cent per cent norm in three out of ten years. The actual liquidity performance was relatively better in RINL. Analysis purports that the coverage of current liabilities was satisfactory in both these units.
- It may be further suggested that inventory efficiency results can be strengthened if inventory methods shall be scientifically specified so as to reduce the risk of loss due to unnecessary blocking up of working funds.
- ABC analysis (Selective Inventory Control) shall be carried out for all the components of inventory.
- JIT shall be followed to reduce the blocking up of working funds in inventory. Inventory methods shall be scientifically specified so as to reduce the risk of loss due to

ISSN: 2250-1940 (P), 2349-1647(O)

unnecessary blocking up of working funds as already pointed out.

- SAIL shall improve liquidity performance either by increasing current assets or reducing current liabilities.
- RINL shall minimize working funds in current assets to the possible extent.

These suggestions if implemented working capital performance of public sector units' i.e. Steel Authority of India Limited and Rashtriya Ispat Nigam Limited shall be improved to desired levels.

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A STUDY ON IMPACT OF E- MARKETING ON CONSUMER BEHAVIOR TOWARDS SUPER MARKET WITH SPECIAL REFERENCES TO KANYAKUMARI DISTRICT

R.DHARMARAGINI

Head Department of Commerce & Research centre, Vivekananda College, Agasteeswaram

Abstract

The use of E- marketing, internet marketing, social media marketing increases day by day with progress in the field of technology. The e-market plays a significant role in increasing the sales of various products and services. Apart from that, it too lays down the impact on the mind of the customer so as to purchase the product. The purpose of study is to explore the value of e-marketing on consumer behavior towards supermarket with special references to Kanyakumari district. A well structured interview schedule is used to collect primary data and sample size is 200 respondents on which further weighted average ranking technique and chi square test is used for analyzing the buying behaviour. The findings of the study reveals that varieties of goods is important factor it is followed by attraction of offer, comfortable of distance, brand name and vehicle parking is least factor which effect customer to visit free margin market.

Keywords: E-Marketing, Customer Behaviour and Super Market.

Introduction

Technology evolution is changing our world faster than ever before. The impact on business and especially the marketing methods to be precise has been huge. Trends have been changing from traditional marketing methods to new ways where digital channels are now playing the key role. Moreover, there has been a huge shift from the outbound marketing methods to the inbound marketing strategies. In the era of globalization and privatization emarketing is a great revolution. Over the last few decades maximum business organizations are running with technological change. E-marketing is the use of technology for better marketing performance. And retailers are devising strategies to meet the demand of emarketing; they are busy in studying consumer behavior in the field of emarketing, to see the consumer behavior towards e-marketing.

OBJECTIVES:

1. To find out the most important factors considered by respondents during effect of e-marketing.

2. To analyze the impact of Emarketing on consumer behavior towards super market.

HYPOTHESIS:

1. "There is no significant impact of Emarketing between the respondent's social factors towards the selection of super market."

METHODOLOGY:

The study is complied with the both primary and secondary data. The researcher has selected the respondents on the basis of random sampling method. ISSN: 2250-1940 (P), 2349-1647(O)

Respondents are selected equally from Kanyakumari district to the different status of the society as per random method. The sample size is determined 200 respondents. There are different types of statistical tools for analysis the collected data the important tools used in the present study are such as tables, percentage weighted average methods, and SPSS.

ANALYSIS AND INTERPRETATION:

Table.1

Most important factor considered by respondents during effect of E-marketing

Factors	Weight	5	4	3	2	1	Total	Weighted	Rank
	C							Average	
Attraction of	Respondents	82	36	40	30	12	200	24.8	II
offer	Weight	410	144	120	60	12	746		
Varieties of	Respondents	106	30	36	26	1	200	27.06	Ι
Goods	Weight	530	120	108	52	1	812		
Brand Name	Respondents	68	40	52	36	4	200	24.4	IV
	Weight	340	160	156	72	4	732		
Comfortable of	Respondents	91	34	22	32	21	200	24.6	III
distance	Weight	455	136	66	64	21	741		
Vehicle Parking	Respondents	62	54	38	32	14	200	23.93	V
	Weight	310	216	114	64	14	718		

Source: Computed data

The table.1 shows that varieties of goods is important factor it is followed by attraction of offer, comfortable of distance, brand name and vehicle parking is least factor which effect customer to visit super market.

Social factors and Effect of E-Marketing on Selections of Super Market

Ho: "There is no significant impact of Emarketing between the respondent's social factors towards the selection of super market."

	Chi-Square Value		Degree of	Null Hypothesis Accepted
Factors	Calculated Value	Table Value	Freedom	or Rejected
Gender	13.79	5.99	2	Rejected
Age	18.26	9.48	4	Rejected
Marital status	5.37	7.81	3	Accepted
Education	12.99	9.48	4	Rejected
Occupation	13.61	9.48	4	Rejected
No.of earning	6.12	7.81	3	Accepted
members				

Table.2
Chi-Square Test Results

Source: Computed data

The above table shows that the social factors like gender, age, education and occupation, the calculated value of chi square test is greater than the table the null hypothesis is rejected. value. Hence it is inferred that gender, age, education and occupation influence the E-Marketing. Hence there is significant impact between E-Marketing and the respondents' gender, age, education and occupation towards the selection of super market. The social factors like marital status and number of earning members, the calculated value of chi square test is less than the table value, and the null hypothesis is accepted. Hence it is inferred that marital status and number of earning members does not influence the E-Marketing. Hence there is no significant impact between E-Marketing and the respondents' marital status and number of earning members towards the selection of super market.

FINDINGS:

The study express that varieties of goods is important factor it is followed by attraction of offer, comfortable of distance, brand name and vehicle parking is least factor which effect customer to visit super market.

- \clubsuit The study shows that the social factors like gender, age, education and occupation, the calculated value of chi square test is greater than the table value, the null hypothesis is rejected. Hence it is inferred that gender, age, education and occupation influence the E-Marketing. Hence there is significant impact between E-Marketing and the respondents' education gender. age. and occupation towards the selection of super market.
- Marital status and number of earning members does not influence the E-Marketing. Hence there is no significant impact between E-Marketing and the respondents' marital status and number of earning members towards the selection of super market.

CONCLUSION:

The study concluded that, speed and the extent of information that can be gained from e-marketing there are a number of significant is advantages to this type of marketing those businesses must

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take. The technology driven approach of e-marketing leaves certain businesses vulnerable and overly -dependent upon technology. It plays an significant role in influencing customer preference and choice towards various brands in super market.

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