

# INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, IT & MANAGEMENT

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**NEED/IMPORTANCE OF THE STUDY**

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**FINDINGS**

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## ROLE OF IT IN COMMERCE EDUCATION IN INDIA: A KEY TO ACHIEVE INCLUSIVE GROWTH AND SUSTAINABILITY

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### ABSTRACT

*The higher education in India is passing through a challenging phase in terms of expansion, quality, and access. To meet these challenges, the University Grants Commission (UGC) called for a major thrust for expansion of higher education and promotion of greater regional and social equity in the 11th FYP. The education whether it is of commerce education, science education and art education, it is significant for the inclusive growth and Sustainability. But in real terms we can't categorize education only on these criteria's. It is a wide term in itself and includes so many disciplines and the limit is endless. The dimension of education not only limited to school, college, university and higher level educational institutions but it can be anywhere and everywhere. IT comes as a digital revolution in the field of higher education. In today scenario, IT plays a very important role in bridging the gap between the users of education and providers of education, which plays a very important role in achieving the broad objective of 11<sup>th</sup> five year plans and the 12<sup>th</sup> five year plans. In today's technology-driven world, lack of IT knowledge limits employment opportunities. IT inclusion in commerce education is the key to accomplish the very vision of 11<sup>th</sup> five year plan. It makes inclusive growth and sustainability possible. It has a positive impact on our education system. The education acts as driver and enabler for the sustainable development. IT plays a very important aspect in meeting the challenges of education "reaching the unreached" thus makes it essential.*

### KEYWORDS

Education, Information Technology, Inclusive Growth, Sustainability, 11<sup>th</sup> Five Year Plans.

### INTRODUCTION

Economic growth is the only tool which enables qualitative change in the society. An Educated population well equipped with knowledge and skills supports economic growth and also for the growth to be inclusive. An educated youth can better exploit the employment opportunities which results in an economic growth. In order to build a robust higher education system for sustain rapid economic growth, there is an urgency to use IT enabled tools. To ensure quality in higher education system, the IT should be harnessed. In terms of commerce education which is very useful to understand the functioning of current world of business. In other words commerce education is business education. For inclusive growth and sustainability, commerce education plays a very important role. The quality of commerce education determines the state of India Higher education system. IT inclusion in commerce education is the need of the time. In an ever changing business environment commerce education plays a very important role to understand the dynamics of the modern world through or by the use of IT in Commerce Education. IT in Commerce Education is the emerging dimension before Indian Higher Education System. Information technology and mobile technology have forced Indian higher education sector for a change in an educational curriculum and the system for an efficient use of IT tools for teaching and learning. In order to fulfill the growing demand of knowledge economy IT integration into Commerce education is essential. For the sustainable development and inclusive growth only education can make it possible.

### OBJECTIVES OF STUDY

- To study the Role and Current Status of Commerce Education in India.
- To study the Role of IT in Commerce Education from the perspective of Inclusive Growth and Sustainability.
- To provide the methods of IT Integration into Commerce Education.
- To find out the Challenges behind use of IT and the Strategic Steps for its proper implementation.
- To highlight the IT initiatives in 12<sup>th</sup> Five Year Plans.
- To provide Recommendations and Suggestions for the policy makers and heads of the institutions.

### ROLE OF COMMERCE EDUCATION

Commerce Education is also refers to Business Education. Commerce education is that area of education which develops the required knowledge, skills and attitudes for the handling of Trade, Commerce and Industry. Chessman defined Commerce Education as – *Commerce Education is that form of instruction which both directly and indirectly prepare the business man for his calling.* As a branch of knowledge, Commerce education imparts knowledge of different functional areas of business which is requisite for trade, commerce and industry.

The role and relevance of commerce education has become more important due to significant changes in the needs and demands of the business society. Commerce education is also essential to meet the growing skilled manpower needs of an industry. The Commerce education plays an essential role in today's dynamic business environment. The rapid trend of globalization and technological changes have made difficult for organizations to survive in the competitive world. As a result the importance of Commerce education has been increased many folds. It is the commerce education which creates a tomorrow's leaders, managers, and professionals. By regular research and innovation in teaching and research techniques in commerce education, it will lead to the development of society as well as nation.

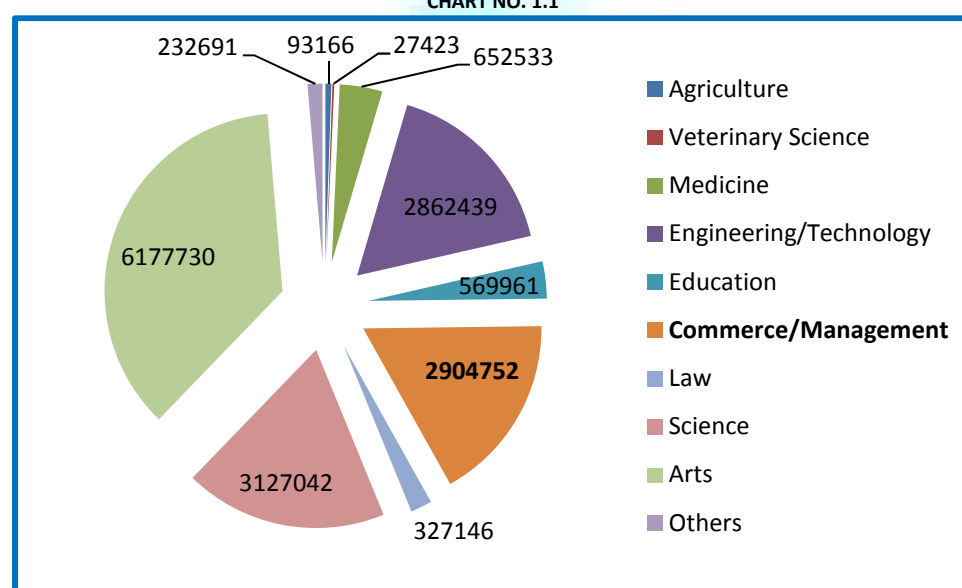
# CURRENT STATE OF COMMERCE EDUCATION IN INDIA IN TERMS OF STUDENT ENROLMENT – FACULTY WISE

TABLE NO. 1.1: FACULTY-WISE STUDENTS ENROLMENT IN HIGHER EDUCATION 2010-11 \*

Agriculture	93166
Veterinary Science	27423
Medicine	652533
Engineering/Technology	2862439
Education	569961
<b>Commerce/Management</b>	<b>2904752</b>
Law	327146
Science	3127042
Arts	6177730
Others	232691
Note: * Provisional	

Source: Higher Education in India at a Glance, February, 2012, University Grants Commission, New Delhi, India.

CHART NO. 1.1



## WHAT IS ICT EDUCATION?

ICT is an acronym that stands for **Information Communications Technology** as defined, for the purposes, as a “diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information.” These technologies include computers, the Internet, broad casting technologies (radio and television), and telephony. ICT Education is the education that concerned with the use of Information and Communication Technology.

## ROLE OF IT IN COMMERCE EDUCATION IN INDIA

Commerce is one of the most popular courses in Higher education in India. Commerce education opens so many career options for young graduates in India. With a growing emphasis on information technology is forcing Indian higher education system to include IT in a course curriculum. Integration of information and communication technology (ICT) into teaching and learning is essential for interaction between learners and educators in commerce education. Commerce educators facilitate learning in accounting, economics and business studies subjects. ICT can be used to advance cognitive skills such as comprehension, reasoning, problem-solving and creative thinking (Department of Education, 2003). ICT is expected to improve educational outcomes and enhance and improve the quality and effectiveness of teaching and learning (Jaffer, Ng'ambi & Czerniewicz, 2007). It makes Knowledge and information widely available, Improve research quality and Ensure effective governance both at the institutional and systemic level.

The main objective behind ICT inclusion in commerce education is to move from traditional Teacher directed approach to Student centric approach of teaching and learning. ICT in Education is the base of development of knowledge society upon which the superstructure of modern society depends. It is also adds value to the processes of learning, and in the organization and management of Higher Education Institutions. It also acts as a driving force behind innovative projects and Research & Development. ICT determines the success of modern corporations. A well trained staff adequately equipped with ICT tools can better exploit market opportunities. It also enables handling of dynamic situations if arises in internal as well as external environment of business by taking decisions based on critical thinking. ICT is one of the key skills needed to access and enrich learning of all kinds. In Today world of business, it is very vital for an individual to be an ICT Literate in order to take the advantage of business conditions.

## WHAT IS INCLUSIVE GROWTH?

- “Inclusion” should be seen as a process of including the excluded as agents whose participation is essential.
- Growth is inclusive when it creates economic opportunities along with ensuring equal access to them.

## EDUCATION FOR SUSTAINABILITY

Sustainability refers to meeting the requirements of present without compromising the potential for the future. Education is an essential tool to achieve sustainability. For sustainable development, sustainable education system is required. ICT integration into Higher education system makes it attainable. An ICT tool has a potential to accomplish the very vision of eleventh five year plan and twelfth five year plan of higher education. The result of that, there is a shift of quantitative focus on education to qualitative aspects of education. Due to Inadequate access to higher levels of learning is resulting in a knowledge divide that includes the ‘e-literacy’ gap. The ‘e-literacy’ gap is also prevalent in between genders, where girls generally have a lower literacy rate. ICT enables to fill the e-literacy gap. In a today technology driven world, Where ICT knowledge is very important to take the advantage of employment opportunities.



### IT-ENABLED SUSTAINABLE DEVELOPMENT FOR INCLUSIVE GROWTH

There is an urgency to recognize the significance of sustainable development. By the following ways sustainability can be achieved:

- By make efficient use of energy and resources.
- It should be integrated as a part of educational programme.
- Long term approach is required in order to attain sustainability.
- There is a need to use sustainable IT tools.
- Awareness about sustainable use of IT is necessary tool to address the issue of sustainability.
- It also allows researchers to better study the local and global impacts of climate change.
- For sustainability, Teachers, students, staff should be equipped with knowledge and competencies.
- Environmental Issues and Applied Environment Education should be integral part of our Higher Education System.
- By or with the cooperation and interaction among all stakeholders on the issue sustainability.
- IT should be applied in such a way that it leads to by awareness changing the mindsets of an individual and thus influencing their lives.
- It also facilitates empowerment of people by enabling them contribute towards a sustainable future.

### ICT INTEGRATION IN COMMERCE EDUCATION

ICT Integration in commerce education can be possible in the following manner:

- ICT as a subject
- ICT as a tool to support subjects
- ICT as an administrative tool
- ICT as a medium of knowledge exchange

### BENEFITS OF IT IN COMMERCE EDUCATION

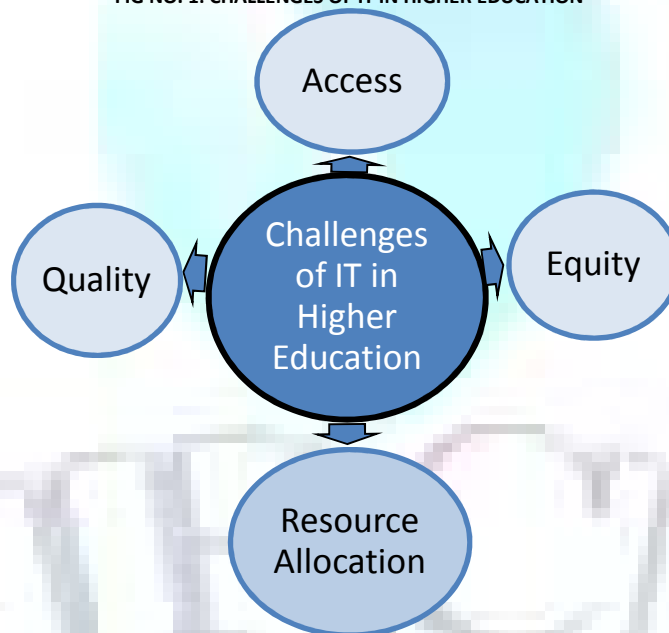
IT has proved to be one of the most effective modes of dissemination of knowledge in the formal, non-formal, and informal sectors of education.

- IT in Commerce Education is a part of **Innovation and Transformation Process** in Higher Education in India and around the world.
- IT can be used as a **potent tool** for **Teaching, Learning and Research**.
- IT integration into Commerce Education also deals with the fundamental challenges of **Access, Equity and Quality**.
- **Through E-Learning**-.E-Learning supplements the conventional delivery of instructions in the class-room and helps in quality improvement of content using ICT tools i.e. Computers, Multimedia and the Web. E-Learning facilitates the learning and delivery process for both the teachers and students.

### CHALLENGES OF IT INCLUSION IN HIGHER EDUCATION

There is a significant challenge those policymakers and planners, educators, education administrators, and other stakeholders need to consider for IT Inclusion in terms of educational policy and planning, infrastructure, language and content, capacity building, and financing.

FIG NO. 1: CHALLENGES OF IT IN HIGHER EDUCATION



- **EDUCATIONAL POLICY**
  - To re-view teaching practice,
  - The curriculum,
  - The role of teachers,
  - and the ways in which IT can be incorporated into course curriculum to maximize educational outcomes.
- **INFRASTRUCTURE**
  - IT comes up as a challenge in an existing educational infrastructure for improvement by new and emerging technologies.
  - High cost of purchasing, installing, operating, maintaining and replacing ICTs.
  - Non-availability of Continuous Electricity.
  - Network Connectivity is also one of the major challenges behind use of ICT.
  - There is a need of technical infrastructure as well as educational infrastructure.

#### • LANGUAGE AND CONTENT

IT in higher education are being used for developing course material; delivering content and sharing content; communication between learners, teachers and the outside world; creation and delivery of presentations and lectures; academic research.

#### • CAPACITY BUILDING

Capacity building challenge involves or covers up a number of aspects in relation to training and development of teachers for or to support content development. It highlights the important issue that, without adequate capacity building, even well-designed policies and the most sophisticated technologies would not be able to achieve the desired results.

#### • FINANCING

This challenge involves financing the cost of IT. This includes capital investment in large IT projects. In order to achieve the advantage of economies of scale, there should be an effective formulation of strategy for proper management of funds.

By Considering all these factors lead to effective use of IT in Higher education furthering addresses the fundamental challenges of Access, Equity, Quality and Resource Allocation.

### STRATEGIC STEPS FOR ICT ENABLED COMMERCE EDUCATION

- Analysis of current status of educational system
- ICT integration must be in accordance with institutional practices
- Need to identify the drivers and barriers to ICT related to curriculum and pedagogy, infrastructure, capacity-building, language and content, and financing.
- Defined Clear-cut objectives
- Setting of time bound targets
- Mobilization of required resources
- The identification of stakeholders and the harmonizing of efforts across different interest groups.

### THE INITIATIVES IN THE AREA OF QUALITY AND EXCELLENCE IN HIGHER EDUCATION

#### ICT INTEGRATION

Existing Scheme (11 <sup>th</sup> Five Year Plan)	New Scheme (12 <sup>th</sup> Five Year Plan)
ICT infrastructure & tools for Universities	Digital Repository in University & College Libraries
Automation of University Libraries	Internet Connectivity and NKN Portals to Universities and Colleges
Electronics submission of Thesis (INFLIBNET)	e-content Development
	Digitization of Doctoral Theses

Source: Inclusive and Qualitative Expansion of Higher Education 12<sup>th</sup> Five-Year Plan 2012-17, UGC, New Delhi

TABLE NO. 1.2: AREA WISE BUDGETARY PROVISIONS

S.No.	Sector/Schemes	Proposed Allocation ( in Crores)
1.	Enhancing Aggregate Access	1,44,350
2.	Equity	16,260
3.	Quality and Excellence	11,140
4.	Research Projects	5,350
5.	Relevance and Value Based Education	1,240
6.	ICT Integration	4,450
7.	Governance & efficiency improvement	1,950
	<b>Total Projected Requirements</b>	<b>1,84,740</b>

Source: Inclusive and Qualitative Expansion of Higher Education 12<sup>th</sup> Five-Year Plan 2012-17, UGC, New Delhi

### IT INITIATIVES BY DEPARTMENT OF INFORMATION TECHNOLOGY, GOVERNMENT OF INDIA ARE AS FOLLOWS:

#### NATIONAL KNOWLEDGE NETWORK

The Government's decision to set up National Knowledge Network was announced in the Budget Speech, 2008-09. An initial amount of Rs. 100 crore for FY 2008-09 was allocated to the Department for establishing the National Knowledge Network. Government has approved the project on Establishment of National Knowledge Network in March, 2010 with an outlay of Rs. 5990 Cr. over a period of 10 years. National Informatics Centre (NIC) is the implementing agency.

#### OBJECTIVE

The objective of the National Knowledge Network (NKN) is to interconnect all institutions of higher learning and research with a high speed data communication network to facilitate knowledge sharing and collaborative research.

#### CURRENT STATUS

As on 31st October, 2012, around 885 institutions (This includes 266 links to Institutions under NMEICT, MHRD which have been migrated to NKN) of higher learning and advanced research have been connected to the network and 61 virtual classrooms have been set up.

#### E-LEARNING

E-Learning is one of the thrust areas identified by the Department for imparting education using Educational Tools and Communication Media. The main thrust of the E-Learning programme is to effectively integrate E-Learning methodology and approach with the conventional classroom system to maximize the benefits flowing from the traditional education system, increase its reach to more and more learners and spread E-Learning from teaching of IT related subjects to other subjects in the curricula.

A number of academic Institutions and R&D Labs have been financially supported by DIT to carry out R&D projects in the field of e-Learning.

#### IT FOR MASSES

"IT for Masses" is a Plan Scheme of DeitY. It was introduced in the Tenth Five Year Plan, continued in the Eleventh Five Year Plan, retained in the Twelfth Five Year Plan. The Working Group on Information Technology Sector for Twelfth Five Year Plan (2012-17) has considered and recommended continuance of the scheme in 12th Plan under 'e-Inclusion' as thrust area.

#### OBJECTIVE

The objective of this scheme is to Initiate / promote activities in ICT for focus groups and areas for inclusive growth of IT sector (**Outcome Budget 2012-13 of DeitY**).

#### STRATEGY

Some of the components of e-Inclusion are:

- Using ICT for Capacity Building
- Development of entrepreneurial skills in the identified target group

- Creation of e-Inclusion centres for development and deployment of IT products and solutions for differently-abled persons
- Conducting studies and advocacy of e-Inclusion initiatives
- Content creation in Indian languages
- Develop appropriate systems and software for applications in areas like health, education, training and governance, which will facilitate inclusive development

### TOWARDS ACHIEVING THESE OBJECTIVES PROJECT PROPOSALS ARE INITIATED IN THE FOLLOWING AREAS:

Training, Infrastructure Development, Capacity Building

#### TARGET GROUPS

SC, ST, Gender, Minorities, Differently-abled, Senior citizens.

#### TARGET AREAS

North East Region, Blocks & Districts having more than 40% SC / ST population and Backward Districts.

#### TWELFTH PLAN ALLOCATION & EXPENDITURE

Year	GBS Approved (B.E.) (Rupees in Crore)	GBS Approved (R.E.) (Rupees in Crore)	Actual Expenditure (Rupees in Crore)
2012-13	16.94	7.06	7.02

Source : Report of the Working Group on IT Sector for Twelfth Five Year Plan (2012-17)

Note: From 2013-14 onwards, IT for Masses Programme will be merged with Manpower Development Scheme of the Department.

TABLE NO. 1.3: DEPARTMENT OF ELECTRONICS AND INFORMATION TECHNOLOGY – ANNUAL PLAN 2013-14 (RS. CRORE)

S.No.	Schemes	Budgetary Support
<b>I. e-Government</b>		
1.	Electronic Governance	700*
2.	National Informatics Centre (NIC)	830.00
<b>II. e-Learning</b>		
3.	National Knowledge Network	360.00
4.	Manpower Development (Incl. Skill Dev. in IT & IT for Masses)	150.00
5.	NIELIT (erstwhile DOEACC)	10.75
6.	Education & Research Network (ERNET)	0.01
7.	Technology Development for Indian Languages (TDIL)	35.00
8.	Facilitation of Setting-up of Integrated Townships	0.10
<b>III. e-Security</b>		
9.	Cyber Security (including CERT-In, IT Act)	54.37
10.	Controller of Certifying Authorities (CCA)	6.00
<b>IV. e-Industry (Electronics Hardware)</b>		
11.	Promotion of Electronics/IT Hardware Manufacturing	100.00
12.	Standardisation Testing and Quality Certification (STQC)	120.00
<b>V. e-Industry (IT-ITeS)</b>		
13.	Software Technology Parks of India (STPI) & EHTP	52.50
<b>VI. e-Innovation/R&amp;D</b>		
14.	Centre for Development of Advanced Computing (C-DAC)	205.00
15.	Technology Development Council Projects (incl. ITRA)	85.00
16.	Micro-electronics and Nano-Technology Development Programme	100.00
17.	Society for Applied Microwave Electronics Engineering and Research (SAMEER)	50.00
18.	Convergence, Communication & Strategic Electronics	30.00
19.	Media Lab Asia	26.27
20.	Component & Material Development Programme	30.00
21.	R&D in Medical Electronics & Health Informatics (erstwhile Electronics in Health & Telemedicine)	10.00
<b>Others</b>		
22.	Secretariat - Economic Services	45.00
<b>Grand Total</b>		<b>3000.00</b>

Source: Electronics and Information Technology, Annual Report 2012-13, Department of Electronics and Information Technology, Ministry of Communication and Information Technology, Govt. of India.

\* includes EAP component of `100.00 crore

### IT INITIATIVE BY MINISTRY OF HUMAN RESOURCE DEVELOPMENT, GOVERNMENT OF INDIA

#### SPOKEN TUTORIAL PROJECT

The Spoken Tutorial project is the initiative of the "Talk to a Teacher" project of the National Mission on Education through Information and Communication Technology, launched by MHRD, Govt of India to promote IT literacy through Open Source Software. The Spoken Tutorial project is being developed by IIT Bombay for MHRD, Govt. of India.

#### OBJECTIVE

The objective is to take software education to the masses and to Bridge the Digital Divide. The use of spoken tutorials to popularize software development and its use will be coordinated through the website [spoken-tutorial.org](http://spoken-tutorial.org). The aim is to conduct free of cost software training workshops using spoken tutorials and give certificates to those who pass an online test.

#### TARGET GROUP

The target group is the community at large, including school children, college students, working professionals, retired professionals, housewives, teachers, trainers, research scholars, software users and developers.

### CONCLUDING REMARKS

In a today technology driven world, IT should be harnessed to enable quality and expansion of education. IT played a pivotal role in inclusive growth and sustainability in Commerce Education in India, by the use of IT enabled tools and techniques in education. With the growing use of IT in all aspects of work and

life, there is a need for IT-enabled Commerce education in order to meet the challenges behind higher education of quality, equity, access and excellence. It makes higher education more affordable and accessible by reducing cost per student. It also increases enrolments, enhancing students' mobility and enhancing flexibility of programs. It also creates competition among higher educational institutions to improve quality by application of IT tools and techniques. IT integration into commerce education is the driving force behind growth to be inclusive and capable of being sustained in the long run. IT based commerce education is the emerging dimensions before higher education in India in terms of issues related to finance, infrastructure, connectivity, development of course curriculum, course materials, preparation of lectures and presentation, communication, cooperation, administration, research and innovation. For professional development in higher education, IT in commerce education is essential in current changing business environment. To meet the demands of quality education for all, IT in education is vital.

## RECOMMENDATIONS

1. For successful implementation of ICT in Commerce education, there is a need to empower teachers about its importance and features rather than acquiring necessary equipments- hardware and software.
2. Successful ICT integration depends on many factors such as policies and actions of Higher education ministry,
3. High rate of youth unemployment is a key challenge among various developing countries to cope with this, there is an urgent need to develop our youth with adequate education and skills required to face employment challenges.
4. In a knowledge society, demand for knowledgeable and skilled workforce is of high concern not at the national level but at the global level
5. Skills development is another important area in which ICT could be used effectively.
6. International cooperation is also required for knowledge sharing and capacity building.
7. Effective governance should be ensured both at the institutional and systemic level.
8. There is a need to re-build human resources in order to attain required level of competence.
9. To achieve excellence in teaching and research, ICT should be employed.
10. Environmental policies have to be designed to ensure that ICT applications make a beneficial contribution to environmental outcomes, and, at the same time, suppress rebound effects.'
11. For expansion and quality improvement, there is a requirement to build strong higher education system with an ample scope for growth and development.
12. To achieve sustainable ICT in Higher education, Smart Application of ICT tools to avoid Carbon Emissions.
13. IT can be served as an important tool by reaching to large number of learners and facilitate new ways of learning and understanding that will be required to meet the challenges of sustainability.
14. The very essential step to achieve sustainability is to first educate the masses about the sustainability, problems such as Natural Resource Depletion, Increasing Pollution, Poverty and so on, the opportunities and scope for innovation and research and also empowering them to act in a responsible way towards a sustainable future.
15. There is also a need to assess the learning outcomes based on ICT enabled learning and to determine whether it will be fruitful to educate the masses to live sustainably.
16. ICT pedagogical methods should be designed in such a way to contribute towards sustainable education.
17. Merely by educating people is not sufficient to attain inclusive growth and sustainability, A New Vision on Higher Education is required to achieve sustainable development with a proper and effective policy for its implementation.

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# AGRIBUSINESS POTENTIAL IMPACT OF HORTICULTURE CROPS: AN AGRICULTURAL ECONOMIC ANALYSIS OF CASHEW NUT IN TAMIL NADU

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## ABSTRACT

Cashew, a perennial dry fruit crop grown in laterite, red and coastal sandy soils of the tropical and subtropical tracts, is a native of South America. In order to study the marketing aspects of cashew, the study covered five village traders, five processors, five commission agents, one Regulated market one Cooperative Marketing Society (Sathva) who were engaged in marketing of cashew in the study area. All these market functionaries were interviewed to gather the required information. The following tools of analysis were used to analyse the samples. They viz., Price Spread Analysis, Sum-of-Average Gross Margin Method, Farmer's Share in Cashew Processor's Rupee, Export Competitiveness of major cashew export was assessed the methods like the Nominal Protection Coefficient (NPC) of Cashew, etc. Majority of the cashew farmers sold their produce through village traders. Irrigated cashew growers preferred to sell through village traders (76 per cent) than through commission agents (3 per cent), in contrary to the dry cashew growers. The net prices realized by the sample farmers accounted for 84.65, 93.66, 86.82 and 97.74 per cent of price paid by the processor in the respective channel. The price spread in channels I, II and III were Rs. 605.45, Rs.180.00, Rs.505.25 respectively. Farmers' share in processor rupee was higher in channel IV (Rs. 97.74) and low in channel I (Rs. 84.65). The marketing channel IV through which the cashew grower directly sold his produce to the processor was considered to be more efficient when compared with all other marketing channels. The NPC of cashew kernel exports during 2008-09 would reveal that NPC value under exportable hypothesis was 0.96.

## KEYWORDS

Cashew nut, Price Spread, Marketing Channel, Export Competitiveness, Nominal Protection Coefficient (NPC).

## INTRODUCTION

Cashew, a perennial dry fruit crop grown in laterite, red and coastal sandy soils of the tropical and subtropical tracts, is a native of South America. However, cashew is also grown in the most fertile-forest soils rich in organic matter found in the slopes of Eastern Ghats. Today, India has become the top producer, processor and exporter of cashew in the world with an area of 8.93 lakh hectares and it produces 6.95 lakh tonnes of raw nuts.

### GLOBAL CASHEW TRADE

Cashew ranks third in world production of edible nuts that are traded globally. World-wide trade in cashew exceeded US\$2 billion and the demand for edible cashew nut and its by products continues to be increasing. Of the total world supply, 1.1 lakh tonnes are traded in the international markets of which India (51 per cent) and Brazil (31 per cent) were the major cashew exporters.

### EXPORT OF CASHEW BY INDIA

Export of cashew kernels was 1.14 lakh tonnes valued at Rs.2, 988.40 crores and the export of Cashew Nut Shell Liquid (CNSL) was 9,099 tonnes valued at Rs.2606 lakh in the year 2008-09 ([www.dacnet.nic.in/cashewcocao/stat1](http://www.dacnet.nic.in/cashewcocao/stat1)). The major buyers of Indian cashew kernels in 2008-09 were United States of America (U.S.A.) (37 per cent), Netherlands (12 per cent), United Arab Emirates (U.A.E.) (11 per cent), and so on as detailed in Table 1.3 (Shalini Yadav, 2010).

### CASHEW ECONOMY OF TAMIL NADU

Cashew is traditionally cultivated in Tamil Nadu for the past two centuries. Cashew occupied an area of 99,168 hectares with a production of 51,667 tonnes and yield of 521 kg/ha in Tamil Nadu in the year of 2008-09 (Season and Crop Report, 2008-09).

Among the different cashew growing districts in Tamil Nadu, Ariyalur (31.4 per cent), Cuddalore (30.2 per cent) and Pudukkottai (8.5 per cent) were the major cashew growing districts accounting for about 70 per cent of the total area. Cuddalore district ranked first in terms of cashew production with 24,302 tonnes (47.0 per cent) and had the highest cashew productivity of 810 kg / ha among cashew growing districts in the state. Though Ariyalur district ranked first in area under cashew, it produced only 19 per cent of total cashew production in Tamil Nadu and its productivity was lesser (315 Kgs / ha) than the state's average productivity of 521 Kgs / ha. Pudukkottai district occupied fourth place with 5.6 per cent of total production with the productivity of 343 kg / ha (Season and Crop Report, 2008-09).

## HYPOTHESES

The following hypotheses have been formulated for the present study:

There exist different channels of cashew marketing, resulting in high variations in marketing efficiencies, and India has export competitiveness in the world cashew market.

## OBJECTIVES

The specific objectives of the study are:

1. to assess the differences in marketing practices, channels and efficiency of cashew marketing in Tamil Nadu;
2. to analyze the export competitiveness of Indian cashew and to analyze the direction and performance of cashew trade in India; and
3. to suggest suitable policy measures to reorient the export strategies of cashew nut trade

## METHODOLOGY

### MARKETING BUSINESS MODELS / TOOLS FOR TAMIL NADU, INDIA

#### SELECTION OF THE SAMPLE MARKET INTERMEDIARIES

In order to study the marketing aspects of cashew, the study covered five village traders, five processors, five commission agents, one Regulated market one Cooperative Marketing Society (Sathva) who were engaged in marketing of cashew in the study area. All these market functionaries were interviewed to gather the required information.

**1. PRICE SPREAD ANALYSIS**

1. Farmer → village Trader → Wholesaler → Processor → Trader
2. Farmer → Co-operative Marketing Society → Processor
3. Farmer → Commission Agent → Wholesaler → Processor
4. Farmer → Processor

Profits of the above said marketing channels and various market functionaries involved in moving the produce from the initial point of production till it reaches the processor were also recorded.

**2. SUM-OF-AVERAGE GROSS MARGIN METHOD**

The average gross margins of all the intermediaries were added to obtain the total marketing margin and the shares of marketing margin of different marketing functionaries in the consumer's rupee were also recorded (Acharya, (2004)).

$$MM = \frac{\sum_{i=1}^N \{S_i - P_i\}}{Q_i}$$

Where,

MM = Total Marketing Margin per unit of the product transacted in the market

$S_i$  = Sale value of a product for  $i^{th}$  intermediary

$P_i$  = Purchase value paid by the  $i^{th}$  intermediary

$Q_i$  = Quantity of the product handled by the  $i^{th}$  intermediary

$i = 1, 2, 3 \dots N$  (Number of intermediaries involved in the market chain)

**3. FARMER'S SHARE IN CASHEW PROCESSOR'S RUPEE**

Further, the share of price received by the farmer in the cashew processor's rupee was calculated with the help of the following formula:

$$F_s = (F_p / P_p) \times 100$$

Where,

$F_s$  = Farmer's share in processor's rupee (percentage)

$F_p$  = Price received by the farmer

$P_p$  = Price paid by the cashew processor

**4. EXPORT COMPETITIVENESS**

The export competitiveness of major cashew exports in the present study has been assessed by using the following method.

**4.1 NOMINAL PROTECTION COEFFICIENT (NPC) OF CASHEW**

Symbolically,  $NPC = P_d / P_r$

Where,

NPC = Nominal Protection Coefficient

$P_d$  = Domestic price of the cashew

$P_r$  = World reference price of the cashew, i.e., what the farmer would have received in case of free trade.

The wholesale price was taken as the price prevailing of Panruti market because as it was a better representation of the price of export quality cashew as compared to the wholesale price of cashew in Tamil Nadu. For the world reference price, the price of New York market was taken because New York was one of the major markets for cashew and also because of the non-availability of data of any other export market. Estimation of world reference price entails adding freight charges, insurance charge, trading margins, transportation cost etc. from New York market (USA) to Chennai port. The resulting international price was compared with domestic price.

**RESULTS & DISCUSSION****1. MARKETING CHANNEL**

In the study area, the cashew growers disposed off their produce through four different marketing channels (Table 1).

**TABLE 1: MARKETING CHANNEL FOLLOWED BY SAMPLE CASHEW FARMERS**

Channel No.	Marketing Channel	No. of Farmers Adopted	Qty. Sold Kg/Farm
I.	Farmer → Village trader → Wholesaler → Processor	124 (68.89)	1302 (63.57)
II.	Farmer → Cooperative marketing Society → Processor	38 (21.11)	325 (15.87)
III.	Farmer → Commission Agent → Wholesaler → Processor	12 (6.67)	241 (11.77)
IV.	Farmer → Processor	6 (3.33)	180 (8.79)
	<b>Total</b>	<b>180 (100.00)</b>	<b>2048 (100.00)</b>

(Figures in parentheses indicate percentage to total).

**CHANNEL I**

A majority of farmers (68.89 per cent) adopted the channel I. They preferred village trader to market their produce, as the village traders made spot payment for their purchase and this was the main reason for the farmers to select this channel.

**CHANNEL II**

About 21.11 per cent of sample respondents marketed raw nuts through this channel. By marketing through cooperative marketing society they got remunerative price for their produce. In the study area, Andimadam Primary Cooperative Marketing Society also played a major role in marketing of raw nuts received from the farmers.

**CHANNEL III**

Only 6.67 per cent of the sample respondents marketed through this channel. Sometimes, commission agents purchased the raw cashew nut from the cashew growers, even when the crop was at its fruit - bearing stage itself, i.e., they acted like pre-harvest contractors.

**CHANNEL IV**

A small proportion (3.33 per cent) of farmers marketed their produce directly to the processing factories.

**2. SELECTION OF MIDDLEMEN**

It is not only the time of sale, but also the middlemen through, or to whom the produce was sold was important as it would influence the net price realized by the farmers. In the present study, farmers were found to sell their produce directly to village trader or to commission agents, cooperative societies and processing units.

TABLE 2: SELLING BEHAVIOUR OF SAMPLE CASHEW GROWERS (Kgs/farm.)

S.No.	Sample Districts	Village Trader	Cooperative Marketing Society	Commission Agent	Processing Units	Total
1.	Cuddalore	1232 ( 57.02 )	475 (21.99 )	298 (13.83)	155 (7.16)	2160 (100.00)
2.	Ariyalur	1042 (56.61)	259 (14.08)	343 (18.62)	197 (10.69)	1841 (100.00)
3.	Pudukkottai	615 ( 63.08)	105 (10.77)	159 (16.31)	96 (9.84)	975 (100.00)
	Total Dry	1024 (57.70)	306 (17.24)	283 (15.97)	161 (9.09)	1774 (100.00)
4.	Pudukkottai Irrigated-	2832 (76.03)	432 (11.60)	96 (2.58)	365 (9.79)	3725 (100.00)
	<b>Overall</b>	<b>1302 (63.58)</b>	<b>325 (15.84)</b>	<b>241 (11.78)</b>	<b>180 (8.80)</b>	<b>2048 (100.00)</b>

(Figures in parentheses indicate percentage to total).

As could be seen from the above table 2, 63 per cent of the total quantity of cashew was sold through village traders and they were followed by Co-operative Marketing Society (16 per cent), commission agent (12 per cent) and processing units (9 per cent). Majority of the cashew farmers sold their produce through village traders. Of the total quantity of cashew sold by the sample farmers, 57.02 per cent in Cuddalore district, 56.61 per cent in Ariyalur district, 63.08 per cent of dry land farms in Pudukkottai district and 76.03 per cent in irrigated farms of Pudukkottai district were sold through village traders. Co-operative marketing society accounted for 22 per cent of the total quantity sold in Cuddalore and ranked second among the marketing agencies in marketing of cashew from the farmers, as a major co-operative marketing society (SATTVA) was located in Cuddalore district. Irrigated cashew growers preferred to sell through village traders (76 per cent) than through commission agents (3 per cent), in contrary to the dry cashew growers.

### 3. COMPARISON OF PRICE SPREAD UNDER DIFFERENT CHANNELS IN CASHEW MARKETING

The marketing efficiency and price spread for cashew are presented in Table 3. In general, the producers' share in the processors' rupee has been considered as an important measure of marketing efficiency. However, from the farmers' point of view, the absolute net price realized was more relevant rather than his percentage share in processors' rupee, though a higher share would be desirable. The net prices realized by the sample farmers through the channels I, II, III and IV were worked out to Rs.3650, Rs.3681, Rs.3651 and Rs.3763 respectively. They accounted for 84.65, 93.66, 86.82 and 97.74 per cent of price paid by the processor in the respective channel. The price spread in channels I, II and III were Rs. 605.45, Rs.180.00, Rs.505.25 respectively. Farmers' share in processor rupee was higher in channel IV (Rs. 97.74) and low in channel I (Rs. 84.65). The channels II and III accounted a share of Rs.93.66 and Rs.86.82 respectively. Therefore, the marketing channel IV through which the cashew grower directly sold his produce to the processor was considered to be more efficient when compared with all other marketing channel

TABLE 3: PRICE SPREAD OF CASHEW NUT UNDER DIFFERENT MARKETING CHANNELS (Rs. per bag of 80Kgs)

S. No.	Particulars	Channel I	Channel II	Channel III	Channel IV
1.	Gross price received by the farmer	3600.00 (85.60)	3750.00 (95.41)	3700.00 (87.99)	3850.00 (100.00)
	i) Marketing cost	40.00 (0.95)	69.00 (1.75)	49.00 (1.17)	87.00 (2.26)
	ii) Net price realized	3560.00 (84.65)	3681.00 (93.66)	3651.00 (86.82)	3763.00 (97.74)
2.	Village Trader				
	i) Price paid	3600.00 (85.60)	-	-	-
	ii) Marketing cost	50.40 (1.19)	-	-	-
	iii) Marketing margin	162.00 (3.85)	-	-	-
	iv) Price received	3812.40 (90.65)	-	-	-
3.	Commission Agent				
	i) Price paid	-	-	3700.00 (87.99)	-
	ii) Marketing cost	-	-	22.00 (0.52)	-
	iii) Marketing margin (commission)	-	-	75.00 (1.78)	-
	iv) Price received	-	-	3797.00 (90.29)	-
4.	Co-operative Marketing Society				
	i) Price paid	-	3750.00 (95.41)	-	-
	ii) Marketing cost	-	80.00 (2.03)	-	-
	iii) Marketing margin	-	100.00 (2.54)	-	-
	iv) Price received	-	3930.00	-	-
5.	Wholesaler				
	i) Price paid	3812.40 (90.65)	-	3797.00 (90.29)	-
	ii) Marketing cost	331.05 (7.87)	-	327.76 (7.79)	-
	iii) Marketing margin	62.00 (1.47)	-	80.49 (1.91)	-
	iv) Price received	4205.45	-	4205.25	-
6.	Processor				
	i) Price paid	4205.45 (100.00)	3930.00 (100.00)	4205.25 (100.00)	3850.00 (100.00)
	ii) Price spread	605.45	180.00	505.25	0.00
	iii) Farmer's share in processors rupee	84.65	93.66	86.82	97.74

(Figures in parentheses indicate percentage to total).

**4. EXPORT COMPETITIVENESS OF INDIAN CASHEW KERNEL**

In the era of globalization, foreign trade policies have gained greater importance in boosting over agricultural exports. This has resulted in cut throat competition among different nations in the trade scenario of various commodities, and in this connection a country's exports will be decided by efficiency promotion and its price competitiveness. Under the WTO regime, the bilateral agreements between the countries as per which the trade of different items have taken place, is of not much importance. Hence, examining the export competitiveness of the commodities of interest for a country is utmost importance. India has higher access to global market especially for horticultural commodities. The exports of cashew kernels in India was 1.14 lakh tonnes valued at Rs.2, 988.40 crores and the export of Cashew Nut Shell Liquid (CNSL) was 9,099 tonnes valued at Rs.26.06 lakh in the year 2008-09 ([www.dacnet.nic.in/cashewcocoa/stat1](http://www.dacnet.nic.in/cashewcocoa/stat1)). The import of raw nuts was to the extent of 7.52 lakh tonnes valued at Rs.3037.35 crores in the year 2009-10 as against 6.05 lakh tonnes valued at Rs.2632.41 crores in the year 2008-09 ([www.indiastat.com](http://www.indiastat.com)). Cashew assumed importance in view of the fact that it earned a sizeable amount of foreign exchange (Rs. 22,889 million during 2007-08). Cashew is primarily an export-oriented commodity in India. The share of kernels exported in the total processed kernels in the country was 40.84 per cent in 2007-08. During 2007-08, the export of cashew kernels and CNSL was of the value of Rs. 2,288. 90 crores and Rs.11.97 crores respectively. The value of imported raw nuts was Rs.1746.80 crores and the net foreign exchange earnings were Rs. 554.07crores. Thus, import of raw nuts caused a drain to the economy (Shalini Yadav, 2010). In this context, the competitiveness of Indian cashew export was analyzed using Nominal Protection Coefficients (NPC). The nominal protection coefficients of cashew kernel were estimated for the year 2008-09 under exportable and importable hypothesis and the results of the analysis are presented in Table 4 and 5.

The Nominal Protection Coefficient (NPC) of export of cashew kernel for the year 2008-09 was found to be lower than unity (0.96) under exportable hypothesis (Table 4). This would imply that cashew kernel was a good exportable product. The nominal protection coefficient (NPC) of cashew kernel for the year 2008-09 under importable hypothesis is presented in Table 5 and this would indicate that the NPCs was found to be less than unity (0.86) which would indicate a good import substitute of raw cashew nut. The foregoing results revealed that cashew kernel was competitive in the international market and has a vast potential for export of the domestic industry.

**TABLE 4: NPC OF CASHEW KERNEL EXPORTS DURING 2008-09**

S.No	Particulars	Place	Unit	Value (Rs.)
1.	Whole sale price of cashew kernel	Panruti	Rs/Qtl.	24216.00
2.	Plus transport cost to	Chennai	Rs/Qtl.	45.20
3.	Plus marketing margin (5%)		Rs/Qtl.	1210.80
4.	Plus port clearing& handling charges		Rs/Qtl.	125.10
5.	Equal Free On Board (FOB) Price (1+2+3+4)	Chennai	Rs/Qtl.	25597.10
6.	Plus Freight charge		Rs/Qtl.	196.00
7.	Plus insurance at 2% of price		Rs/Qtl.	484.32
8.	Equals Landed cost (5+6+7)	US	Rs/Qtl.	26277.42
9.	Exchange rate		1\$=Rs.	44.00
10.	Cost, Insurance and Freight (CIF) price (Row 8/Row 9)		US\$ /Qtl	597.21
11.	Reference price	US	US\$ /Qtl	618.14
12.	NPC of cashew kernels (Row 10/Row 11)			<b>0.96</b>

Source: The Cashew Journal, 2008-09 and the Cashew Kernel Exporters of Panruti

**TABLE 5: NPC OF RAW CASHEW IMPORTS DURING 2008-09**

S.No	Particulars Place	Unit	Value
1.	Free On Board price (in US)	\$/Qtl.	618.14
2.	Plus freight from US to India	\$/Qtl.	3.56
3.	Plus insurance at 2% of price	\$/Qtl.	12.36
4.	Equals CIF price (1+2+3)	\$/Qtl.	634.06
5.	Exchange rate	1\$=Rs.	44
6.	Equals Cost, Insurance, Freight price (Row 4 * Row 5)	Rs/Qtl.	27898.64
7.	Plus port clearing charges(Chennai)	Rs/Qtl.	125.10
8.	Equals landed cost(6+7)	Rs/Qtl.	28023.74
9.	Plus transport cost (Panruti)	Rs/Qtl.	45.20
10.	Equals Landed cost (8+9)	Rs/Qtl.	28068.84
11.	Reference price (9+10)	Rs/Qtl.	28114.04
12.	Wholesale price of Cashew Kernel	Rs/Qtl.	24216.00
13.	NPC (Row 12 / Row 11)		<b>0.86</b>

Source: The Cashew Journal, 2008-09 and the Cashew Kernel Exporters of Panruti.

**EXPORT COMPETITIVENESS OF INDIAN CASHEW KERNEL**

In the context of WTO regime, the theory of comparative advantage in its simplest state reveals that a particular nation can enhance the resource use efficiency and by producing and exporting commodities in which it is relatively efficient and importing commodities in which it is relatively not so efficient. Keeping this in mind, especially in a free trade environment, it is advantageous for any country to focus on those commodities that have greater comparative advantage than others, so as to maximize its export revenue. The nominal protection coefficient explains the comparative advantage engaged by commodities in the context of free trade regime.

The analysis of export competitiveness in general, indicated that all the commodities were found to be competitive for their export to other countries as was evident from NPCs of less than unity. The NPCs for cashew kernel have been estimated both under the importable and exportable hypothesis.

The NPCs for cashew kernel under exportable and importable hypothesis were calculated for the period 2008-09 and results presented in Tables 4 and 5 respectively would reveal that under importable hypothesis, if domestic price was lower than international price plus freight, insurance, transportation and other costs involved in taking the produce from foreign market to domestic market then the produce was import competitive.

The NPC for the period 2008-09 under exportable hypothesis was 0.96 (Table 4), which revealed that the domestic prices received by the farmers were lower than the international prices, which also implied that the domestic producers were not protected or rather taxed compared to a situation prevailing under free trade condition. It also revealed that cashew kernel export had a high degree of comparative advantage in the world market, but for the trade barriers de-linking the domestic and world market. The barriers included the various policy measures pertaining to cashew, implemented by the government such as tax on raw cashew nut while importing and on exporting cashew kernel. Thus, India had a great advantage to specialize the production of raw cashew nut and to export the surplus production to earn valuable foreign exchange. India needs to capitalize this advantageous position by ensuring its position in the international market as a stable and dependable source of exportable quality cashew. There is also an urgent need to enhance the productivity levels of cashew so that cost of production can be minimized and thereby the comparative advantage could be increased. Similar results were obtained by Mruthyunjaya and Chauhan (2003).

Table 5 would reveal that the NPC value under importable hypothesis for the period 2008-09 worked out to be 0.86 implied that the domestic prices received by the farmers were below the international prices and cashew cultivators in Tamil Nadu were not protected to the extent or in effect taxed in the pricing front



compared to the free trade situation. Revealing the fact that cashew kernel was a good import substitute, the findings thus would imply that domestic prices received by farmers were below the international prices and the cashew cultivators of Tamil Nadu were net taxed on the pricing front compared to the free trade situation. Similar results were obtained by Rohini (2001) for export of South Indian tea in Tamil Nadu.

It is worth noting that the growth rates in exports of cashew kernel were increasing over a period of time on one hand and they were also export competitive on the other. Thus, the country had a comparative advantage in the export of cashew products too and this can be achieved by the concerted efforts of government by providing incentives to the cashew producers on the export of graded variety of cashew and improving infrastructure facilities to export the cashew.

## SUMMARY & CONCLUSION

A majority of farmers (68.89 per cent) adopted the channel I. They preferred village trader to market their produce, as the village traders made spot payment for their purchase and this was the main reason for the farmers to select this channel.

63 per cent of the total quantity of cashew was sold through village traders and they were followed by Co-operative Marketing Society (16 per cent), commission agent (12 per cent) and processing units (9 per cent). Co-operative marketing society accounted for 22 per cent of the total quantity sold in Cuddalore and ranked second among the marketing agencies in marketing of cashew from the farmers, as a major co-operative marketing society (SATTVA) was located in Cuddalore district.

The price spread would indicate that the marketing channel IV through which the cashew grower directly sold his produce to the processor was considered to be more efficient when compared with all other marketing channels.

The NPC of cashew kernel exports during 2008-09 would reveal that NPC value under exportable hypothesis was 0.96. This implied that the domestic prices received by the farmers were lower than the international prices, which would further explain that the domestic producers were not protected or rather taxed compared to a situation prevailing under free trade condition.

The NPC of raw cashew imports during 2008-09 would reveal that NPC value under importable hypothesis for the period 2008-09 was 0.86 and this would imply that the domestic prices received by the farmers were below the international prices and cashew cultivators in Tamil Nadu were not protected to the extent or in effect taxed in the pricing front compared to free trade situation.

The Cashew Producer's Societies (CPS) should be started with collection centres wherever they are required so that the farmers could become members and market their produce in the form of raw nuts / kernels. This system of large scale processing of raw nuts/kernels by CPS will also help to produce higher grade cashew nut kernels with uniform quality and reduce the cost of processing.

Exports strategies should also be redesigned to increase cashew exports to UK, Japan, UAE, Australia and other cashew importing countries. Cashew growers and marketers/exporters should be provided with more price incentives than domestic price level and also provided better infrastructure so as to boost the cashew exports from Tamil Nadu and also India.

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## REAL IMPACT OF IMPACT FACTOR RESEARCH JOURNALS ON RESEARCH PAPERS

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## ABSTRACT

**Journal Impact Factor (JIF)** means average number of citations to articles published in journals, books, thesis, project reports, news papers, conference/ seminar proceedings, documents published in internet, notes and any other approved documents. It is calculated in yearly/half- yearly/ Quarterly/Monthly for the journals that are indexed in Journal Reference Reports (JRR). **Objective:** We analyzed to what extent impact factor affects the quality of journal & is that the only factor which affects the quality of journal. **Method:** Factors affecting quality of research papers considered, analyzed and correlation with journal impact factor will be established. **Conclusion:** Factors affecting quality of journals have no impact on Journal's Impact Factor. **Implications:** Analyzing journals through impact factor, does not ensure researcher to get quality data for references and hence dependency on journal impact factor is questionable.

## JEL CLASSIFICATION

I2 Education and Research Institutions  
I20 General

## KEYWORDS

Bibliometric Measures, Cited half-life, Immediacy Index, Impact Factor, Publications.

## INTRODUCTION

According to Somnath Saha, M.D., M.P.H., Assistant Professor,<sup>1</sup> Sanjay Saint, M.D., M.P.H., Associate Professor,<sup>2</sup> and Dimitri A. Christakis, M.D., M.P.H., Assistant Professor<sup>3</sup> *Journal List Med Libr Assoc v.91(1); Jan 2003 PMC141186-* Impact factor, an index based on the frequency with which a journal's articles are cited in scientific publications, is a putative marker of journal quality. By citing articles from a given journal in their own manuscripts, researchers are in essence casting votes for that journal. Impact factor serves as a tally of those votes.

**The impact factor was devised by Eugene Garfield**, the founder of the Institute for Scientific Information. Impact factors are calculated yearly starting from 1975 for those journals that are indexed in the Journal Citation Reports.

**According to University Library, University of Illinois at Urbana- Campaign-** Three years worth of data is required to calculate a Journal Impact Factor.

The formula to determine the 2008 impact factor for a journal would be calculated as follows:

**A = the number of times articles published in the journal during 2006-7 were cited by other journals during 2008**

**B = the number of articles or reviews that were published in the journal during 2006-7**

**2008 Impact factor for a journal = A/B**

("Citable items" are usually articles, reviews, proceedings, or notes; not editorials or letters to the editor.)

**According to Journal Citation Report-**

**Cited half-life:** the median age of the articles that were cited in *Journal Citation Reports* each year. For example, if a journal's half-life in 2005 is 5, that means the citations from 2001-2005 are half of all the citations from that journal in 2005, and the other half of the citations precede 2001.

**Immediacy index:** the number of citations the articles in a journal receive in a given year divided by the number of articles published

**Aggregate impact factor** for a subject category: it is calculated taking into account the number of citations to all journals in the subject category and the number of articles from all the journals in the subject category

## LITERATURE REVIEW

1) Tobias Ophthof- Professor, Department of Clinical and Experimental Cardiology, Academic Medical Center, University of Amsterdam, Meibergdreef 9, 1105 AZ Amsterdam, Netherlands, *Oxford Journals, Volume 33, Issue 1, Pp 1-7*

"Sense and nonsense about the impact factor"

1. The impact factor is a valid tool for the quality assessment of scientific journals.
2. The impact factor is not valid for the assessment of the quality of individual papers.
3. The impact factor is not valid for the assessment of the quality of individual scientists.
4. The impact factor is not valid for the assessment of the quality of groups of scientists if they produce fewer than 100 papers in 2 years.
5. For quality assessment of individual papers, individual scientists and groups of scientists, citation analysis should be preferred to *a priori* assumptions on the quality of papers.
6. Citation analysis does not necessarily agree with peer judgement.
- 2) **According to Nature Editorial in 2005 (Nature 435, 1003-1004) - High impact journals themselves do not support use of the IF in judging individuals.** This is not to argue that we should not encourage our grantees to publish in high impact journals. It's just that, for individual papers, high impact is not equivalent to the IF of the journal.
- 3) **According to Warwick Anderson, Professor & CEO- National Health & Medical Research Council Australia-The Conversation 21 September 2013 Issue No:288, Quality not quantity – Measuring the impact of research -** Even in the highest impact factor journals, some papers are never cited by other researchers. A single paper– may be of greater impact than a paper in a high-impact journal that very few people read.
- 4) **According to Brendan Crabb-President of the Association of Australian Medical Research Institutes and Director and CEO at Burnet Institute- "Do not resuscitate: the journal impact factor declared dead"**– The JIF can be greatly skewed by an extraordinarily highly cited individual paper. Journals may decide to publish on certain topics to maximize their JIF. One day, it even may prove to be significant to give "bonus marks" for individuals publishing highly cited papers in low impact journals.

- 5) According to American Society for Horticultural Science (ASHS) - "You Are Greater and Better than a Journal Impact Factor Number"- Analysis by Seglen (1992) showed that typically only 15% of the papers in a journal account for half the total citations. It can be noted that 90% of all citations to Nature are from only 25% of its published papers.

### OBJECTIVES OF THE STUDY

- To find the relation between Impact Factor of Journal and Quality of Research Paper
- To find the relation between Size of Journal and number of hits on individual papers
- To analyze the impact of Subject Area on hits upon individual papers

### HYPOTHESIS

- H1: There is significant relation between impact factor of Research Journal and quality of Research Paper
- H1: There is significant impact of size of journal on hits on individual papers
- H1: There is significant impact of subject area of journal on hits upon Research Papers

### RESEARCH METHODOLOGY

#### RESEARCH DESIGN

Research will be Exploratory and based on Primary Data

#### DATA COLLECTION METHOD

Data will be collected through questionnaire which will be filled through Academicians of Management College from Indore, M.P. Region

A sample of 80 Academicians will be taken for the purpose of this study.

#### DATA ANALYSIS METHOD

80 Academicians will be analyzed on interview basis by asking these three generalized questions and their responses will be rated on Ordinal Scale- Yes (1), No (2), No response (3)

- Are you aware about Research Paper?
- Are you aware about impact factor of Journal?
- Are you aware about Impact factor of Research Paper?

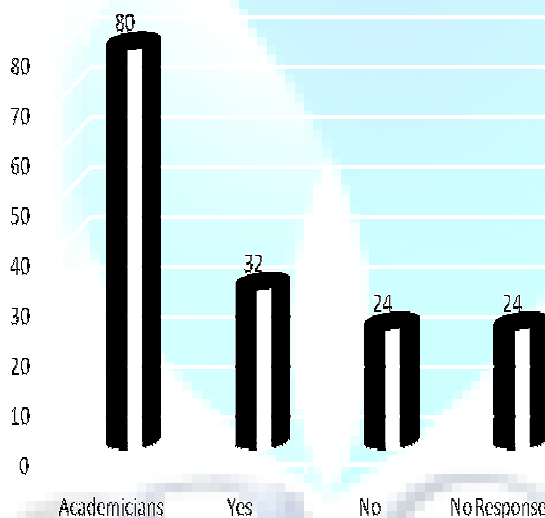
#### OUTCOME OF GENERALIZED QUESTIONS

40% Academicians say YES- 32 People

30% Academicians say NO- 24 People

30% remaining given No Response- 24 People

#### MAIN GRAPH



So out of 80 academicians, 48 Respondents who said No & given No Response will be out of this process and only 32 will be considered in filling the questionnaire

Responses of 32 respondents will be analyzed on the basis of 3- Point Likert Scale

3- YES, 2- NO, 1- CAN'T SAY

Academicians have to fill their opinion on the basis of these points and accordingly their response will be analyzed

Respondents Name, Affiliation and Designation is confidential and cannot be disclosed

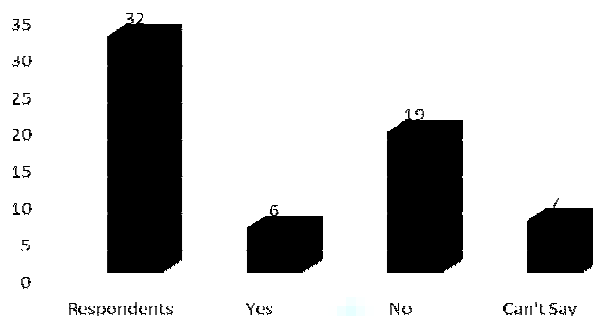
### RESULTS AND DISCUSSION

#### 1. THERE IS NO UTILITY OF RESEARCH JOURNAL WITHOUT IMPACT FACTOR

TABLE 1

Parameters	Responses (out of 32 Respondents)
Yes	6
No	19
Can't Say	7

FIGURE 1



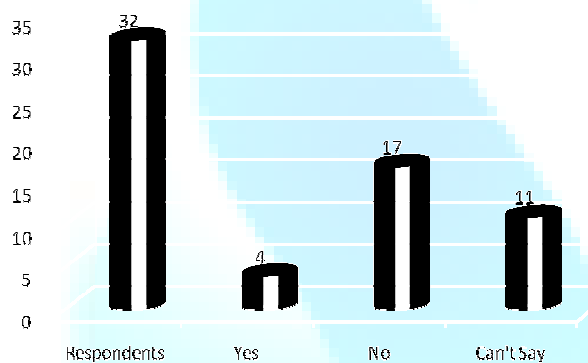
Outcome: Utility of Research Journal is not solely dependant on impact factor

## 2. ACADEMICIANS GIVE HIGH IMPORTANCE TO IMPACT FACTOR

TABLE 2

Parameters	Responses (out of 32 Respondents)
Yes	4
No	17
Can't Say	11

FIGURE 2



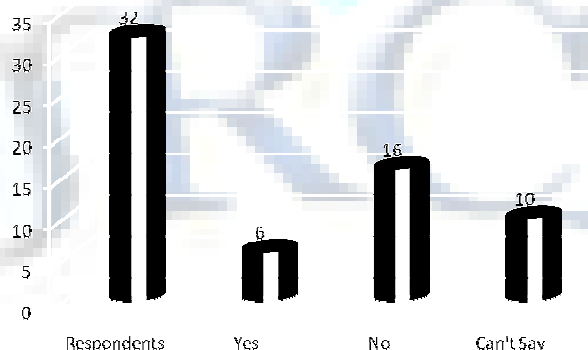
Outcome: Academicians do not give such high importance to impact factor

## 3. DO YOU THINK RENOWNED ACADEMICIANS PUBLISH THEIR PAPERS IN HIGH IMPACT FACTOR JOURNALS ONLY?

TABLE 3

Parameters	Responses (out of 32 Respondents)
Yes	6
No	16
Can't Say	10

FIGURE 3



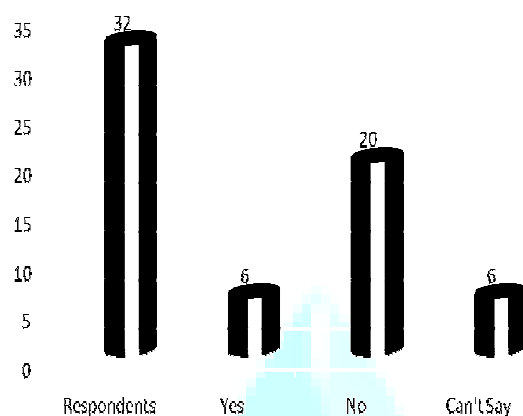
Outcome: Renowned academicians do not their papers in high impact factor journals only

## 4. DO YOU CONSIDER IMPACT FACTOR OF JOURNAL BEFORE PUBLISHING YOUR RESEARCH PAPER IN IT?

TABLE 4

Parameters	Responses (out of 32 Respondents)
Yes	6
No	20
Can't Say	6

FIGURE 4



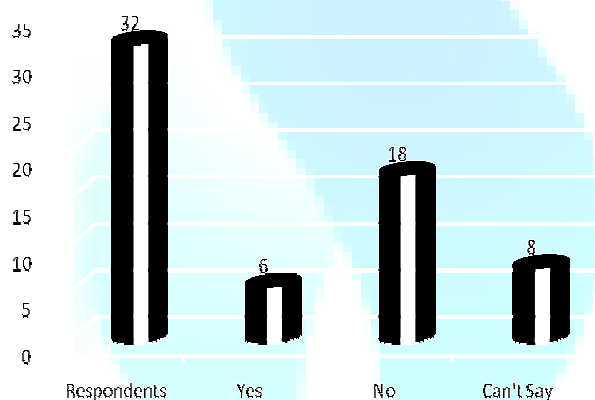
Outcome: Researchers do not consider impact factor of journals before publishing their papers

#### 5. ARE HIGH IMPACT FACTOR JOURNALS POSSESS GOOD QUALITY?

TABLE 5

Parameters	Responses (out of 32 Respondents)
Yes	6
No	18
Can't Say	8

FIGURE 5



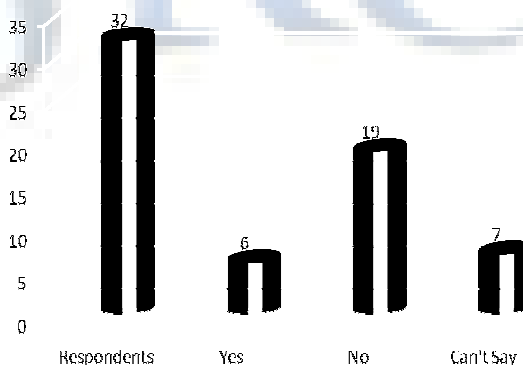
Outcome: high impact factor journals does not always possess good quality

#### 6. HIGH IMPACT FACTOR MEANS ALL THE PAPERS IN A JOURNAL ARE BEING READ

TABLE 6

Parameters	Responses (out of 32 Respondents)
Yes	6
No	19
Can't Say	7

FIGURE 6



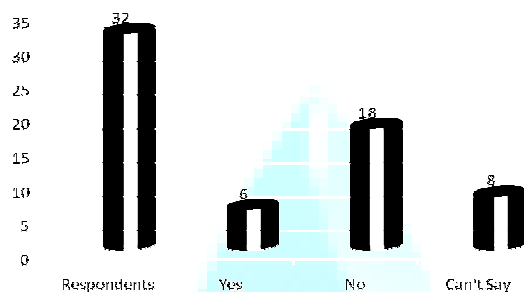
Outcome: High impact factor does not mean all the papers in a journal are being read

## 7. LOW IMPACT FACTOR MEANS POOR QUALITY OF RESEARCH PAPERS PUBLISHED IN IT

TABLE 7

Parameters	Responses (out of 32 Respondents)
Yes	6
No	18
Can't Say	8

FIGURE 7



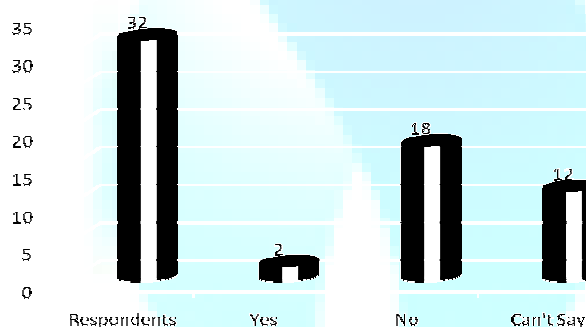
Outcome: Low impact factor does not mean poor quality of research papers published in it

## 8. SUBJECT AREA OF JOURNAL AFFECT IMPACT FACTOR OF RESEARCH PAPER PUBLISHED IN IT

TABLE 8

Parameters	Responses (out of 32 Respondents)
Yes	2
No	18
Can't Say	12

FIGURE 8



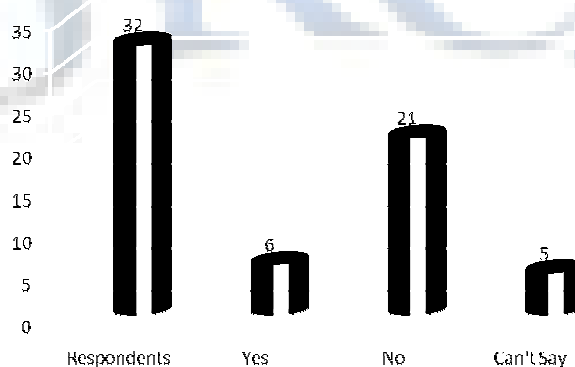
Outcome: Subject area of journal does not affect impact factor of research paper published in it

## 9. SIZE OF JOURNAL HAS DIRECT RELATIONSHIP WITH THE NUMBER OF HITS ON RESEARCH PAPER

TABLE 9

Parameters	Responses (out of 32 Respondents)
Yes	6
No	21
Can't Say	5

FIGURE 9



Outcome: Size of journal has no direct relationship with the number of hits on research paper

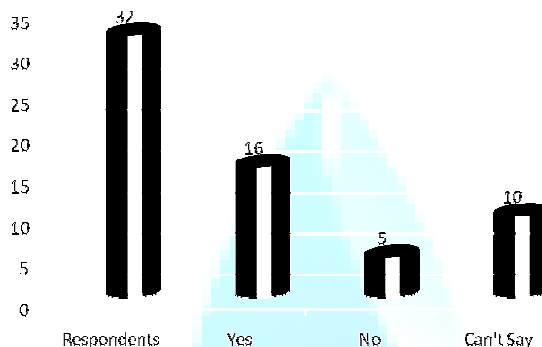


## 10. MORE HITS ON A SINGLE RESEARCH PAPER IN JOURNAL MAY INCREASE ITS IMPACT FACTOR OF WHOLE JOURNAL

TABLE 10

Parameters	Responses (out of 32 Respondents)
Yes	16
No	5
Can't Say	10

FIGURE 10



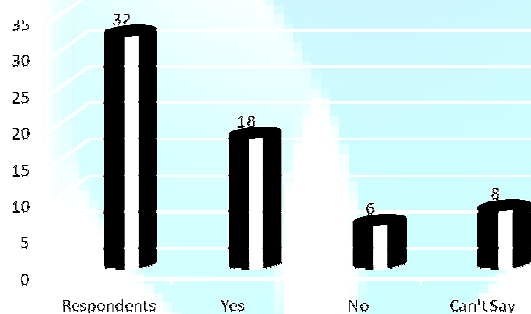
Outcome: More hits on a single research paper in journal may increase its impact factor of whole Journal

## 11. IMPACT FACTOR OF JOURNAL DEPENDS ONLY ON FEW PAPERS BUT NOT ALL

TABLE 11

Parameters	Responses (out of 32 Respondents)
Yes	18
No	6
Can't Say	8

FIGURE 11



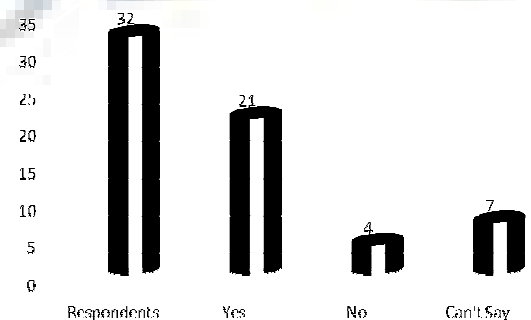
Outcome: Impact factor of Journal depends only on few papers but not all

## 12. IMPACT FACTOR SHOULD NOT BE CONSIDERED BEFORE PUBLISHING RESEARCH PAPER IN A JOURNAL

TABLE 12

Parameters	Responses (out of 32 Respondents)
Yes	21
No	4
Can't Say	7

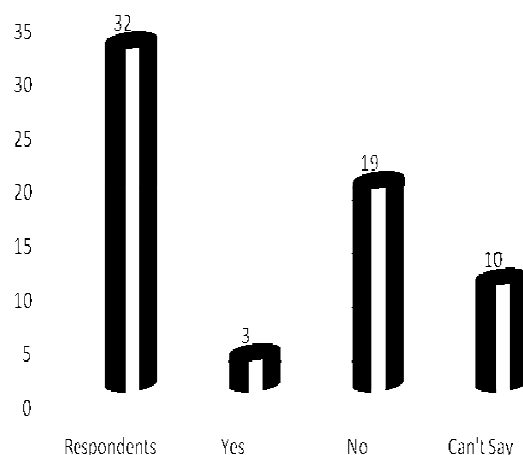
FIGURE 12



Outcome: Impact factor should not be considered before publishing research paper in a journal

**13. HIGH IMPACT FACTOR MEANS BEST QUALITY OF RESEARCH PAPERS PUBLISHED IN IT****TABLE 13**

Parameters	Responses (out of 32 Respondents)
Yes	3
No	19
Can't Say	10

**FIGURE 13**

**Outcome: High impact factor does not mean best quality of research papers are published in it**

**INTERPRETATION**

1) H1: There is significant relation between impact factor and quality of journal

**From the above information obtained, it can be interpreted that we fail to accept Alternate Hypothesis and Null Hypothesis is accepted**

2) H1: There is significant impact of size of journal on hits on individual papers

**From the above information obtained, it can be interpreted that we fail to accept Alternate Hypothesis and Null Hypothesis is accepted**

3) H1: There is no significant impact of subject area of journal on hits upon Research Paper

**From the above information obtained, it can be interpreted that we fail to accept Alternate Hypothesis and Null Hypothesis is accepted**

**CONCLUSION**

There is no point in assessing impact factor before publishing paper in any journal as it does not guarantee that all the papers in that journal are of good quality. Impact factor of Research Journal is not reliable in judging the quality of Research Paper.

Journal's impact factor is calculated only on the basis of few papers of well known/very good writer's and papers of unknown but good writers are never referred. Those few papers of known writers ultimately raise impact factor of journal as no. of citations over that paper is more, and we think that all the papers in it all good. But actually it's a big myth, majority of quality papers are neglected so ultimately hits on it will be less, and 2-3 papers will increase impact factor. Hence researchers/publishers cannot rely on the quality of all Research Paper on the basis of only few.

**Hence impact factor of Research Journal does not really affect Individual Papers and quality of Journal.**

**LIMITATIONS**

Although this paper clearly proves that there is no significant impact of Research Journal's impact factor, but still there are certain limitations in this study like improper answering by respondents which makes some points ambiguous. Feedback obtained by them is not proper. Most of the respondents had no idea about even Research Paper and its impact factor.

These limitations can be reduced by convincing academicians to give proper answer and making them aware about impact factor

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## ANNEXURE

## QUESTIONNAIRE FORMAT

## Dear Respondent,

I, Shubhangi Jain Assistant Professor, Apex Inst. Of Mgmt. & Rech., Indore (M.P.) am conducting this survey on "Real Impact of Research Journal's Impact Factor on Individual Research Paper". So I would be grateful if you could spend some of your precious time in filling up this questionnaire.

Name..... Gender.....  
Age..... Mobile No.....

S.No	Parameters	YES	NO	CAN'T SAY
1.	There is no utility of Research Journal without Impact Factor			
2.	Academicians give high importance to impact factor			
3.	Do you think renowned academicians publish their papers in high impact factor journals only			
4.	Do you consider impact factor of journal before publishing your research paper in it?			
5.	Are high impact factor journals possess good quality			
6.	High impact factor means all the papers in a journal are being read			
7.	Low impact factor means poor quality of research papers published in it			
8.	Subject area of journal affect impact factor of research paper published in it			
9.	Size of journal has direct relationship with the number of hits on research paper			
10.	More hits on a single research paper in journal may increase its impact factor			
11.	Impact factor of Journal depends only on few papers but not all			
12.	Impact factor should not be considered before publishing research paper in a journal			
13.	High Impact factor means best quality of research paper in it			

**GREEN CONSUMERISM: AWARENESS OF ENVIRONMENTAL ISSUES AMONG CONSUMERS IN TAMILNADU**

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**ABSTRACT**

*Green consumerism can be described as either a highly democratic strategy to save the planet or exploitative marketing. The idea of green consumerism is very much important in this decade to popularize among all sections. More and more business and industries are joining in the green movement either out of a real interest in saving the planet or out of a desire to capitalize on the growing consumer demand for greener ways. But, however, the movement is growing at snail's pace because of lack of support from the government and people. The time has come for the people across the country to become green to save our mother earth. The government, non – governmental organization and marketers could formulate strategies to promote green consumerism only upon knowing how far the consumers are green to – day. As the greenness of consumers cannot be measured directly, their levels of awareness on major environmental issues and level grants have to be analysed objectively. The present paper is an attempt in this direction aiming to measure the level of awareness of consumers of Tamil Nadu over major environmental issues which are paramount significance to the state.*

**KEYWORDS**

Green consciousness, Green consumerism, Green consumers, Green Products.

**INTRODUCTION**

 Green consumerism can be described as either a highly democratic strategy to save the planet or exploitative marketing. The idea of green consumerism is very much important in this decade to popularize among all sections. Green consumerism refers to the production, promotion, and preferential consumption of goods and services on the basis of their pro- environment claims. The idea of buying eco – friendly products by the consumers is catching up to-day. The people have started buying organic vegetables and foods, ayurvedic medicines, natural dyes, natural textiles, bio – fertilizers, bio-pesticides, herbal cosmetics and green paints. As a result, more and more business and industries are joining in the green movement, either out of a real interest in saving the planet or out of a desire to capitalize on the growing consumer demand for greener ways. *But, however, the movement is growing at snail's pace because of lack of support from the government and people.* During the past few years, despite a lot of hype over the environmental issues in India, the awareness and deliberations of environmental issues is mostly confined to some areas and regimes especially metros. Soil erosion and land degradation continue to worsen and are hindering the economic development in rural India. Many areas once covered by dense forest have turned into desert due to centuries of over grazing and agricultural production. Nearly 5.3 million hectares of forest had been destroyed. India is the second highest polluted country in the world and the air pollution especially industrial pollution is increasing the public health risks and the extensive use of coal has put heavy amount of green house gases into atmosphere. The abatement efforts are also consuming a significant portion of Government's exchequer. Ministry of Environment and forests estimates that the annual cost of environmental degradation in India in the past few years is averaging about 4.5 percent of GDP.

It is an undenyng fact that the people of some areas are well aware of environmental issues and take every effort to preserve environment, while others give scant respect to these issues. In the long run it is not only grievously injuring the economic development but it retards the growth of 'Green Consumerism'. The time has come for the people across the country to become green to save our mother 'earth'. The Government, non Governmental organizations and marketers could formulate strategies to promote green consumerism only upon knowing how far they are 'green' in their attitude and behaviour. As the greenness of consumers cannot be measured directly, their levels of awareness on major environmental issues and developments have to analyse objectively. The present paper is an attempt in this direction aiming to measure the level of awareness of consumers of Tamil Nadu over major environmental issues which are paramount significance to the state.

**GROWING ENVIRONMENTALISM IN INDIA**

Consumer organizations, civil society groups and non- governmental organizations emerge in a large number across the country with the objective of protecting environment. There have been many agitations to conserve natural habitats when dams were constructed like the Narmada Bachao Andolan. Not only this, American Enron project at Maharashtra had to face agitations for storing hazardous chemicals. The Reliance Jamnagar refinery had to face similar protest. The effect of Bhopal gas tragedy is still nagging the minds of Indians. Till date, demonstrations are going on in major cities seeking compensation for the victims. Air pollution is most severe in urban centers, but even in rural areas, the burning of wood, charcoal, and dung for fuel, coupled with dust from wind erosion during the dry season, poses a significant problem. Industrial air pollution threatens some of India's architectural treasures, including the Taj Mahal in Agra, part of the exterior of which has been dulled and pitted by airborne acids. 'Save Taj Mahal campaign' by civil society groups and environmentalist have forced the Government of India to initiate steps to protect this architectural marvel. Nano car project, a dream project of Tatas had to face similar protest in Singur, West Bengal. The project was abandoned half way and shifted to Gujarat, owing to the stiff opposition of the farmers of the area against their forceful agricultural land acquisition. 'Clean Yamuna Campaign' and violent protests of tribal people with the support of Maoists in Chhattisgarh and Jharkhand are some of the indications that whenever the actions of either Government or MNCs are detrimental to environment. Falling in line with the mainstream trend, the state of Tamil Nadu is also witnessing protests on major environmental issues. The people of coastal region of Kanyakumari are on the war path against the functioning of Kudankulam Nuclear Power Project (KKNPP). The chemical effluents from the tanneries of Ambur, Vaniyambadi and Dindigul are polluting the water, air and land. The hazardous chemical waste released by dying units in Tripur is polluting the ground water and land in and around twenty villages. Public Interest

Litigation (PIL) petitions were moved on these issues and people got temporary relief from courts. The Sterlite Copper unit in Tutucorin also got closed because of the ire of people of the area. The project of laying oil pipelines through Agri lands in Coimbatore district also met similar fate. 'Save Western Ghats' movement is gaining momentum in the state, as the Western Ghats mostly stretching across the region is being subjected to all forms of deforestation. All these are of positive signs that the environmental awareness has shot up dramatically in Tamil Nadu.

## REVIEW OF LITERATURE

Allport (1935) defined environmental attitude as a mental and neutral state of readiness which exerts a directing influence upon the individual's response to all objects and situations with which it was related. Douglas J. Darymple and Leonard J. Parsons (2002) believed that the "green" movement was an answer for business to produce more environmentally safe products. The study by Henry Assael (2006) observed that in U.S., companies had taken actions to promote environmental controls towards green marketing; He pointed out that companies like Reynolds Wrap promotes recycling, while Crane Papers advertises the natural content of its products, McDonald's switched from plastic to paper wrapping and uses recyclable products to build its restaurants. Bhaskaran and Suchitra Mohanty (2008), in their research work observed that the concept of organic agriculture was very wide and holistic which was close to sustainable agriculture. Michael R. Solomon (2009) identified that firms that adopt the philosophy to protect or enhance the natural environment moved towards a segment of consumers who practice LOHAS – an acronym for "Lifestyles of Health and Sustainability". The study by Varsha Jain and Subhadip Roy (2010) addressed the concept of Ecoism from the consumer perspective. It was found that Eco-friendly products are still in a nascent stage in India (such as organic food). It is difficult for the consumers to comprehend about eco-friendly products across all categories. The study conducted by Sourabh Bhattacharya (2011) stated that the green marketers in India should carry out heavy promotional campaigns, because majority of the Indian consumers are price-sensitive and are not sure about the quality of green products. Selvakumar and Ramesh Pandi (2011) noted that Green Marketing was not all about manufacturing green products and services but encompassing all those marketing activities that were needed to develop and sustain consumers' eco-friendly attitudes and behaviours in a way that helped in creating minimal detrimental impact on the environment. Michael Smith (2012) stated that the Green Consumer Day was a day intended to build awareness around how even the smallest actions we take as individuals could help – or harm – the planet. Chan and Lau (2012) examined the consumers' environmental concern and explored their level of awareness about the environmental issues and found that their awareness of green issues was uneven.

## STATEMENT OF THE PROBLEM

The protests and agitations in some parts of Tamil Nadu on environmental issues seem to be sporadic and hence it could not be taken for granted that the people of the state embraced greenness altogether. Despite efforts from all quarters, the Western Ghats mostly stretching across the state is subjected to all forms of deforestation. Hunting of wild animals and rare species are continuing unabated in the region. Raw sewage caused by lack of civic amenities and runoff from agricultural pesticides make water pollution alarming. Air pollution and soil erosion are threatening the healthy living of people. The prevalence of all these issues manifest the ignorance of a majority of people over environmental concerns in the state. The time has come for the people to become green. Therefore, it is a need not only to explore whether people are aware of environmental issues but also to identify the issues they are aware or unaware of. This would help the interested groups to frame policies and strategies to educate people about the environmental impacts of their actions. The pilot study undertaken in cities of Trichy and Madurai had brought to the fore the ungreenness attitude of consumers of the state. Based on the outcome of the pilot study, it is aimed to assess the level of awareness of consumers over major environmental issues and to suggest ways to bring the green movement forward.

## OBJECTIVES OF THE STUDY

The major objectives of the study are :

1. To take stock of the major environmental issues of to-day, with the specific focus to Tamil Nadu state.
2. To know the socio – demographic characteristics of sample respondent -consumers.
3. To measure the level of awareness of consumers over the selected environmental issues and to identify the specific reasons for their poor awareness on such issues.
4. To study the association between the socio demographic variables of consumers and their level of awareness on environmental issues.
5. To offer suggestions based on the findings of the study to make the consumers of the state more green - conscious.

## HYPOTHESES OF THE STUDY

The age, gender, educational status, community, occupation, family income, family size, and place of residence of the sample respondents do not influence their level of awareness on environmental issues.

## METHODOLOGY

It is an empirical study aims at measuring the level of awareness of consumers over the major environmental issues in the state of Tamil Nadu. The environmental issues which are currently identified at global level are numbering 57 (Zimmer et.al). Out of these, only 25 environmental issues relevant to Indian context are taken for the present study. They are 1. Air pollution, 2. Light pollution, 3. Deforestation, 4. Noise pollution, 5. Radio active contamination, 6. Forest preservation, 7. Global warming, 8. Waste control, 9. Waste disposal, 10. Eco – friendly product, 11. Resource depletion, 12. Energy efficient bulbs, 13. Water pollution, 14. Alternative energy resources, 15. Recycling, 16. Visual pollution, 17. Harmful household discharges, 18. Soil pollution, 19. Bio pollutants, 20. Resource conservation, 21. Depleting ground water level, 22. Nuclear pollution, 23. Species preservation, 24. Discharge from industries and 25. Reusable containers. Both primary and secondary data are collected and used for the study.

### SAMPLING

For the purpose of the study, a sample of 250 respondents are selected from the study area by following convenient sampling method. The respondents were chosen randomly from the 10 districts of the state based on their socio-economic setting.

### COLLECTION OF DATA

The primary data were collected from the sample respondents by using a well structured questionnaire. The secondary data were collected through books, journals, newspapers and websites.

### TOOLS FOR ANALYSIS

The statistical tools used for the study are

#### 1. PERCENTAGE ANALYSIS

It is used to study the socio demographic characteristics of sample respondents.

#### 2. 3 – POINT SCALE RANKING ANALYSIS (OVERALL)

Three point scale ranking analysis was used for measuring the overall awareness level of respondents over environmental issues taken for the study. The scale designed as having three responses, namely 'Fully Aware', 'Somewhat Aware' and 'No idea'. The points assigned for these responses were 3, 2 and 1 respectively. The maximum score was stood at 750. Based on the scale of awareness, the issues were classified into three categories namely 'Higher level' (500 and above), 'Moderate level' (between 375 and 499) and 'Poor' (below 375).

#### 3. FACTOR ANALYSIS

The technique has been adopted to identify and analyse the specific reasons for the poor awareness of people over the environmental issues. There are several methods available for Factor Analysis. But the Principal Factor Method with Orthogonal Varimax Rotation applied as it is mostly used and widely available in Factor Analysis Computer Programme (FACP).



**4. CHI – SQUARE TEST**

To study the association between the select socio demographic characteristics of the sample respondents and their awareness on environmental issues chi – square test was used. The formula used for the study is :

$$\text{Chi Square Value} = \sum \left( \frac{(O - E)^2}{E} \right) \text{ With (c-1) (r-1) degrees of freedom}$$

Where, O = Observed Value

E = Expected Value

$$E = \frac{\text{Row Total} \times \text{Column Total}}{\text{Grand Total}}$$

**5. CRONBACH'S ALPHA OF RELIABILITY TEST ESTIMATES**

The overall reliability of variables used in the study had been tested with the help of Cronbach Alpha model.

**PERIOD OF STUDY**

The sample respondents were contacted and their responses recorded during the period of January - March 2013.

**LIMITATIONS OF THE STUDY**

The limitations of the present study are:

1. The researcher by considering her constraints in time, cost and efforts, had selected only 250 respondents across the state, that too from 10 districts only. Therefore, the results of the study may lack replication elsewhere.
2. Samples were chosen at random by following convenient sampling method. It has its own defects too.
3. Environmental issues taken for the study area are only 25. But however International level, the issues currently identified are more than 57. The present study by confining to only twenty five, ascertaining the level of awareness on environmental issues in the study area may not be a full - fledged one.

**RESULT OF DATA ANALYSIS**

The results of data analysis are given in following tables.

Table 1 shows the socio- demographic characteristics of sample respondents.

**TABLE 1: SOCIO - DEMOGRAPHIC CHARACTERISTICS OF SAMPLE RESPONDENTS**

S.No	Socio Demographic Characteristics	Category	Number of Respondents	Percentage
1	Age	Upto 25	53	21.20
		Between 26 and 50	120	48.00
		Above 50	77	30.80
2	Gender	Male	134	53.60
		Female	116	46.40
3	Educational qualification	No formal education	77	30.80
		Schooling	84	33.60
		College	51	20.40
		Professional	38	15.20
4	Community	Forward	46	18.40
		Backward	75	30.00
		Most backward	70	28.00
		SC/ ST	59	23.60
5	Occupation	Housewives	73	29.20
		Students	57	22.80
		Self employed	67	26.80
		Govt. employed	53	21.20
6	Family Income	Less than Rs.20000	75	30.00
		Between Rs.20000 and Rs.40000	113	45.20
		Above Rs.40000	62	24.80
7	Family size	Upto3	70	28.00
		Between 3 and 5	114	45.60
		Above 5	66	26.40
8	Place of residence	Urban	116	46.40
		Rural	134	53.60
9	Source of information	Media/ advertising	60	24.00
		Local bodies	81	32.40
		Non-governmental organizations	29	11.60
		Others	80	32.00
10	Ability	Not so able	87	34.80
		Some-what able	83	33.20
		Fully able	80	32.00

Source: Primary data

Table 2 exhibits the overall awareness level of respondents over the selected 25 environmental issues.

**TABLE 2: OVERALL AWARENESS LEVELS OF RESPONDENTS OVER ENVIRONMENTAL ISSUES (3 – Point Scale Analysis)**

S.No	Environmental Issues	Fully Aware (n x 3)	Somewhat Aware (n x 2)	No Idea (n x 1)	Total Score	Awareness Level
1	Air pollution	549 (183)	84 (42)	25 (25)	658	H
2	Light pollution	75 (25)	76 (38)	187 (187)	338	L
3	Deforestation	528 (176)	68 (34)	40 (40)	636	H
4	Noise pollution	102 (34)	62 (31)	185 (185)	349	L
5	Radioactive contamination	12 (4)	14 (7)	239 (239)	265	L
6	Forest preservation	156 (52)	112 (56)	142 (142)	410	M
7	Global warming	213 (71)	190 (95)	84 (84)	487	M
8	Waste control	522 (174)	62 (31)	45 (45)	629	H
9	Waste disposal	486 (162)	56 (28)	60 (60)	602	H
10	Eco –friendly product	207 (69)	170 (85)	96 (96)	473	M
11	Resource depletion	105 (35)	112 (56)	159 (159)	376	M
12	Energy efficient bulbs	162 (54)	134 (67)	129 (129)	425	M
13	Water pollution	537 (179)	80 (40)	31 (31)	648	H
14	Alternative energy sources	129 (43)	94 (47)	160 (160)	383	M
15	Recycling	171 (57)	70 (35)	158 (158)	399	M
16	Visual pollution	36 (12)	52 (26)	212 (212)	300	L
17	Harmful household discharges	483 (161)	50 (25)	64 (64)	597	H
18	Soil pollution / erosion	531 (177)	70 (35)	38 (38)	639	H
19	Bio pollutants	15 (5)	8 (4)	241 (241)	264	L
20	Resource conservation	141 (47)	134 (67)	136 (136)	411	M
21	Depleting ground water level	114 (38)	102 (51)	161 (161)	377	M
22	Nuclear pollution	57 (19)	48 (24)	207 (207)	312	L
23	Species preservation	153 (51)	84 (42)	157 (157)	394	M
24	Discharge from industries	462 (154)	54 (27)	69 (69)	585	H
25	Reusable containers	123 (41)	126 (63)	135 (135)	384	M

Source : Primary data

(L – Low, M - Medium, H – High)

Table 3 shows the result of the test of reliability of variables used in Factor Analysis.

TABLE 3: RELIABILITY TABLE

Number of Scale Variables	Cronbach's Alpha
15	0.984

Source: Computed data

**Reasons for poor awareness of sample respondents over environmental issues**

The results of factor analysis used for ascertaining the specific reasons for the poor awareness of respondents on environmental issues are given in Table 4.

TABLE 4: ROTATED COMPONENT FACTOR MATRIX

S. No	Factors for poor awareness	Variable	Factor loading	Reliability coefficients	Eigen value	Percentage of variance
1	Lack of Individual factor	Not aware of Eco- Friendly products	0.975	0.998	4.371	29.140
		Not realizing the benefits of being Eco Friendly	0.972			
		Not advising people found to be poor in maintaining environment	0.972			
		Not reporting the environmental hazards found nearby to local authorities	0.967			
2	Business and industry factor	Abnormally using plastic materials	0.838	0.899	2.814	18.760
		Discharging excessive sewage and waste	0.838			
		Not much caring of smoke, chemical effluents , odour etc.	0.734			
		Not much knowing the effect of industrial units on health of humans and environment	0.734			
3	Local bodies factor	Representatives of local bodies not much aware of environmental issues	0.952	0.799	2.597	17.312
		Waste and garbage disposal mechanism ineffective	0.952			
		Complaints are not attended properly	0.531			
4	Poor media campaign factor	Not seen much local advertisements in protecting environmental issues	0.971	0.996	2.302	15.347
		Not much coverage given by state and national level media	0.971			
5	Ineffective laws factor	Laws protecting environment not known to me	0.871	0.973	1.381	9.208
		Law enforcing authorities are mostly negligent	0.613			
Cumulative percentage of variance						89.768

Source: Primary Data

The association between the socio – demographic variables of respondents and their level of awareness on environmental issues was studied using Chi – square test. Relevant null hypotheses were framed and the final results arrived are presented in Table.5.

TABLE 5: RESULTS OF CHI – SQUARE TEST

Socio Economic Factors	Calculated value	Degrees of freedom	Table value	Results
Age	2.805	4	9.49	Accepted
Gender	0.861	2	5.99	Accepted
Educational status	1.556	6	12.6	Accepted
Community	23.781	6	12.6	Rejected
Occupation	2.735	6	12.6	Accepted
Family income	9.500	4	9.49	Rejected
Family size	32.478	4	9.49	Rejected
Place of residence	9.917	2	5.99	Rejected

Source: Computed data

## FINDINGS AND INTREPRETATIONS

From Table 1 it is evident that the respondents belonging to the category of age between 26 and 50 (48.00) , male (53.60), schooling (33.60 percent), backward (30.00 percent), housewives (29.20 percent), family income between Rs.20,000 and Rs. 40,000 (45.20 percent), Family size of between 3 and 5 (45.60 percent), rural (53.60 percent), local bodies (32.40 percent) and ability to discuss 'not so able' (34.80 percent) were dominating the sample.

Table 2 shows that in respect of issues such as 'air pollution', 'deforestation', 'waste control', 'water pollution', 'soil pollution', 'waste disposal', 'harmful household discharges' and 'discharge from industries', the awareness level of respondents were at higher level as their scores were fell above 500. In respect of issues such as 'global warming', 'eco – friendly products', 'energy efficient bulbs', 'alternative energy uses', 'resource conservation', 'depleting ground water level', 'forest preservation', 'reuseable containers', 'recycling' and 'species conservation', their level of awareness was at moderate level, as their scores fell between 375 and 500. In respect of remaining issues such as 'light pollution', 'noise pollution', 'visual pollution', 'bio – pollutants', 'radio – active contamination' and 'nuclear pollution', their level of awareness was at poor level, as their scores fell below 250 and 375.

Table 3 shows that the Cronbach Alpha Co- efficient of variable stood at 0.984. As it is greater than 0.7, it is assumed that the variables used in the factor analysis were reliable.

It is known from Table.4, that the rotated factor matrix of Factor Analysis had given five factor solutions with the cumulative percentage variable of 89.768. The First Factor (F1) (variance 29.140) contains four variables, namely 'Not aware of Eco – Friendly product', 'Not realizing the benefits of being Eco- Friendly', 'Not advising people found to be poor in maintaining environment' and 'Not reporting the environmental hazards found nearby to local authorities' and it was named as "Lack of Individual Factor". The Second Factor (F2) (Variance 18.760) contains four variables, namely 'Abnormally using of plastic materials', 'Discharging excessive sewage and waste', 'Not much caring of smoke, chemical effluents, odour etc'. and 'Not much knowing the effect of industrial units on health of humans and environment' and it was named as "Business and Industry Factor". The Third Factor (F3) (Variance 17.312) contains three variables, namely 'Representatives of local bodies not much aware of environmental issues', 'Waste and garbage disposal mechanism ineffective' and 'Complaints are not attended properly' and it was named as "Local Bodies Factor". The Fourth Factor (F4) (Variance 15.347) contains two variables, namely 'Not seen much local advertisements in protecting environmental issues' and 'Not much coverage given by State and National level media' and it was named as "Poor Media Campaign". And the last Fifth Factor (F5) contains two variables, namely 'Laws protecting environment not known to me' and 'Law enforcing authorities are mostly negligent', and it was named as "Ineffective Laws Factor". It is finally inferred from the analysis that these five factors were responsible for the poor awareness of respondents over environmental issues of the state.

From the Table 5 it is clear that the profile variables of respondents such as age, gender, education and occupation did not influence their level of awareness of environmental issues, whereas the variables such as family income, family size, community and place of residence did influence their level of awareness.

## SUGGESTIONS AND CONCLUSION

The people of Tamil Nadu both at aggregative and disaggregative level were unevenly aware and knowledgeable of the various environmental issues and developments considered for the study. The Western Ghats which is mostly stretching across the state is facing serious environmental threats from four major issues such as deforestation, poor species preservation, increasing human habitation and soil erosion. Truthless laws, disconcerted efforts of government and local bodies and ineffective acts of NGO's had failed to take forward the environment - protection movement on a mass scale. It is also evidenced that the so called societal organs like local bodies, business and industry and mass media who had to play a crucial role in protecting environment failed miserably in educating and preventing public from their unmindful actions which grievously injuring environment. All these hamper the growth of green consumerism in the country.

As a species, we are doomed if we continue our current way of life of giving scant respect to environment. But it is not too late if we take responsibility individually. The government, non-governmental organizations and corporates should take efforts in their own way influencing all the sections of society by their genuine environment protection initiatives. Especially the time has come for corporates to prove their social responsibility by marketing green ideas more intensively to make people fully aware and knowledgeable of environmental problems and issues. In the words of Iain Stewart, "we are locked in a death struggle with our mother, and there is going to be only one victor, and we all know who it is".

The words of Prof. Vasant Natarajan (IIM - Bangalore) could be aptly recalled to conclude this article; he says 'We have to do something. The very survival of humankind is at stake now... Every civilization in human history has died for one reason or another, but it has atleast thrived elsewhere the conditions were different. But there is no second earth to go to when we make our planet uninhabitable.

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## REFINED HR SCENARIO IN INDIAN IT INDUSTRY

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**ABSTRACT**

IT sector is rapidly growing industry in India and HR requirements of Indian IT Industry are quite different from traditional industrial sectors. The IT companies have to be creative, innovative and knowledgeable. This can be achieved through human capital. Perhaps, this is the prime challenge for HR in the IT-industry. The human resource function has gone from the traditional hire and fire role to a strategic partner at the table with main operations, building company politics and corporate culture. Now the role of HR-manager is HR-facilitator who has to involve the whole organization in this process and act as a guide, coach, counselor and, finally, facilitator. Indian IT industry is witnessing a high growth rate. The sector is recruiting more and more technical and professional people. With the immense recruitments and high attrition rate, organizations focus on higher compensation packages. This paper focuses on the role of HR department to create an environment that stimulates the creation of knowledge and discusses the problems and challenges faced by HR and key responsibility areas a HR manager to concentrate to make his role more effective and to create work culture for mutual benefits of the people and the organization.

**KEYWORDS**

Attrition, Pay-for-performance, Recession, Recruitment, Retention.

**1. INTRODUCTION**

Human Resource Management (HRM) has a long history in India, as reflected by Kautilya's accounts in the "Artha Shastra". HRM in the 4th century B.C. was more about logical but simple procedures and dividing the work force into 'Shrenis'. Today, India is more strategically positioned in the global corporate map and HRM has become more complex. Global perceptions see India's human resource as a low-cost, highly skilled, dedicated and knowledgeable workforce hence it has also become a major outsourcing ground. Clearly HR departments are evolving in our country. From an administrative perspective, the focus is now on a strategic outlook where talent HR professionals look at improving the work environment and plan out human resource needs. We are now living in knowledge society. We have also welcomed the new millennium with great fanfare and hope. We have to face broad challenges in this new millennium. We are having fast moving IT companies in this arena; they have shown their business excellence through optimum utilization of IT. This IT boom has introduced great challenges for these companies.

The IT industry is a service industry. The success of an organization is determined by the ability to offer quality service to individuals and organizations. This leads us to the fact that the creativity, innovativeness, knowledge and skill of employees are important assets. How to manage these assets is the challenge that the IT industry is facing. It is not capital or finance or marketing management that gives the competitive edge but rather how to manage the human resources whose intellectual applications drive the business.

In addition to the conventional personnel management tasks, HR in software industries have to focus more on the following human resources management aspects.

**MANAGING KNOWLEDGE WORKERS**

Essentially, here we are looking at different kind of people who does not obey the principles of management for the traditional group. This boils down to higher educational qualifications, taking up responsibilities at a lesser age and experience, high bargaining power due to the knowledge and skills in hand, high demand for the knowledge workers, and techno suaveness. The clear shift is seen in terms of organization career commitment to individualized career management. Managing this set of people is essential for the growth of any industry but especially the IT, BPOs and other knowledge based sectors.

**MANAGING TECHNOLOGICAL CHALLENGES**

In every arena organizations are getting more and more technologically oriented. Though it is not in the main run after the initial debates, preparing the work force to accept technological changes is a major challenge. We have seen sectors like banking undergoing revolutionary changes enabled by technology. It is a huge challenge to bring in IT and other technology acceptance all levels in organizations.

**COMPETENCE OF HR MANAGERS**

As it is more and more accepted that lot of success of organizations depend on the human capital, this boils to recruiting the best, managing the best and retaining the best. Clearly HR managers have a role in this process. Often it is discussed about lack of competence of HR managers in understanding the business imperative. There is now a need to develop competent HR professionals who are sound in HR management practices with strong business knowledge.

**DEVELOPING LEADERSHIP**

It is quite interesting to note that there is less importance given to developing leadership at the organizational level. Though leadership is discussed on basis of traits and certain qualities, at an organizational level it is more based on knowledge. The challenge is to develop individuals who have performance potential on basis of past record and knowledge based expertise in to business leaders by imparting them with the necessary "soft skills".

**MANAGING CHANGE**

Business environment in India is volatile. There is boom in terms of opportunities brought forward by globalization. However this is also leading to many interventions in terms of restructuring, turnaround, mergers, downsizing, etc. Research has clearly shown that the success of these interventions is heavily dependent on managing the people issues in the process. HR has a pivotal role to play here.

**2. HR CHALLENGES IN INDIA**

Human resource element works towards the Vision, Mission and Goals of an organization. The role of Human Resource Department is crucial as it deals with the most sensitive yet valuable resource of the company apart from ensuring smooth functioning of the entire business. Apart from domain re-skilling, the emerging HR professional has to be skilled cross-functionally. It has never been better for the right thinking, right-skilled HR professional. Undoubtedly, Human



Resource Management is more than mere recruiting and managing people. The following are some of the most commonly faced hurdles pertaining to the Indian context.

- **Managing globalization:** It is important for an HR Manager to study people management practices before implementing new practices which are global in nature. It has become a challenge for the HR to educate its workforce on how globalization can be leveraged and how an individual employee benefits or is affected by it. Instead of thrusting new practices upon them, it is ideal to study the existing practices which are in place.
- **Developing leadership skills:** It is not just about knowledge, experience and expertise it is also about developing the right soft skills to give shape to the future leaders. Since the global economic and industrial scenario is very volatile and dynamic, what is required now is a skill set in the workforce which distinguishes them as team leaders.
- **Managing change:** Change management is the call of the day with big organizations integrating Six Sigma methodologies in their businesses. Change management defines the response of the business to the changing external and internal environment. The industrial growth scenario in India demands that there should be change brought about within all factions of the industry. But there are internal and external forces which resist the change. It is a huge challenge to influence the resisting forces with the organization, manage internal conflicts, motivate them to embrace change and implement the changes.
- **Developing work ethics:** With back to back slumps in the global economy, India has not remained unscathed. Employee morals and loyalty are being tested in a business's day to the day functioning. It has become very important to re-instill cultural values, loyalty, respect for the weak and elderly, and infuse qualities like empathy, charity, austerity, team spirits, ethics and bonding in the workforce.
- **Retaining Talent:** This is one of the major challenges which HRM faces today. Poaching and cut-throat competition has given an impetus to high remuneration to the deserving. People have gained exposure and their yearning to rise is seen them changing loyalty and organizations very frequently. This is especially observed in the IT and ITES sector. To manage low attrition rates and retain talent has become a mammoth hurdle which all organizations want to cross in order to reach their goals.
- **Managing fast changing technological trends:** Most large and medium scale organizations today prefer to be technologically oriented. The technological trends in today's global scenario are fast changing. Educating the human resource about these changes, upgrading their knowledge and motivating them to learn, absorb and come out of their comfort zones is a great challenge faced by many organizations.
- **Developing Accountability:** With the advent of Six Sigma methodologies, organizations have lowered their tolerance levels for mistakes, errors and delays. It is a challenge which HRM in India is facing like its global counterparts. It is not easy to train people to shoulder responsibility.
- **Managing workforce stress and employment relations:** HR is the face of an organization. It hires and fires employees and if the HR of an organization is not empathic towards its workforce it does not help in employment relations. This factor is fast becoming a challenge for HRM especially in sectors like hospitality, IT and allied support services, media and entertainment.
- **Managing inter-functional conflict:** Earlier it was the friction between different levels of an organization and now the new emerging challenge for the HR is to manage inter-functional conflict within an organization. With organizational restructuring becoming common in the past few years, disputes and friction between different functions has been on the rise.
- **Managing workplace diversity:** With globalization and India's economy changing gears to accelerate growth, organizations hire as well depend on a people from different countries, cultures and ethnicity. To manage the diverse workforce who have fairly diverse physiological and the psychological influences, is also a huge challenge for the HR in the emerging Indian economy.

### 3. HR CHALLENGES IN IT INDUSTRY

HR managers will be able to derive the maximum advantage to successfully develop the people of the organization through effective feedback and by adopting appropriate strategies to align the people with the business of the organization. They would be able to effectively measure and rate performance of the people and scientifically base their strategic decisions like promotion and rewards, training designs, sustaining an environment of motivation and effective work culture for mutual benefits of the people and the organization.

The main challenges to the IT Industry are:

#### 3.1 RECRUITMENT

The major issue would be of getting the right type of person. The issue would be that find a person with the required skills and experience, and also he must be suitable for the organization. Finding such a suitable person is the obstacle that we will have to cross over.

Recruitment planning is most important component in new people management with special reference to IT industry. We have to deal with human assets so it becomes important and have good quality of people in the organization. We have to take the recruitment planning in very serious manner to ensure that we can get best talent in the organization.

The challenge does not stop with recruiting the right person but with how you are going to manage the performance of your employees. The challenge would be to create a performance culture wherein opportunities are provided for enhanced performance and where giving out optimum performance becomes a way of life.

#### 3.2 TRAINING AND DEVELOPMENT

In the IT industry training takes a new connotation. It will not be just identifying training needs and giving the required training. It is foreseeing and anticipating the requirements and develop suitable training so that the employees are well equipped to handle the challenges forehead.

People have to be groomed to get in tune with the performance culture. Creating an environment that stimulates the creation of knowledge, its sustenance and its dissipation throughout the organization will be the challenge for organizations in the future. HR will have to involve the whole organization in this process and act as a guide, counselor and facilitator. Chalk out a suitable strategy for training & development so that employees are well equipped to handle the challenges in advance.

#### 3.3 ATTRITION

IT companies are having high degree of attrition. The challenge facing software companies is how to keep this as low as possible. Various companies adopt different techniques to retain their employees like high pay packets, ESOP, other benefits. It depends on the opportunities that are offered to employees and organizational climate. Employees are given the opportunity to learn and grow in the company itself. They are given a lot of technical training and exposure to various types of project. The challenging work makes it difficult to leave the organization.

#### 3.4 RETENTION AND MOTIVATION

Retention and motivation of personnel are major HR concerns today. People in management of human capital in IT organizations have observed that the average tenure for an IT professional is less than three years. Further, the use of new technologies, the support of learning and training, and a challenging environment ranked higher than competitive pay structures as effective retention practices. Money was a prime motivator for 'starters', but for those into their third or fourth jobs, their value-addition to the organization was more important. Monetarily, offering 'the best salaries in industry' is the minimum every company is doing, apart from performance-based bonuses, long-service awards, and stock options. Many organizations frequently conduct employee satisfaction and organization climate surveys and are setting up Manpower Allocation Cells (MAC) to assign 'the right project to the right person'.

#### 3.5 ATTRACTING THE BEST TALENT

In a tight job market, many organizations often experience precipitous and simultaneous demands for the same kinds of professionals. In their quest for manpower, they are searching talent around the world. In such a seller's market, software companies are striving to understand which organizational, job, and reward factors contribute to attracting the best talent one having the right blend of technical and person-bound skills. This would mean a knowledge of 'the tools of the trade' combined with conceptualization and communication skills, capacity for analytical and logical thinking, leadership and team building,

creativity and innovation. The Indian software industry suffers from a shortage of experienced people such as systems analysts and project managers, and attracting them is a key HR challenge.

### 3.6 COMPENSATION AND REWARD

The IT industry is one of the high paying industry. This is very competitive industry, we have to attract best talent, offer best possible compensation package to the employees. Increasing demands of technology coupled with a short supply of professionals (with the requisite expertise) has increased the costs of delivering the technology. This makes incentive compensation a significant feature, with the result that software companies have moved from conventional pay-for-time methods to a combination of pay-for-knowledge and pay-for-performance plans. With the determinants of pay being profit, performance and value-addition, emphasis is now on profit sharing (employee stock option plans ESOP) or performance-based pay, keeping in view the long-term organizational objectives rather than short-term production-based bonuses. Skills, competencies, and commitment supersede loyalty, hard work and length of service. This pressurizes HR teams to devise optimized compensation packages, although compensation is not the motivator in this industry.

### 3.7 ENCOURAGING QUALITY AND CUSTOMER FOCUS

Today's corporate culture needs to actively support quality and customer orientation. With globalization and rapid technological change, quality is of utmost importance for the Indian companies, which earn most of their revenues through exports. Hence, the HR professional as a strategic partner needs to encourage a culture of superior quality to ensure customer satisfaction. To be competitive today, an organization needs to be customer responsive.

Responsiveness includes innovation, quick decision-making, leading an industry in price or value, and effectively linking with suppliers and vendors to build a value chain for customers. Employee attitudes correlate highly with customer attitude. The shift to a customer focus redirects attention from the firm to the value chain in which it is embedded. HR practices within a firm should consequently be extended to suppliers and customers outside the firm.

### 3.8 RECESSION

This recession affects almost all the fields especially IT field. To overcome the adverse effect of the economic slowdown, we should plan an effective human resource policy at macro level. Human resource plan is designed to pay attention to shaping the priorities of the HR function than on supporting activities relating to the organization's functioning as a whole.

Human resource management is responsible for seeing that employees of an organization are utilized in the most efficient and economical way possible. During recessionary times, when budgets are tight, this vital human resources role becomes even more important to keep a company on fiscal track.

## 4. CRUCIAL ROLE OF HR MANAGERS

With lifetime employment in one company not on the agenda of most employees, jobs will become short term. Today's high-tech employees desire a continuous up-gradation of skills, and want work to be exciting and entertaining a trend that requires designing work systems that fulfill such expectations. As employees gain greater expertise and control over their careers, they would reinvest their gain back into their work.

HR practitioners must also play a proactive role in software industry. As business partners, they need to be aware of business strategies, and the opportunities and threats facing the organization. As strategists, HR professionals require to achieve integration and fit to an organization's business strategy. As interventionists, they need to adopt an all-embracing approach to understanding organizational issues, and their effect on people.

### IMPACTS: HOW THESE CHALLENGES HAVE AFFECTED US

Any organization in the IT industry will have to face these challenges. We are leaders in the industry. And the reason we are leaders is of the fact that we have been able to meet these challenges quite effectively. As far as recruitment is concerned we have been able to address the issue effectively. We have an excellent databank where updating takes place on a daily basis. This serves as the major chunk that addresses our recruitment needs. Further we also use the services of placement agencies. The real catch lies in our selection process. All the probable candidates have to go through a battery of tests that not only test their technical skills but their all-round personality to find out if they will fit into the job as well as into organizations culture. The rigorous selection process ensures that we get people who will fit into a culture that is our own. But this challenge of recruiting the right person is a continuous one and one that needs continuous refinement.

In the software industry where skill decline is very fast and needs giving technical training to the employees on a continuous basis. We are one of the very few who provide our employees with the opportunity to get trained on various platforms. This apart from keeping our employees highly skilled, gives them a sense of security. Training is also given in personality development, team working related areas etc to enhance the quality of life of employees.

As discussed earlier the most important of all challenges is in culture building. Now all our efforts are diverted in bringing about a performance driven culture. The very tight schedule ensures that our employees have to perform to the optimum. Apart from this the various systems that we have put in place like the performance management system helps us to work towards achieving a performance driven culture. We are constantly refining our practices in order create an atmosphere where our employees are able to perform to their full potential.

### SOLUTIONS: WHERE HR CAN ADD THE MOST VALUE

Finally, as innovators, they should introduce new processes and procedures, which they believe will increase organizational effectiveness. With the advent of a work situation where more and more companies have to concede that their valued employees are leaving them, a new concept of career and human resource management is bound to emerge. The focus of this new paradigm should not only be to attract, motivate and retain key 'knowledge workers', but also on how to reinvent careers when the loyalty of the employees is to their 'brain ware' rather than to the organization.

- **Start the culture conversation at all levels.** One way to accomplish this is to conduct a cultural assessment or audit of organization through employee surveys, focus groups or interviews. Review organizational history, leadership styles, and HR programming and industry practices to determine what currently drives and reinforces the culture. Finally, what is your customer experience? What cultural elements are obvious to customers? Is culture aligned with business strategy? What needs to change? This can be the basis for healthy discussion at team meetings and employee chat sessions.
- **Develop a business case for cultural change.** Why is the change needed? How will desired changes in culture support the business strategy?
- **Work with the senior leadership team to determine the desired culture.** Core values, desired behaviors and shared vision are essential for a positive culture change effort to succeed. Every leader must embrace the need to change.
- **Develop an agenda or action plan for enhancing the culture or bringing about change.** Start with the highest priorities and work on the toughest issues. For culture to become self-replicating, the way things are done will have to reinforce the core values and the culture.
- **Communicate what needs to change and why.** Solicit input from people. Once the needed changes and process for change is defined, tell people what is expected. What are the rewards for changing, and the consequences for more of the same?
- **Change the organizational structure to enable change.** Find new ways to accomplish work tasks. Use teams for one-time projects. Broaden roles and responsibilities.
- **Acquire talent based on cultural fit.** Identify the characteristics of people who exhibit those behaviors that you've identified as desirable. The people who fit and thrive in your culture will perpetuate that culture in everything they do. If you have to choose between the candidate who has better skills or knowledge but doesn't fit, and a candidate who is slightly less qualified but fits culturally, choose the slightly less qualified person and provide the necessary training or on-the-job experience. Get rid of those who don't fit in the culture.
- **Redesign on-boarding process.** Make sure that every new hire knows what it will take to fit in, and understands the cultural imperatives. Talk about the ways of working that lead to success and those that will derail careers. Create legendary stories of successes and failures.
- **Create cultural messages.** Be sure that every meeting, every training program, every communication to people includes cultural messaging and reinforces the values, mission, traditions and practices.

- **Involve everyone.** Southwest Airlines has a culture committee, but there are many ways to get people involved. Try focus groups around topics. Form cross functional teams. Call random groups of employees together for monthly breakfast or lunch meetings. Engage the help and support of a group of passionate, committed people to identify cultural disconnects and recommend remedies.
- **Build an internal brand that supports the external brand.** Make a promise to deliver a consistent employee experience. Be sure that your employees know the differentiating elements in their experience in the organization that will enhance their work lives and careers. Begin to create an employer of choice reputation internally and externally.
- **Recognize and reward results.** Your recognition and rewards should support the culture that you are working to reinforce.
- **Cultivate leaders who promote your culture.** Develop excellent leaders who will propel the culture down the ranks. Identify high potential leaders and promote them. Invest in leadership development programs. Be sure content reinforces cultural messages. Keep the good ones, and get rid of those who are unable to pass the culture on.
- **Make it interesting and fun.** Create contests, activities that enhance the culture. Decorate the office in inspiring ways. Celebrations and events can reinforce the message.
- **Use of HR tools.** Something as mundane as the annual benefits enrollment can be a source of key cultural messages. Every training class should reinforce the basic behaviors and values that reinforce the culture. Performance review forms should measure cultural fit, as well as, job performance.
- **No one should be locked out of the efforts to build a high-performance culture.** Culture has to become the DNA that forms the building blocks over everything else. So the entire organization must have a role in keeping it alive. Work with corporate communications, advertising, and marketing to capture the culture messages and tout these internally and externally.

## 5. KEY RESPONSIBILITY AREAS OF HR MANAGERS

As HR Managers, the deliverables are quite diverse. The key HR Manager Responsibility areas to make HR role effective are constantly evolving based on the life stage of the business and organization. The following are some mandatory activities to be taken care of in Human Resource Department that forms an integral part of HR Function in any organization.

### HR TEAM EFFECTIVENESS FOR HR EFFICIENCY

- Frame a clear and easily implementable HR Policies
- Nurture and develop a motivated HR Team to meet business requirement
- Develop the collective knowledge of the HR team to handle complex and crisis situation arising due to dynamic and changing business environment
- Create a complementing skills based team such that various HR aspects can be addressed and there are varied competencies and skills the team has to be handle the entire gamut of HR responsibilities ranging from HR design to HR delivery. E.g. recruitment specialist, L&D experts, Business HR
- Plan and implement an effective HR Plan that is aligned to Business Plan and overall organization people agenda

### DELIVER BUSINESS EXPECTATIONS TO ATTAIN HR CREDIBILITY

- Execute manpower planning and budgeting to have a road-map for recruitment assignments
- Manpower hiring as per the recruitment plan agreed along with the Business heads/department heads
- Keep ears to the ground and reach out to all employees through communication with employees at regular intervals to gather insights @ workplace and feed them back appropriately to the leadership team of the organization
- Plan and execute suitable interventions to keep the employees motivated
- Act as a business partner and provide dashboards/analytics to business heads/department heads to help them have a pulse of their team
- Provide employee development and counseling assistance to employees /team members to enhance employee performance and productivity
- Take adequate measures to retain good employees, ring fence high potential employees

### HR DELIVERY AGENDA TO EXECUTIVE EFFECTIVE HR PRACTICES

- Ensure Statutory Compliant status at all times
- In case of a widespread organization, HR visit calendar to all locations is made and followed
- Executing "Employee Engagement" initiatives to keep people together and make the workplace exciting, rewarding and engaging
- Drive an effective Learning and development agenda that impacts the employees and the businesses
- Evaluate and Improve the current HR Practices to keep with time and external benchmarks
- Update HR policies in line with the business and organization requirement
- Keeping and updated Employee Handbook with all relevant details and information
- Design, update and share SOPs of all HR processes
- Conduct periodical employee surveys to collate insights @ workplace and in turn design employee interventions accordingly to address concern areas
- Support and counsel business managers to effectively manage teams to ensure higher employee productivity
- Have an updated repository of Job descriptions for all roles in the organization along with measurable performance indicators for each role
- Maintain employee records and files in order for ease of reference (both On-line and physical copies of the records)
- Communicate with employees and business heads for better alignment
- Be smart to handle dynamics at the workplace and help employees to overcome crisis situation

## 6. CONCLUSION

'Knowledge workers' has become a buzzword in today's IT scenario. Software professionals are professionally qualified and young knowledge workers with very high levels of ambition and aspiration. The growth of IT companies worldwide depends on its people and the intellectual capital it possesses.

HR managers in Indian IT Industry must keep the sensitive nature of IT professionals and state of greater opportunities outside in mind for devising HR policies for their organizations. The role of HR manager is shifting from that of a protector and screener to the role of a planner and change agent. HR managers will be able to derive the maximum advantage to successfully develop the people of the organization through effective feedback and by adopting appropriate strategies to align the people with the business of the organization.

Finally, HR is a heart of IT Company and a helping hand for the top-management, developers, company growth, working atmosphere and entertainment. Successful HR practices in IT organizations, apart from cultivating a motivational work culture, bring in effectiveness, efficiency, quality, productivity, innovation and profitability.

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**AN ANALYSIS OF FACTORS AFFECTING POST-HARVESTING FOOD LOSS IN PERISHABLE CHAIN**

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**ABSTRACT**

*The growing concern for nutritional and food security are greater emphasis on consumer needs. In addition to tough competition from other countries, it has opened a host of challenges and opportunities. The necessary incentives to farmers and producers with huge potential for processing and value addition of agro produce for creation of additional income to the farm families and avenues for employment generation. With greater awareness among the consumers for safety as well as nutritional quality of foods, there is tremendous scope of modernizing existing post-harvest operations of various agro-produce. The paper addresses the strength, weakness and the opportunity available for the sector to thrive. From the literature review few factors are identified for the post-harvesting factors which affect the food loss. To analyse the various factors discriminant analysis is used. The response is collected from all the key player in the perishable supply chain using multi stage sampling technique.*

**KEYWORDS**

Post-harvesting, Food loss, Supply Chain Management, Perishable produce.

**1. INTRODUCTION**

uccessfully marketing fresh horticulture produce begins with the production of quality products and it requires careful attention to the details involved in post-harvest handling which protects quality, nutrition value, economic value and assures food safety. Further inadequate storage, transportation, handling and processing has led to an unacceptable level of wastages and value loss. Moreover wastage is around 25 per cent of its annual food produce due to lack of storage, transport and associated infrastructure inadequacies that deprive the country of Rs580 billion (Dh32.37 billion) worth of food annually — which is 42 per cent of the annual food subsidy planned under the Food Security Bill. India may be a global economic power, but it is by no means a rich country that can afford such a luxury. A reduction in food wastage can save India about two-fifths of the subsidy, that could be deployed in development activities. FAO estimates that if the food wasted or lost globally could be reduced by just one quarter, this would be sufficient to feed the 870 million people suffering from chronic hunger in the world," said Mr Konuma. In the production of fruits and vegetables, we stay second next to China with a production share of 11.6 percent and 9.7 percent in fruits and vegetables respectively (FAO). But the value addition like processing industry contributes only 3 percent total fruit and vegetable produced. To a great extent, food losses and waste are symbolic of the inefficiencies of food systems and this explains "why food losses and waste are becoming so central to discussions on both food security and sustainable development," Swaminathan said.

**2. OBJECTIVE OF THE STUDY**

- To analyse the strength, weakness, opportunity and thread in the post harvesting industry.
- To understand the key external factors influencing the food loss in the supply chain.
- To examine the key management factors influencing the food loss in the supply chain.

**3. METHODOLOGY**

To study the existing post-harvest management practice lot of literature survey where made. For the purpose of study Tamilnadu state has been selected. As the research area is large and the population is too big the respondents were selected based on the multi-stage sampling from the population. The state of Tamilnadu is divided into seven agro-climatic zones. Based on the top production area as per season and crop report of major crops, seven districts are selected from each climatic zone. The major crops considered for the study are banana, mango, brinjal, tomato, ladies finger, onion and potato which contribute about 91% of the total F&V sector. In the second stage of sampling, a block is selected based on the top production as per season and crop report of major crops from the selected districts. From the population, the required sample size is determined using the statistical tool. In the third stage of sampling, a village is selected and the samples are selected within that village. From the determined sample size and based on the production area as per season of major crops, sample size to be collected from each village is determined. The intermediaries and buyers are selected based on cluster approach from both Chennai and Dindugal district. Based on the SCM model, we have made an attempt to understand the role of SCM in developing post-harvest management.

**4. RESULT AND DISCUSSION****4.1 SWOT ANALYSIS OF PRESENT POST-HARVEST MANAGEMENT****STRENGTH**

1. The state have high value perishable crops which possess high nutrition value, due to soil and climatic conditions.
2. The hill stations spotted in the Western ghats and in the middle of the state grow the vegetables like carrot, cabbage, cauliflower, potato etc., and temperate and sub-tropical fruits like plums, peaches, straw berries and plantation crops.
3. Perishable produce is supported well with the horticulture development in the form of National Horticulture Mission, Tamilnadu Agricultural University etc. Moreover State has got the entire needed technical where-withal, supported by a separate Horticulture College and Research Institute and Horticulture Research Stations in the State.
4. The innovation of cost effective post-harvesting equipment has been under taken by the universities which satisfy the needs of farmers.
5. Many leading agro processing equipment and machinery manufacturers are also located.

**WEAKNESS**

1. Most of the fruit crops are highly season-bound and hence the year-round production is not possible.
2. Lack of scientific technical and administrative manpower.



3. Lack of scientifically trained manpower to handle the processing machinery. Mostly mechanics operate and control the operation, hence penetration of new innovations are difficult.
4. Lack of supporting infrastructural facilities.
5. Lack of appropriate supply of perishable produce and fluctuating quantities.

**OPPORTUNITIES**

1. As the urbanization, industrialization and the family income have shown an increasing trend in the recent years, the effective demand for protective foods is growing. Hence there exist ample of demand for the quality fresh perishable production in the State.
2. Existing agro processing equipment is not capable of producing the desired quality product for upper class segment and export and hence technologies need to upgrade the existing processing infrastructure.
3. With increased income of Indian middle class and exposure to international processed products is increasing day by day. Hence there is ample opportunity for domestic processed product hence many upcoming entrepreneurs are willing to take up agro processing business.
4. Government is providing 100 percent rebate on profit for the first five years and 25 percent for next five years. 100 percent FDI is allowed in processing industry.
5. The crops of Indian origin due to their unique aroma and flavour are being sourced by developed countries at premium price. Hence their value addition and processing for export is getting attention of private players.

**THREADS**

1. High-cost of high-tech cultivation of horticulture crops and low financial capability of majority of farmers. Increase in number of small and marginal farmers.
2. Lack of awareness among the conventional processors about quality and safety codes and standards.
3. Long and fragmented supply chain, tiny and fragmented holdings and low technology.
4. Costly and inefficient transportation of raw and finished products.
5. Comparatively high cost of packaging and storage cost of finished produce

**4.2 EXTERNAL SUPPLY CHAIN MANAGEMENT FACTORS INFLUENCING FOOD LOSS**

Infrastructure, government policies, weather pattern which is not under the control of the supply chain players are analysed in the section. The impact of these factors play a key role in the impact of the food loss in the channel.

**TABLE 1: FRIEDMAN TEST FOR SIGNIFICANT DIFFERENCE BETWEEN MEAN RANKS TOWARDS REASON OF EXTERNAL FACTORS INFLUENCING FOOD LOSSES**

	Mean Rank	Rank	Chi square value	P value
1.Regulations and Policies	1.95	III	634.8	0.001**
2.Infrastructure	3.29	I		
3.Disease and insect infection	1.88	IV		
4.Weather patterns	2.87	II		

Infrastructure facilities like transportation, storage of perishable produce creates lot of problem. The damage of produce during transit account 30% admits report. From the table it is clear that with mean rank 3.29 the infrastructure tops the ranking. It is followed by sudden change in climate like cyclone, draught etc. makes the output to fluctuate during different seasons. Government regulation and disease infection ranks third and fourth.

**DISCRIMINANT ANALYSIS OF EXTERNAL FACTORS AFFECTING FOOD LOSS**

Discriminant analysis is used to distinguish between farmers, intermediaries and buyers based on the food loss due to external factors in the channel and the most important results are presented in this section.

Food loss due to external factors are measured using 4 statements. Based on this opinion of the key players, discriminate analysis is carried out to distinguish between farmers, buyers and intermediaries. The tests of equality of group means measure each independent variable's potential before the model is created. Wilks' lambda, the F statistic and its significance level are presented in the following table.

**TABLE 2: F TESTS OF EQUALITY OF GROUP MEANS OF EXTERNAL FACTORS**

	Farmers	Intermediaries	Buyers	Wilk's Lambda	F value	P value
Regulations & policies	2.6 (.81)	4.18 (.76)	3.14 (.77)	0.529	258.97	<0.001**
Infrastructure	4.38 (.80)	4.60 (.60)	4.46 (.61)	0.981	5.65	0.004**
Disease and pest infection	3.28 (.85)	2.64 (.95)	3.06 (.96)	0.894	34.29	<0.001**
Weather Pattern	4.35 (.83)	3.44 (.69)	4.12 (.69)	0.805	70.59	<0.001**

The above test displays the results of a one-way ANOVA for the independent variable using the grouping variable as the factor. According to the results in the table, out of 4 variables, 4 variables in discriminant model is significant, since P value is less than 0.01. Wilks' lambda is another measure of a variable's potential. Smaller values indicate the variable is better at discriminating between groups. The table suggests that regulations is best, followed by Weather pattern. The number of functions is equal to the number of discriminating variables. Here there are three grouping variables, therefore two functions are evaluated. From the significance table it is clear that two functions are significant as p value is less than 0.01.

**TABLE 3: CANONICAL DISCRIMINANT FUNCTION UNSTANDARDIZED COEFFICIENTS OF EXTERNAL FACTORS**

	Function	
	1	2
Regulations & policies (X <sub>1</sub> )	.882	.772
Infrastructure (X <sub>2</sub> )	.946	-1.106
Disease and pest infection (X <sub>3</sub> )	-.280	-.224
Weather pattern (X <sub>4</sub> )	-1.105	1.432
(Constant)	-1.573	-2.706

Based on the Canonical Discriminant Function coefficient, the linear discriminant equation can be written as

$$D1 = -1.57 + 0.88X_1 + 0.946X_2 - 0.28X_3 - 1.105X_4$$

$$D2 = -2.706 + 0.772X_1 - 1.106X_2 - 0.22X_3 + 1.43X_4$$

The classification table shows the practical results of using the discriminant model. Of the cases used to create the model, 370 of the 384 farmers (96.4%) are classified correctly. 105 of the 150 intermediaries (70 %) are classified correctly. 10 of the 50 buyers (18 %) are classified correctly Overall, 67.8% of the cases are classified correctly based on food loss during different stages in the channel.

## 4.3 MANAGEMENT FACTORS INFLUENCING FOOD LOSSES

Throughout the chain a proper organised setup is missing. Each players work independently for their benefit not consulting with the immediate key players. This situation results in chaos leaving no scope for managing the business. The divided work with mis-coordination makes a huge loss on perishable produce

TABLE 4: FRIEDMAN TEST FOR SIGNIFICANT DIFFERENCE BETWEEN MEAN RANKS TOWARDS REASON OF MANAGEMENT FACTORS ON FOOD LOSS

	Mean Rank	Rank	Chi square value	P value
Poor demand forecasting	1.84	IV	543.7	0.001**
Poor inventory management	2.19	III		
Poor logistics management	3.31	I		
Lack of handling procedure	2.66	II		

Table 6.5 shows the key players admit that the loss is incurred during transportation of goods which admits a mean rank of 3.31. Followed by the handling the process with mean rank of 2.66. During loading and unloading at various markets the product cause lot of damage. Poor inventory management ranks third with 2.19 as mean rank. There is no common procedure in fixing the priority for selecting the material in the inventory resulting in stagnation of produce in bumper season. Demand management is poor with less transparency in the chain.

## 4.3.1 DISCRIMINANT ANALYSIS FOR MANAGEMENT FACTORS AFFECTING FOOD LOSS

Discriminant analysis is used to distinguish between farmers, intermediaries and buyers based on the management factors affecting food loss in the channel and the most important results are presented in this section. Food loss due to management factors are measured using 4 statements. Based on this opinion of the key players, discriminate analysis is carried out to distinguish between farmers, buyers and intermediaries. The tests of equality of group means measure each independent variable's potential before the model is created. Wilks' lambda, the F statistic and its significance level are presented in the following table.

TABLE 5: F TESTS OF EQUALITY OF GROUP MEANS OF MANAGEMENT FACTORS

	Farmers	Intermediaries	Buyers	Wilks' lambda	F value	P value
Poor demand forecasting	2.82 (1.02)	2.82 (.68)	3.82 (.98)	0.918	25.82	<0.001**
Poor inventory management	2.85 (.91)	4.24 (.71)	3.44 (1.04)	0.666	145.63	<0.001**
Poor logistics facility	4.38 (.80)	4.30 (.75)	4.30 (.76)	0.998	.726	0.484
Lack of handling facility	3.99 (.86)	3.02 (.88)	4.00 (.96)	0.809	68.45	<0.001**

The above test displays the results of a one-way ANOVA for the independent variable using the grouping variable as the factor. According to the results in the table, out of 4 variables, 3 variables in discriminant model is significant, since P value is less than 0.01. . Wilks' lambda is another measure of a variable's potential. Smaller values indicate the variable is better at discriminating between groups. The table suggests that Storage facility is best, followed by material handling, processing etc.

TABLE 6: CANONICAL DISCRIMINANT FUNCTION UNSTANDARDIZED COEFFICIENTS OF MANAGEMENT FACTORS

	Function	
	1	2
Poor demand forecasting ( $X_1$ )	.735	1.007
Poor inventory management ( $X_2$ )	-1.274	.094
Poor logistics facility ( $X_3$ )	-.098	-.174
Lack of handling facility ( $X_4$ )	.558	.023
(Constant)	.348	-2.559

Based on the Canonical Discriminant Function coefficient, the linear discriminant equation can be written as

$$D1 = 0.35 + 0.73X_1 - 1.27X_2 - 0.09X_3 + 0.55X_4$$

$$D2 = -2.55 + 1.01X_1 + 0.094X_2 - 0.17X_3 + 0.023X_4$$

The classification table shows the practical results of using the discriminant model. Of the cases used to create the model, 366 of the 384 farmers (94.8%) are classified correctly. 114 of the 150 intermediaries (76 %) are classified correctly are classified correctly Overall, 82.4% of the cases are classified correctly based on food loss during different stages in the channel.

## 5. CONCLUSION AND RECOMMENDATIONS

Based on the above analysis, the lack of infrastructure and flexible weather pattern play important roles in food loss, which is external to the chain. From the discriminating analysis we could conclude that government regulation and weather pattern is discriminating among groups. Mean suggest that lack of government regulation is the problem to the intermediaries as they are the coordinating agent between the buyers and producers. Changing weather pattern is a problem for the farmers when compared with other key players. The study about the management factors show that poor logistics management and handling procedure are the key factors related to management which affect the food loss. From the discriminating analysis we could conclude that inventory management is discriminating with other groups. The mean suggests that the intermediaries' woe to more problems related to the food loss. Taking into consideration of few solid strength and opportunities available in the sector and the problem identified for food loss some of suggestions are formulated. Farmers could adopt cluster approach to use post harvesting techniques. As 90 percent of farmers belong to small and marginal farmers, updating to modern techniques is a difficult task as it involves huge cost. The farmers of a closely associated area can organize a group and can share post harvesting equipment among them.

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**ANALYSIS OF LIQUIDITY AND PROFITABILITY IN TEXTILE INDUSTRY IN INDIA**

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**ABSTRACT**

*The Indian textile industry has an overwhelming presence in the economic life of the country. Apart from providing one basic necessities of life, the textile industry also plays a pivotal role through its contribution to industrial output, employment generation and the export earnings of the country. Currently, it contributes about 14 percent to industrial production, 4 percent to the GDP and 12.53 percent to the country's export earnings. It provides direct employment to over 35 million people. The textile sector is the second largest provider of employment after agriculture. Thus, better liquidity, efficient in utilization of working capital components of this industry has direct bearing on the profitability of the industry and improvement of the economy of the nation. The present study has been undertaken to evaluate various facets of working capital, i.e., liquidity and efficiency in utilization of working capital components, and profitability in Cotton Textile Industry (CTI) and Man Made Textile Industry (MMTI).*

**KEYWORDS**

Cotton Textile Industry, Efficiency, Liquidity, Man Made Textile Industry, Profitability.

**INTRODUCTION**

The success of any industry is depends upon proper management of its liquidity and profitability in the long-run. The liquidity of the firm depends upon the way in which the current assets and current liabilities are managed, i.e., management of working capital. Working capital management is concerned with the problems that arise in attempting to manage the current assets, the current liabilities and the interrelationship that exists between them. The term current assets refer to those assets which in the ordinary course of business can be or will be converted into cash within one year without undergoing a diminution in value and without disrupting the operations of the firm. The major current assets are cash, marketable securities, accounts receivable and inventory. Current liabilities are those liabilities which are intended, at their inception, to be paid in the ordinary course of business, within a year, out of the current assets or earnings of the concern. The basic current liabilities are accounts payable, bills payable, bank overdraft, and outstanding expenses. The goal of working capital management is to manage the firm's current assets and liabilities in such a way that a satisfactory level of working capital is maintained so as to achieve the trade-off between liquidity and profitability. This is so because if the firm cannot maintain a satisfactory level of working capital, it is likely to become insolvent and may even be forced into bankruptcy. The current assets should be large enough to cover its current liabilities in order to ensure a reasonable margin of safety. Each of the current assets must be managed efficiently in order to maintain the liquidity of the firm while not keeping too high a level of any one of them. Each of the short term sources of financing must be continuously managed to ensure that they are obtained and used in the best possible way. The present paper is an attempt to study the liquidity, efficiency of working capital components, i.e., inventories and debtors, and profitability in textile industry in India.

**TEXTILE INDUSTRY IN INDIA**

The Indian textile industry has an overwhelming presence in the economic life of the country. Apart from providing one basic necessities of life, the textile industry also plays a pivotal role through its contribution to industrial output, employment generation and the export earnings of the country. Currently, it contributes about 14 percent to industrial production, 4 percent to the GDP and 12.53 percent to the country's export earnings. It provides direct employment to over 35 million people. The textile sector is the second largest provider of employment after agriculture. Thus, the growth and all round development of this industry has direct bearing on the improvement of the economy of the nation. Due to policy measures initiated by the government in the recent past, the Indian textile industry is in a stronger position than it was in the last six decades. The industry which was growing at 3-4 percent during the last six decades has now accelerated to an annual growth rate of 8-9 percent in value terms. The growth manifests through a consistent increase in production of fabric and investment. During 2009-10, the production of fabric was 59.76 billion sq. meters as compared to 45.38 billion sq. meters in 2004-05. The textile sector has witnessed a spurt in investment during the last five years increasing from Rs.15,032 crores in 2005-06 to Rs.66,233crores in 2006-07 to Rs.19,917crores in 2007-08, Rs.55,707crores in 2008-09. During 2009-10 investment was Rs.27, 611crores (provisional). It is expected that investment will touch Rs.1, 50,600crores by 2012. This enhanced investment will generate 17.37 million jobs (Comprising 12.02 million direct and 5.35 million indirect jobs) by 2012. The Indian textile industry and clothing industry is the cornerstone of the national economy and it contributes 13.14 percent to the country's merchandise exports. The exports of textile and clothing during 2004-05, 05-06, 06-07 were US\$ 14 billion, US\$ 17.52 billion and US\$ 18.73 billion, respectively. During 2007-08, textile exports from India weee US \$22.44 billion against the target of US \$ 25.06 billion. In 2008-09, due to global economic slowdown textile exports and clothing exports grew at a rate of 8-9 percent and touched a level of US \$23.49 billion. Among the managerial skills which have affected the performance of the industry, management of working capital is vital one. As current assets are only supporting assets, the investment in them should be kept as minimum as possible. Excess investment in current assets is not only unproductive but also an overhead. Contrary to this, the asset structure in cotton textile industry revealed that the ratio of current assets to total assets is nearly 60 per cent on an average. From the point of profitability, such a high proportion of current assets is unfavorable. Hence, current assets are to be managed effectively and efficiently so as to reduce investment in them to increase profitability and at the same time without adversely affecting liquidity. The present study has been undertaken to evaluate various facets of working capital, i.e., liquidity and efficiency in utilization of working capital components, and profitability in Cotton Textile Industry (CTI) and Man Made Textile Industry (MMTI). A brief review of literature is presented here before stating the objectives, methodology and plan of the study.

**REVIEW OF LITERATURE**

Considerable research has been done in the area of working capital management of which few studies have been reviewed. One of the first studies worth mentioning in the area of working capital management is the study of **National council of Applied Economic Research (NCAER) (1966)** which devoted mainly to the analysis of composition of the working capital in Sugar, Cement and Fertilizer Industries during the period from 1959 to 1963. **Mishra (1975)** analyzed the



problems of working capital of six large public enterprises during the period from 1960-61 to 1967-68. The three important components of working capital namely cash, receivables and inventory in the selected units have been thoroughly analyzed. The basic issues outlined in this study and the findings therein have gained currency and relevance to many of the units even today. **Agrawal (1983)** in his study relating to 34 large manufacturing and trading public limited companies, observed the use of modern control techniques in the areas of inventory, receivables and cash management. His study revealed that there exist sufficient scope for reduction in investment in almost all the segments of working capital. However the study tried to draw only general conclusions for all categories of industries and businesses covered in the sample. **Khandelwal (1985)** in his study analyzed the performance of working capital management in 40 small scale industries located in Jodhpur Industrial Estate. This study made a detailed analysis of performance of management of inventory, receivables, cash and financing aspects in the selected units from 1975-76 to 1979-80. **Rajeswara Rao (1985)** thoroughly examined the managerial aspects of inventories, receivables and advances and cash of certain Central Public Enterprises in India during 1971-72 to 1976-77. The study concluded that the policies and practices of working capital management in Public Enterprises are not useful for achieving the working capital management objectives. **Panda (1986)** studied the problems of working capital in 26 selected small manufacturing companies in the State of Orissa. The study covered the problems of adequacy, the choice, sources and problems of raising working capital. **Kamta Prasad Singh et.al's (1986)** study analyzed the effectiveness with which the working capital has been utilized in Indian Industries in general and the Fertilizer Industry in particular. This study has analyzed the different aspects of working capital management in the Fertilizer Corporation of India and its daughter units and compared them with that of Gujarat State Fertilizer Company (GSFC) Limited during the period from 1978-79 to 1982-83. **Panda and Satapathy's (1988)** study relates to the analysis of the structure of working capital in 10 selected private sector Cement Companies which are listed in different stock exchanges in India. This study was mainly based on the data obtained from the Stock Exchange Official Directory during 1969 to 1985. This study covered only broader aspects of working capital but failed to study intensively each component of working capital. **Jain (1988)** studied the current practices in the management of working capital in ten selected State Enterprises of Rajasthan and examined the management performance in this sphere. It also studied the possible remedial measures that could be used efficiently and effectively during 1980-84. It offered various suggestions for the improvement of working capital management enabling State Enterprises reduce their dependence on outside funds. **Mukharjee (1988)** studied the performance of management of working capital and its components in twenty Central Industrial and Manufacturing Undertakings which are engaged in the production of non-homogeneous items. This study covered a period of five years from 1974-75 to 1978-79. **Verna's (1989)** study on working capital management covered selected units both in public sector and the integrated steel plants in private sector in the country. He made a detailed comparative study of the management of various components of working capital between the selected public and private sector units during the period from 1978-79 to 1985-86. **Rao (1990)** in his study analyzed the performance of working capital management in five public enterprises engaged in manufacturing activity and which are owned and managed by the Andhra Pradesh Government during the decade 1969-70 to 1978-79. This study analyzed inventory, receivables and cash management and the financing pattern of the working capital. Apart from these aspects, impact of inflation on working capital management had also been analyzed in their study. **Mohan Reddy's (1991)** study relates to the management of working capital in six selected large scale manufacturing undertaking in the private sector in Andhra Pradesh during 1977 to 1986. This study covered one unit each in Cement, Cotton Textiles, Fertilizers, Food products, Paper and Plastic industries. **Jain (1993)** studied the performance of working capital management in selected units of Paper Industry during 1981-82 to 1987-88. He made a comparison between two public sector and five private sector paper mills. This study also analyzed the performance of payables management, apart from the usual areas, such as inventory, receivables, cash management and financing pattern of working capital during the study period. **Bairathi (1993)** studied the performance of working capital management in selected units of Non-ferrous Metal Industries in Public Sector during 1981-82 to 1985-86. This study analyzed the liquidity and financing aspects of working capital apart from a thorough analysis of inventory, receivables and cash management. Apart from the above published works, many other contributions have appeared in different issues of leading journals and periodicals, from time to time, throwing light on chosen aspects in the management of working capital. These include the following: **Iyer (1974)** on "The funds flow and cash flow analysis", **Mishra (1976)** on "Cash Management in Public Enterprises", **Bazle Karim and Bahadur (1978)** on "Spare parts management in public enterprises", **Prakash (1979)** on "Unused Inventories in Central Government Enterprises", **Mathur (1979)** on "Management of Inventories in Public sector steel plants", **Vijayasaraadhi and Raeswara Rao (1980)** on "Management of Advances of Public Enterprises in India", **Mishra (1980)** on "Bank Financing of Working capital in public enterprises", **Wahi (1980)** on "Organization of Materials Management Function", **Banga (1980)** on "Importance of Material Handling in Corporate System", **Vijayasaraadhi and Rajeswara Rao (1980)** on "Cash Management in a Multi-division Enterprise", **Rao and Rao (1990)** on "Inventory Management in Public Sector Units", **Vijayasaraadhi (1981)** on "Problems of Working Capital management in public enterprises", **Panda (1981)** on "Inventory Management", **Rajeswara Rao (1983)** on "Working capital Problems of public enterprises", **Sharma and Agrawal (1986)** on "Working Capital Management in a State Transport Undertaking", **Khatri (1990)** on "Working finance in Atlas Cycle Industries Ltd", **Rao and Chinta Rao (1991)** on "Evaluating Efficiency of Working Capital Management – Are the conventional Techniques adequate?", **Patro (1992)** on "Working capital Management in State Transport Undertakings; with special reference to GSRTC", **Das (1993)** on "Working Capital Management in the Public Sector Undertakings in India", **Siddharth (1994)** on "Working Capital Turnover in Pharmaceutical Companies", **Vijayakumar et.al (1994)** on "Working Finance in National Cooperative Sugar Mills Ltd", **Debasish Banarjee et.al (1994)** on "Working capital management: a overview of Tobacco Companies", **Bag (1994)** on "Current Funds Analysis", **Sukamal Datta (1994)** on "Cash Working capital requirement by using Operating cycle concept – A case study", **Mohan (1995)** on "Working capital management of the cooperative Spinning Mills", **Banday (1996)** on "Inventory Management in Indian Industry; A study of Maruthi Udyog Ltd", **Hossain (1996)** on "Receivables Management in Public Sector Textile Industry of Bangladesh: a case study", **Sankar (1996)** on "Developments in Working Capital Finance", **Indrasena Reddy and Someswara Rao (1996)** on "Working capital management in Public Sector Undertakings: a case study", **Hyderabad (1996)** on "Management of Trade credit as a source of finance", **Aramvalarthan (1996)** on "Estimating working capital requirements", **Dr. Ghosh (2007)** on "Working Capital Management Practices in some selected Industries in India", **Dr. Hitesh (2007)** on "A Study of Receivables Management of Indian Pharmaceutical Industry", **Ghosh (2008)** on Liquidity Management : A case study of TISCO", **Singh (2011)** on "Effects of Size on Working Capital Levels of the Firms' in Steel Industry in India", **Rakesh Kumar and Kulkarni (2012)** on "Working Capital Structure and Liquidity Analysis: An Empirical Research on Gujarat Textiles Manufacturing Industry".

## NEED OF THE STUDY

From the above review of literature, it is clear that several studies have been conducted in the area of working capital management and related areas. They pertain to different industries under public and private sectors. Surprisingly, the studies on working capital management in textile industry were very few and conducted long back. There was no exploration by research exclusively on liquidity and profitability in textile industry at overall industry level. The present study is aimed to subscribe in its own humble way to this area of management studies.

## STATEMENT OF THE PROBLEM

Though the textile industry is second largest industry in India, due lack of proper management of working capital, number of units are becoming sick which results downfall not only in industrial development but also economic development. Therefore, an attempt has been made to analyze the liquidity and profitability in Cotton Textile Industry (CTI) and (Man Made Textile Industry) which are major parts of the Textile Industry.

## OBJECTIVES

The study is made with the following objectives.

1. To study the liquidity position in Cotton Textile Industry (CTI) and Man Made Textile Industry (MMTI) in India.
2. To study the efficiency in utilization of working capital components i.e., debtors and inventories in Cotton Textile Industry (CTI) and Man Made Textile Industry (MMTI) in India.
3. To study the profitability of Cotton Textile Industry (CTI) and Man Made Textile Industry (MMTI) in India.

## HYPOTHESES

This study is undertaken to test the following hypotheses;

1. Liquidity of textile industry is better than the All Industries average.
2. Efficiency in utilization of inventories in textile industry is better than that of All industries average.
3. Efficiency in utilization of sundry debtors in textile industry is better than that of All Industries average.
4. The profitability of textile industry is better than that of all industries average.

## RESEARCH METHODOLOGY

The present paper is an attempt to study the liquidity, efficiency in managing working capital components, i.e., debtors and inventories and profitability in Cotton Textile Industry (CTI) and Man Made Textile Industry (MMTI) in India. For this purpose, different ratios, such as current assets to total net assets ratio, current assets to current liabilities ratio, quick asset to current liabilities ratio, sundry creditors to current assets ratio, inventory to sales ratio, sundry debtors to sales ratio, gross profit to sales ratio, gross profit to total net assets ratio of Cotton Textile Industry (CTI), Man Made Textile Industry (MMTI) and Total Indian Industries Averages published in various monthly issues of RBI Bulletin, are analyzed. Various statistical techniques such as Mean, Standard Deviation, Co-efficient of Variation and t-test have also been used to compare and draw meaningful conclusions. The study period covered is 12 years i.e., from 1999-00 to 2010-11. The number of units covered in each industry is given in table 1. The total study has been divided into three parts, such as 1) Liquidity Analysis 2) Efficiency Analysis 3) Profitability Analysis.

TABLE 1: NO. OF COMPANIES COVERED IN THE PRESENT STUDY

Year	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Cotton Textile Industry(CTI)	41	41	41	40	40	40	89	89	89	106	106	106
Man Made Textile Industry(MMTI)	62	62	62	49	49	49	42	42	42	21	21	21
All India Industries(AI)	990	990	990	964	964	964	1526	1526	1526	2072	2072	2072

## RESULTS & DISCUSSION

### 1) LIQUIDITY ANALYSIS

The importance of adequate liquidity in the sense of the ability of a firm to meet current obligations when they become due for payment can hardly be overstressed. In fact, liquidity is a prerequisite for the very survival of a firm. The short term creditors of the firm are interested in the short term solvency or liquidity of a firm. But liquidity implies, from the view point of utilization of the funds of the firm that funds are idle or they earn very little. A proper balance between the two contradictory requirements, that is, liquidity and profitability, is required for efficient financial management. The liquidity ratios measure the ability of a firm to meet its short term obligations and reflect the short term financial strength of a firm. For the purpose of analysis liquidity in textile industry A) Current Assets to Total Net Assets Ratio B) Current Ratio and C) Quick Ratio have been employed.

#### A) CURRENT ASSETS TO TOTAL NET ASSETS RATIO

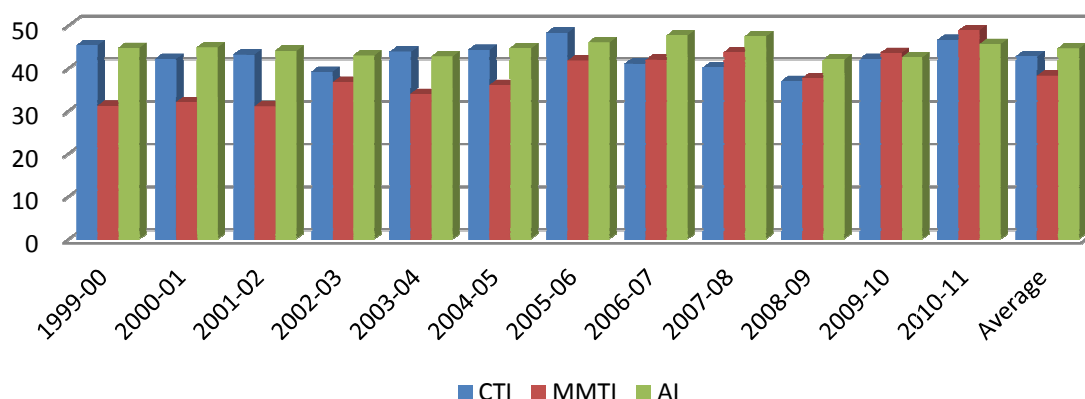
It is the ratio of current assets and total net assets in industry, which shows the proportion of current assets in total net assets. Higher the ratio, lower will be the profitability as investment in current assets does not yield any profit to the organization. This ratio of CTI and MMTI has been presented in table 2.

TABLE 2: CURRENT ASSETS TO TOTAL NET ASSETS RATIO IN TEXTILE INDUSTRY (%age)

Year	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	Average	S.D	C.V	t-value
CTI	45.3	42.1	43.1	39.1	43.8	44.2	48.2	41	40.1	36.9	42.1	46.6	42.71	3.20	7.49	2.01
MMTI	31.1	32	31	36.7	33.9	36	41.7	41.9	43.7	37.6	43.5	48.8	38.16	5.75	15.07	3.86*
AI	44.7	44.8	44	42.9	42.7	44.6	46	47.6	47.4	42	42.5	45.6	44.57	1.86	4.17	

Source: Reserve Bank of India Monthly Bulletin, May 2003, March 2006, March 2009 and March 2012.

## CURRENT ASSETS TO TOTAL NET ASSETS RATIO



The ratio of current assets to total net assets was fluctuated between 36.9 per cent in 2008-09 and 48.2 per cent in 2005-06 and recorded as 42.71 per cent on an average in CTI during the study period. The same was fluctuated between 31 percent in 2001-02 and 43.7 per cent in 2007-08 and recorded as 38.16 per cent during the study period in MMTI. The average ratios of these two industries are less than that of AI (44.57 percent) during the study period.

#### B) CURRENT RATIO

The current ratio of a firm measures its short term solvency, that is, its ability to meet short term obligations. As a measure of short term liquidity, it indicates the rupees of current assets available for each rupee of current liability. The higher the current ratio, the larger is the amount of rupees available per rupee of current liability, the more is the firm's ability to meet current obligations and the greater is the safety of funds of short term creditors. Although there is no hard and fast rule, conventionally, a current ratio of 2:1 is considered satisfactory.

TABLE 3: CURRENT RATIO OF TEXTILE INDUSTRY (in no. of times)

Year	199-9-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	Average	S.D	C.V	t-value
CTI	1.2	1.2	1.1	1	1.2	1.2	1.3	1.1	1.1	1.3	1.5	1.4	1.22	0.14	11.47	0
MMTI	0.9	0.9	0.8	1	0.9	1	1.2	1.1	1.2	0.8	0.9	1	0.98	0.14	14.29	5.94*
AI	1.3	1.3	1.2	1.2	1.1	1.2	1.2	1.3	1.3	1.1	1.2	1.2	1.22	0.07	5.74	

Source: Reserve Bank of India Monthly Bulletin, May 2003, March 2006, March 2009 and March 2012.

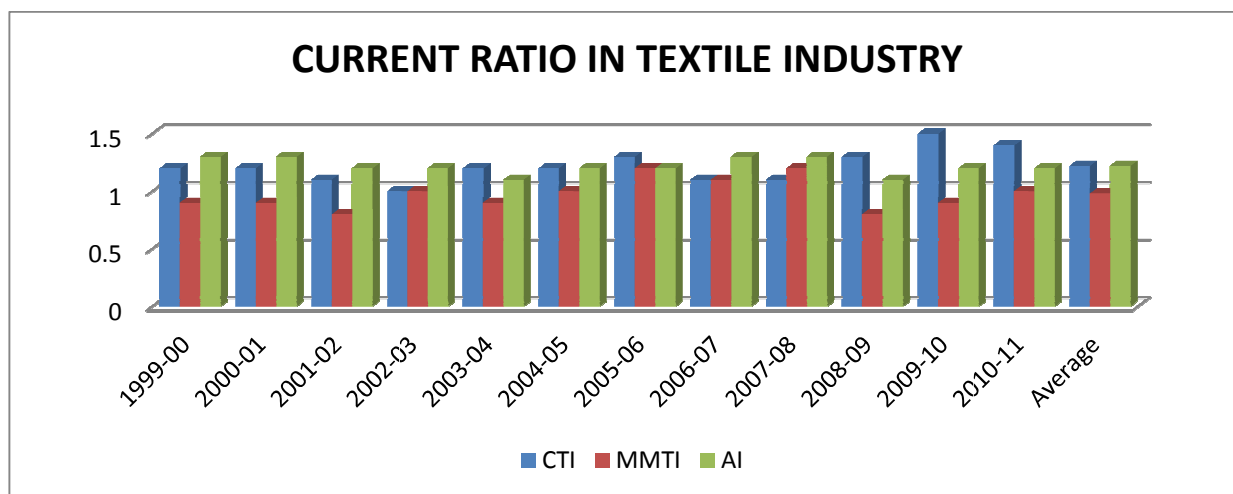


Table 3 shows the current ratio in CTI and MMTI during the study period. This ratio was very poor in both industries during the study period. In no year it was equal to or around the satisfactory level, i.e., 2 times, during the study period. Worst is the case of MMTI, as it was much lower than AI during the study period.

#### C) QUICK RATIO

The quick ratio or acid test ratio is the ratio between quick assets and current liabilities and is calculated by dividing the quick assets by the current liabilities. The term quick assets refers to current assets which can be converted into cash immediately or at a short notice without diminution of value. Included in this category of current assets are - cash and bank balance, short term marketable securities and debtors. Generally speaking, an acid test ratio of 1:1 is considered satisfactory as a firm can easily meet all current claims.

TABLE 4: QUICK RATIO OF TEXTILE INDUSTRY (%age)

Year	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	Average	S.D	C.V	t-value
CTI	48.9	49.9	50.4	31.3	33	34.6	45.7	35.1	31.3	48.8	56.5	49.2	42.89	9.07	21.15	*4.52
MMTI	34.4	33.2	30	27.3	26.8	30.1	54.3	54.7	59.4	26.9	31.4	35.1	36.97	11.94	32.3	*5.15
AI	53.4	54.4	53.1	51	50.8	53.2	60.2	62.6	53.9	51.3	56	56.7	54.72	3.64	6.65	

Source: Reserve Bank of India Monthly Bulletin, May 2003, March 2006, March 2009 and March 2012.

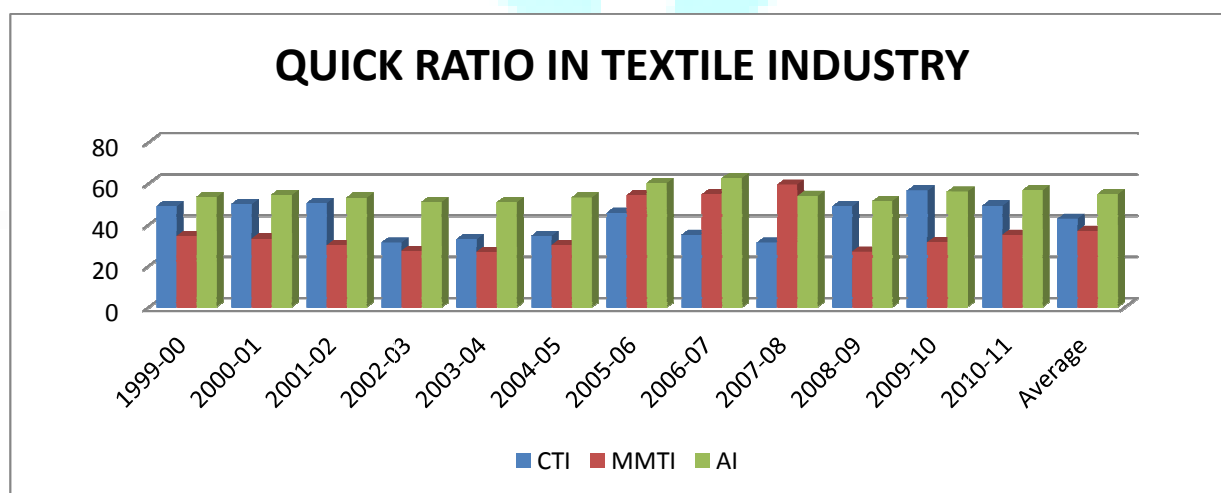


Table 4 shows the quick ratio in CTI and MMTI during the study period. In no year of the study, this ratio was equal to or around the satisfactory level, i.e. 100 per cent, during the study period. Both industries average ratios, i.e., 42.89 per cent (CTI) and 36.97 per cent (MMTI) were much lower than AI (54.72 per cent) during study period.

#### D) SUNDRY CREDITORS TO CURRENT ASSETS RATIO;

The ratio of sundry creditors to current assets indicates that the proportion of current assets financed by the sundry creditors. Higher the ratio lesser will be the need to depend on other sources, i.e., banks and Financial Institutions, for their current business operations.



TABLE 5: SUNDRY CREDITORS TO CURRENT ASSETS IN TEXTILE INDUSTRY (in %age)

Year	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	Average	S.D	C.V	t-value
CTI	20.3	20.1	21.3	17.2	18.1	17	15.8	17.1	17.9	17.1	12.8	14.7	17.45	2.39	13.7	*15.02
MM TI	29.7	32.8	36.2	25.8	29.6	25.4	16.6	17.9	17.3	22	21.6	24.3	24.93	6.26	25.11	1.59
AI	25.8	27	28.5	30.3	31.4	31.2	26.9	26.1	25.5	27.1	27	26.9	27.81	2.06	7.4	

Source: Reserve Bank of India Monthly Bulletin, May 2003, March 2006, March 2009 and March 2012.

The ratio of sundry creditors to current assets is depicted in table 5. This ratio in CTI was fluctuated between 14.7 per cent and 21.7 per cent during the study period and recorded 17.45 per cent on an average during the study period. The same was fluctuated between 17.3 per cent and 36.2 per cent and recorded as 24.93 per cent during the study period. The average ratios of both CTI and MMTI were less than AI (27.81 per cent) during study period.

## 2) EFFICIENCY ANALYSIS

Efficiency Analysis measures the intensity with which the firm uses its working capital components in generating sales. This analysis is made with the help of a) inventories to sales ratio and b) sundry debtors to sales ratio in CTI and MMTI during the study period.

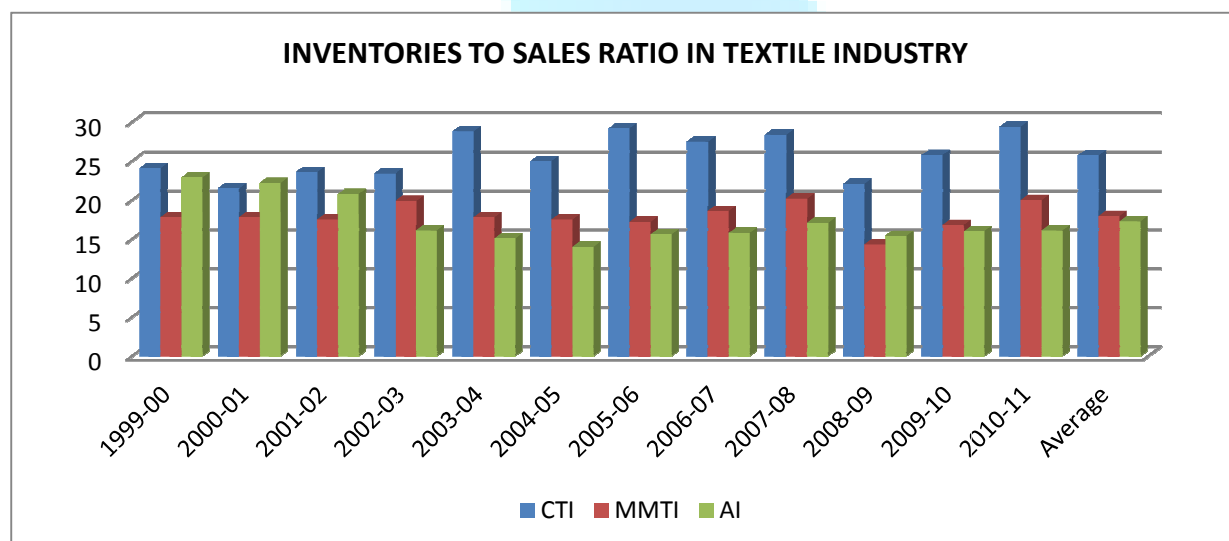
### A) INVENTORIES TO SALES RATIO

The ratio of inventories to sales indicates how much of investment is made in inventory for every one rupee of sales. A low ratio is good from the viewpoint of liquidity and vice versa. A high ratio would signify that inventory does not sell fast and stays on the shelf or in the warehouse for a long time.

TABLE 6: INVENTORIES TO SALES RATIO IN TEXTILE INDUSTRY (in %age)

Year	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	Average	S.D	C.V	t-value
CTI	24.1	21.5	23.6	23.4	28.8	25	29.2	27.5	28.4	22.1	25.8	29.4	25.73	2.85	11.08	*12.49
MM TI	17.8	17.8	17.5	19.9	17.8	17.5	17.2	18.6	20.2	14.3	16.8	20	17.95	1.63	9.08	1.49
AI	22.9	22.2	20.8	16.1	15.1	14	15.6	15.8	17.1	15.4	16	16.1	17.26	2.96	17.15	

Source: Reserve Bank of India Monthly Bulletin, May 2003, March 2006, March 2009 and March 2012.



This ratio was fluctuated between 21.5 per cent and 29.2 per cent during the study period and recorded 25.73 per cent on an average in CTI. In MMTI, it was fluctuated between 14.3 per cent and 20.2 per cent and recorded 17.95 per cent on an average during the study period. The average ratios of CTI and MMTI were higher than that of AI (17.26 per cent) and the difference between the averages of CTI and AI is significant at 5% level (table 6).

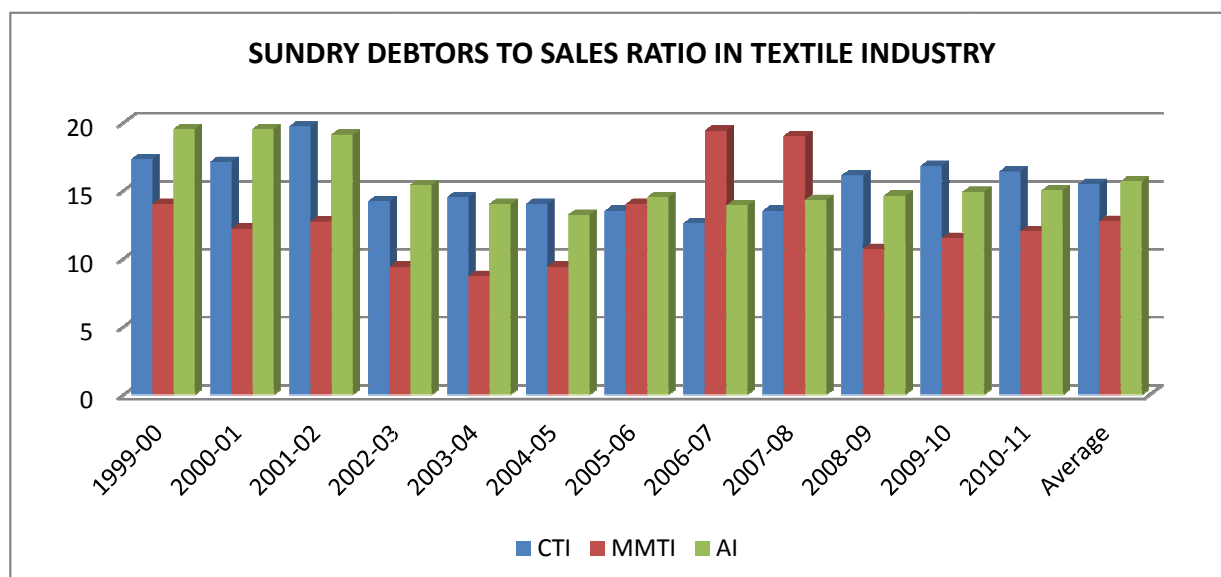
### B) SUNDRY DEBTORS TO SALES RATIO

The sundry debtors to sales ratio, which is calculated by dividing the debtors with the sales, indicate the velocity of debt collection of a firm. Generally, the lower the ratio efficient is the management of debtors/sales or more liquid are the debtors. Similarly, higher ratio implies inefficient management of debtors/sales and less liquid debtors.

TABLE 7: SUNDRY DEBTORS TO SALES RATIO IN TEXTILE INDUSTRY (in %age)

Year	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	Average	S.D	C.V	t-value
CTI	17.3	17.1	19.7	14.2	14.5	14	13.5	12.6	13.5	16.1	16.8	16.4	15.48	2.08	13.43	0.3
MM TI	14	12.2	12.7	9.4	8.7	9.4	14	19.4	19	10.7	11.5	12	12.75	3.46	27.14	2.91*
AI	19.5	19.5	19.1	15.4	14	13.2	14.5	13.9	14.3	14.6	14.9	15	15.66	2.31	14.75	

Source: Reserve Bank of India Monthly Bulletin, May 2003, March 2006, March 2009 and March 2012.



The ratio of sundry debtors to sales showed fluctuating trend during the study period and recorded on average 12.75 per cent in MMTI and 15.48 per cent in CTI which less than that of AI (15.66 per cent).

### 3) PROFITABILITY ANALYSIS

This analysis is undertaken to know the profitability of the industry both in terms of sales and total net assets during the study period. Higher the ratio more will be the liquidity and vice versa. This has been done by using a) Gross Profit to sales ratio and b) Gross Profit to Total Net Assets ratio.

#### A) GROSS PROFIT TO SALES RATIO

The gross profit to sales ratio was calculated by dividing gross profit with the sales to know the gross profitability position of the organization.

**TABLE 8: GROSS PROFIT TO SALES RATIO IN TEXTILE INDUSTRY (in %age)**

Year	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	Average	S.D	C.V	t-value
CTI	5	6.5	3	9.1	7.6	7.6	9.4	8.5	5.8	5.8	10.9	12.8	7.67	2.69	33.99	*7.81
MMTI	2.9	3.3	3.5	6.7	6.8	4.8	6	6	8.5	2.1	5.9	9.4	5.49	2.25	52.79	*6.71
AI	9.7	9.5	9.7	11.5	12.4	13.2	13.2	15.2	15.9	12.8	14.8	13.5	12.62	2.17	21.19	

Source: Reserve Bank of India Monthly Bulletin, May 2003, March 2006, March 2009 and March 2012.

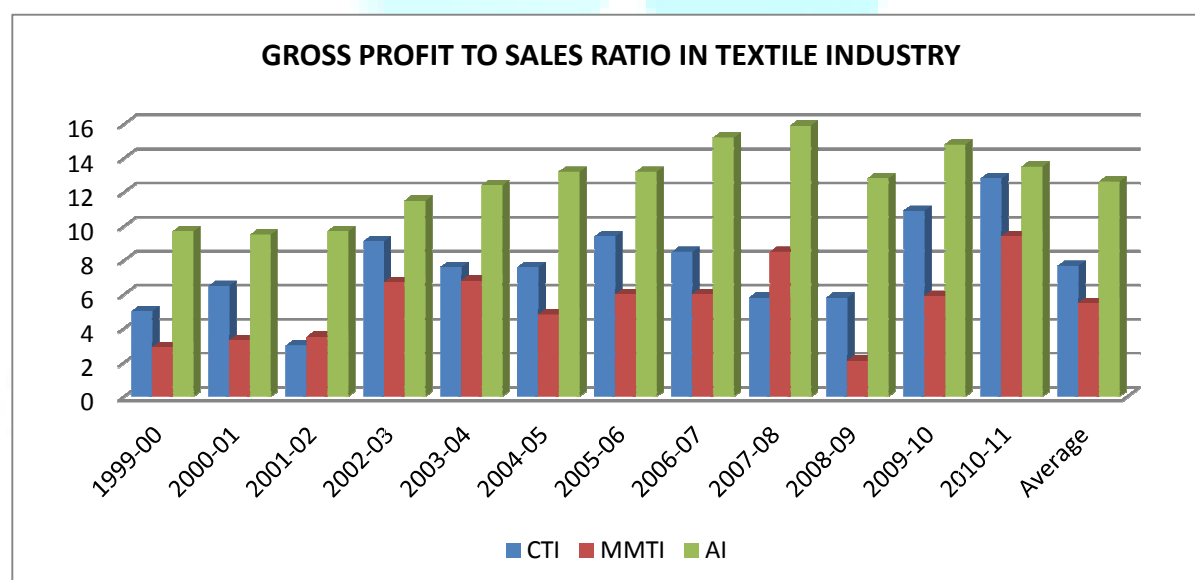


Table 8 reveals that the gross profit to sales ratio was very poor both in MMTI and CTI during the study period. On an average it was 5.49 per cent in MMTI and 7.67 per cent in CTI which are much below than that of AI (12.62 per cent).

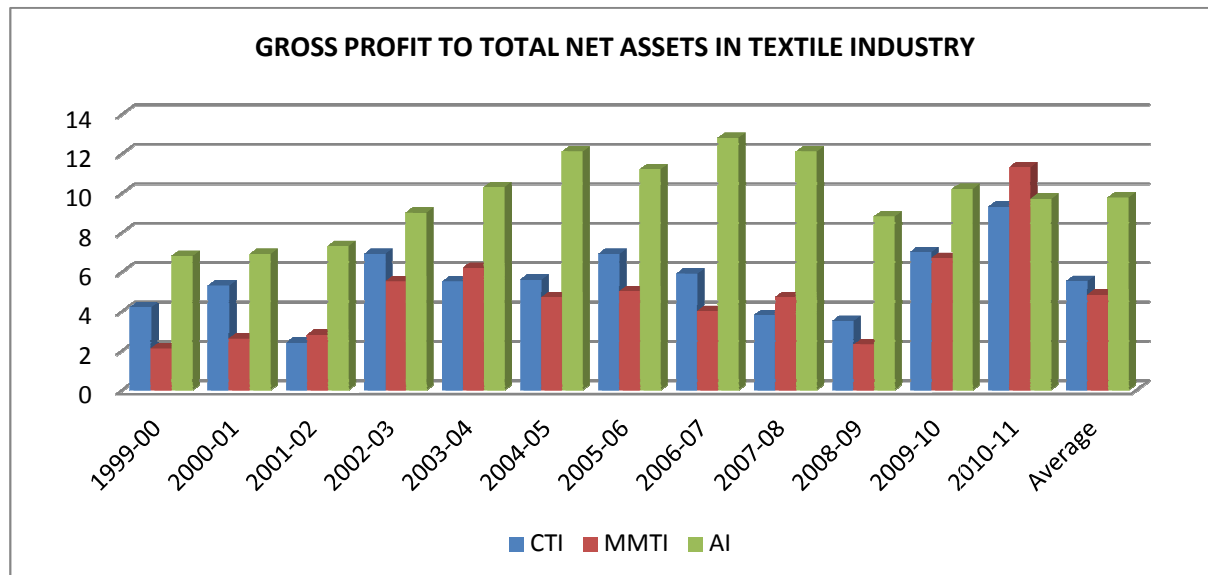
#### B) GROSS PROFIT TO TOTAL NET ASSETS RATIO

This ratio reveals the profitability of the industry in relation to total investment. Higher the ratio more the profitability will be and vice-versa. Lower ratio denotes that unnecessary investment was made in the industry or the failure of industry in earning sufficient rate of return on investment.

TABLE 9: GROSS PROFIT TO TOTAL NET ASSETS RATIO IN TEXTILE INDUSTRY (in %age)

Year	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	Average	S.D	C.V	t-value
CTI	4.2	5.3	2.4	6.9	5.5	5.6	6.9	5.9	3.8	3.5	7	9.3	5.53	1.88	35.07	*6.37
MMTI	2.1	2.6	2.8	5.5	6.2	4.7	5	4	4.7	2.3	6.7	11.3	4.83	2.55	40.98	*10.98
AI	6.8	6.9	7.3	9	10.3	12.1	11.2	12.8	12.1	8.8	10.2	9.7	9.77	2.07	17.19	

Source: Reserve Bank of India Monthly Bulletin, May 2003, March 2006, March 2009 and March 2012.



The ratio of gross profit to total net assets also indicates the same situation as it was depicted by the gross profit ratio during the study period (table 9). The average ratios of gross profit to total net asset were 4.83 per cent in MMTI, 5.53 per cent in CTI during study period. This reveals that the profitability performance CTI and MMTI was poor when compared with AI (9.77 per cent).

## FINDINGS

1. The average Ratios of Current Assets to Total Net Assets of CTI and MMTI were below than that of AI
2. The Average Current Ratio of CTI and MMTI was less than the satisfactory level.
3. The quick ratio of CTI and MMTI was also less than the satisfactory level.
4. The average ratios of sundry creditors to current assets in CTI and MMTI were less than that of AI.
5. The average ratios of inventories to sales in CTI and MMTI were higher than that of AI.
6. The average ratios of sundry debtors to sales in CTI and MMTI were less than that of AI.
7. The average ratios of gross profit to sales in CTI and MMTI were less than that of AI.
8. The average ratios of gross profit to total net assets in CTI and MMTI were less than that of AI.

## TESTING OF HYPOTHESES

1. Since the average ratios of current ratio and quick ratio are less than that of AI, the null hypothesis is rejected. Therefore, the liquidity of CTI and MMTI was not better than AI.
2. Since the average ratio of inventories to sales is more than that of AI, the null hypothesis is rejected.
3. Since the average ratio of sundry debtors to sales was less than that of AI, the null hypothesis is accepted.
4. Since the average ratios of gross profit to sales and gross profit to total net assets were less than that of AI, the null hypothesis is rejected.

## SUGGESTIONS

1. CTI and MMTI has to reduce the ratio of current assets to total net assets.
2. Reduce the level of inventories so that the liquidity and profitability will be improved.
3. Sundry creditors are to be utilized more to finance the current assets which also improve profitability.

## CONCLUSIONS

1. The liquidity position in CTI and MMTI was poor during the study period.
2. As far as the efficiency in utilization of components of working capital is concerned, the performance of MMTI is better than that of CTI during the study period.
3. The profitability of CTI and MMTI was very poor when compared to AI during the study period.

## LIMITATIONS

1. This study is based on industry data compiled and published by the RBI in its monthly bulletin. Therefore the results may not be applicable to the all individual units.
2. The data is relating to the large industrial units the paid up capital of which is Rupees one crore and above.

## SCOPE FOR THE FURTHER RESEARCH

Since the efficiency of management of different industries and units is different and also changes from time to time, there is a great scope for further research in different industries and individual units.

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**TECHNOLOGICAL DEVELOPMENTS IN INDIAN BANKING SECTOR**

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**ABSTRACT**

*This paper studies about the technological developments (innovations) in Indian Banking Sector. It also highlights the benefits and challenges of innovative banking trends. The purpose of the study is to analyze the effects of technological developments in banking growth and development in India. The use of technology in expanding banking operations is one of the focus areas of Indian banking sector. The banks in India are using information technology not only to improve their own internal processes but also to improve facilities and services to the banking community at large. The efficient use of technology has provided accurate and timely management of the increased volume of transactions achieved larger customer base. By designing the safe and secured technology, banks will reach the door-steps of customers.*

**KEYWORDS**

Technology, ATM, ECS, NEFT, RTGS.

**INTRODUCTION**

Banking sector plays a significant role in development of any Economy. In recent years, the technological development of the Indian banking sector has become a novel topic for discussion. Internet usage in India continues to grow over the period of time. Now, India has achieved the third largest internet population country in the world after China (at 575 m) and the US (at 275m). At 150 million total internet users, the internet penetration in India remains at 12% vs. 43% in China and 80% in the US. However, the low penetration of internet usage in India presents unmatched growth opportunity for the internet sector in coming years. In one's view, India will likely see golden period of the internet usage between 2013 and 2018 with incredible growth opportunities and popular growth of e-Commerce adoption. A recent study conducted by Sandeep Aggarwal, Founder CEO of shop clues.com) found that India among the top five countries with highest internet usage.

**TABLE-1: PENETRATION OF INTERNET USERS BY THE LEADING NATIONS AS ON 31ST MARCH 2012**

Sl. No	Country	Internet users	Penetration (% of population )	% of world users	Population
1	China	538,000,000	40.1	22.4	1,343,239,923
2	United States	245,203,319	78.1	10.2	313,847,465
3	India	137,000,000	11.4	5.7	1,205,073,612
4	Japan	101,228,736	79.5	4.2	127,368,088
5	Brazil	88,494,756	45.6	3.7	193,946,886
6	Total world	2,405,518,376	34.3	100	7,017,846,922

Source : World Internet User Statistics, June 30, 2012

**NEED FOR PROMOTING INTERNET BANKING IN INDIA**

Over the last decade, most of the banks completed the transformation to technology-driven signalizations. Moving from a manual scale- constrained environment to a global presence with automated systems and processes, it is difficult to envisage the adverse scenario, and the sector was in the era before the reforms, when a simple deposit of withdrawal of Cash would require a day. ATMs mobile banking and online bill payments, like mobile phone bills, telephone bills, electricity bills, water bills, credit card bills, rail reservations, movie tickets booking, insurance premiums and also online trading , shop payments, deposit renewal requests for cheque book, demand drafts, etc., of all these services will be provided to the customers.

With the emergence of Universal Banking, banks aim at to provide all banking product and service offering under one roof and their end over is to be customer relationship and move towards "Relationship Banking", customers are increasingly moving away from the confines of traditional branch banking and seeking the convenience of remote electronic banking. Information technology and the communications networking systems have revolutionized the working of banks and financial entities all over the world.

**TABLE -2: SELECT INDICATORS OF FINANCIAL INCLUSION IN DIFFERENT NATIONS AS ON 31.03.2013**

Country	No. of branches (per 0.1million adults)	No. of ATMs (per 0.1 million adults)	Bank loan as % of GDP	Bank deposits as % GDP
India	10.64	8.90	51.75	68.43
Australia	29.61	166.92	128.75	107.10
Brazil	46.15	119.63	40.28	53.26
France	41.58	109.80	42.85	34.77
United States	35.43	-	46.83	57.78
Korea	18.80	-	90.65	80.82

Source: - Report on Trend and Progress of Banking in India, RBI (2011-12).

The coverage of banking and the number of ATMs in different countries are shown in Table -2. It can be seen from the data in table -2 that India is a highly under banked country among various nations in the globe and also show that the number of ATMs also very meager which shows that there is a poor financial inclusion in India.



## TECHNOLOGICAL DEVELOPMENT IN INDIAN BANKS

Over the years, the Reserve Bank has laid special emphasis on technology infusion in the day to day operations of banks. Technology, apart from increasing the efficiency of banking services, it is expected to boost the ongoing process of financial inclusion emphasized by the Reserve Bank of India.

In recent years, increase in the number of off-site ATMs in various locations as well as use of mobile phones for delivering banking technology has further facilitated banking outreach in remote areas. The IT vision document, 2011-17 of the Reserve Bank of India sets out the road map for implementation of key IT applications in banking with special emphasis on seamless delivery of banking services through effective implementation of Business Continuity Management (BCM) information security policy and Business Process Re-engineering (BPR).

## COMPUTERIZATION IN BANKS

The peace and quality of banking was changed by technological advancement through computerization as well as the adoption of core banking solutions was one of the major steps in improving the efficiency of banking services, while new private sector banks and foreign banks started their operations in the mid-nineties followed by liberalization, were front runners in adopting technology. Among the total number of public sector bank branches, 98% are fully computerized and within which almost 90% of the branches are on core banking platform at the end of March 2011, whereas all branches of SBI are fully computerized.

**TABLE-3: COMPUTERIZATION OF PUBLIC SECTOR BANKS AS ON MARCH 31, 2011** (% of Bank branches)

Category	2010	2011
I. Fully computerized branches (a+bs)	95.0	97.8
(a). Branches under core banking solutions	79.4	90.0
(b). Branches already computerized.	15.6	7.8
II. Partially computerized branches	5.0	2.2

Source: Report on Trends and Progress of Banking in India, RBI (2010-11)

## CHANGING TREND OF THE PAYMENT SYSTEMS FROM CASH TO CASHLESS

In India, cash continues to be the pre-dominant mode of payment. The policy initiatives and the regulatory stance of the Reserve Bank has continued to focus on increasing the acceptance and penetration of safe, secure and efficient non-cash payment modes comprising cheques, credit/debit cards and transactions through ECS/NEFT/RTGS over the years. Due to these measures, the average ratio of non-cash retail payment to GDP continues to hover around 6% over the last three years.

## IMPORTANT EVENTS IN INDIA

- Arrival of card based payments-debit and credit cards late 1980s and 1990s.
- Introduction of Electronic Clearing Services (ECS) in late 1990s.
- Introduction of Electronic Fund Transfer (EFT) in early 2000s.
- Introduction of Real Time Gross Settlement (RTGS) in March 2004.
- Introduction of National Electronic Fund Transfer (NEFT) as a replacement to Electronic Fund Transfer /Special Electronic Fund Transfer in 2005/2006
- CTS in 2007.

**TABLE - 4: TRENDS IN PAYMENTS SYSTEM IN INDIAN BANKS**

Year	Non-cash Retail Payments*	Non-cash Retail payments to GDP Ratio	Currency circulation as % of GDP
2006-07	1,94,459	4.53	11.77
2007-08	3,05,382	6.12	11.85
2008-09	3,29,736	5.91	12.38
2009-10	1,06,116	6.29	12.38
2010-11	4,76,291	6.21	12.36
2011-12	5,16,332	5.83	12.04

\* indicate cheques, ECS, NEFT, cards, RTGS customer transactions

Source:- Report on Trend and Progress of Banking in India, RBI (2011-12)

The bank-led model for mobile banking has also started gaining popularity in the recent months. At the end of June 2012, 69 banks were granted approval to provide mobile banking facility, of which 49 have started operations. During November 2010, National Payment Corporation of India (NPCI) was given approval to launch Interbank mobile payment service (IMPS), which is a unique 24x7 Inter-bank electronic funds transfer system providing instantaneous credit to the beneficiaries with this channel having now stabilized and gaining further customer acceptance, the earlier transaction limit for mobile banking has been removed by the RBI. The banks are now free to fix their own per transaction limit based on their own risk perception with the approval of their respective boards.

## NATIONAL ELECTRONIC FUND TRANSFER (NEFT)

NEFT is an online system of transferring funds of Indian financial institutions, especially loans. This facility is used mainly to transfer funds less than Rs 2,00,000. The NEFT system in India commenced from 21st November, 2005. The NEFT was sent to over all banks which were participating in the special Electronic Funds Transfer (NEFT) clearing. It was made on the Structured Financial Messaging Solutions (SFMS) platform. Public Key Infrastructure (PKI) technique used in the NEFT to maintain security. Apart from this, the volume and value of transactions through the two major electronic payment systems of the country, i.e., RTGS and NEFT has increased rapidly over the period.

**TABLE -5: PROGRESS OF NATIONAL ELECTRONIC FUND TRANSFER IN INDIA**

Year	Volume(in million)	Value (in billion)
2009-10	66.3	4095
2010-11	132.3	9321
2011-12	226	17,903

Source: Report on Trend and Progress of Banking in India, RBI (2011-12)

Table-5 shows the data on the progress of NEFT in size and value of the business during the period 2009-12. It can be observed from the data in table-5 that the size and value of the NEFT operations during the last three years are increasing cent per cent every year. It can be said from this analysis that there is a tremendous progress in India in making use of the banking technology.

## REAL TIME GROSS SETTLEMENT (RTGS)

The Real Time Gross Settlement System was introduced in India since March 2004, and it is a interlink research analysis system through which electronics instructions can be given by banks to transfer funds from their account to the account of another bank. The RTGS system is maintained and operated by the RBI and provides a means of efficient and faster funds transfer among banks and thus facilitating their financial operations.

**TABLE-6: PROGRESS OF REAL TIME GROSS SETTLEMENT SYSTEM IN INDIA**

Year	Volume (in millions)	Value (in billion)
2007-08	58.4	2,77,183
2008-09	133.6	3,22,799
2009-10	33.2	3,94,533
2010-11	49.2	4,84,872
2011-12	55.0	5,39,307

**Source:-** Report on Trend and progress of Banking in India , RBI (2011-12)

Pre-payment Instruments (PPT) have emerged as a convenient replacement/substitution for cash transaction, besides providing a proper audit trail. The PPIs are payment instruments which facilitate purchase of goods and services against the value stored on such instruments. At end of June 2012, 40 banks (including the Department of Posts, Government of India) and 21 non-bank entities were granted approval/authorization under the Payment and Settlement System (PSS), Act 2007 to issue PPIs in India. Three types of PPIs are popularly issued, viz., paper voucher, cards and m-wallets. Amongst these, the paper vouchers are the most popular in terms of number and value. These were mainly issued by non-banks. However, efforts are underway to migrate these paper based PPIs to electronic modes.

**TABLE-7:- % OF PRE-PAYMENT INSTRUMENTS DURING 2011-12 (Volume in million, value in billion)**

Instrument type	No. of PPIs issued	% to total PPIs issued	Value of PPIs issued	% to total PPIs issued
Paper voucher	42.00	97.0	1.76	60.8
Card based	0.57	1.3	1.04	35.8
Mobile account/ballet	0.55	1.3	0.1	3.5
total	43.00	100.00	2.9	100.00

**Source:** Report on trend and progress of Banking in India, RBI (2011-12)

Table-7 presents the data on percentage of pre-payment instruments during 2011-12. It can be seen from the data in table-7 that the paper voucher instrument is playing a dominant role among the different categories of the PPIs during the period of study. Going forward, the relaxation in the demotic money transfer guidelines introduced in October 2011 are expected to provide further impetus towards financial inclusion through electronic PPIs, including the use of m-wallets by enabling all authorized entities, both banks as well as non-banks to increase domestic remittances through formal payment channels.

### ELECTRONIC CLEARING SERVICE (ECS)

The ECS is a mode of electronic funds transfer from one bank account to another bank account by using the services of a clearing house. This is used for bulk transfers from one account to many accounts and vice-versa. There are two types of ECS, viz., ECS (credit) and ECS (debit). The ECS (Credit) is used for affording credit to a large number of beneficiaries by raising a single debit to an account such as dividend, payments of salary, interest, pension, etc. Whereas, the ECS (Debit) is used for raising debits to a number of accounts holders for crediting a particular institution, e.g., payment to utility companies, like telephone, electricity or charges such as house tax, water tax, etc.

**TABLE -7: VOLUME AND VALUE OF ELECTRONIC CLEARING SERVICES BY SCBS. (Volume in Million, Value in Billion)**

Items	Volume		% of change		Value		% of change	
	2010-11	2011-12	2010-11	2011-12	2010-11	2011-12	2010-11	2011-12
ECS Credit	117	122	19.5	4.3	1817	1838	54.5	1.2
ECS Debit	157	165	5.0	5.1	736	834	5.9	13.3

**Source:-** Report on Trend and Progress of Banking in India, RBI(2011-12)

Table-7 presents the data on change of electronic credit and debit transactions through the electronic clearing services during 2010-12. It can be seen from the data in table-7 that the ECS debit transactions both in size and value are more when compared to the credit transactions during the period of study.

### AUTOMATIC TELLER MACHINES (ATMs)

ATM is the most popular device in India, which enables the customers to withdraw their money 24 hours a day 7 days a week. It includes many other bank related transactions, such as cash withdrawal, paying bills, fees and taxes, printing bank statements, funds transfer, purchasing online products, train ticket reservations, purchases from shopping malls, donating to charities, cheques processing module, adding pre-paid cell phone/mobile phone credit, advertising channels for own or third party products and services. Thus, the ATM card performs the routine banking transactions without interacting with a human teller.

**TABLE- 8: BRANCHES AND ATMS OF SCHEDULED COMMERCIAL BANKS (As on March -31, 2012)**

Bank Groups	Number of Branches					Number of ATMs		
	Rural	Semi urban	Urban	Metro- Politian	Total	On-site	Off-site	Total
Nationalized Bank	15,606	12,154	10,744	10,132	48,636	18,277	12,773	31,050
State Bank Group	56,582	5,619	3,504	3,125	18,830	15,735	11,408	27,143
Old Private sector banks (OPSBs)	3,342	2,025	1,395	1,085	5,386	3,342	2,429	5,771
New Private Sector Banks (NPSBs)	700	2,662	2,174	2,530	8,066	9,907	20,401	30,308
Foreign Banks (FBs)	7	8	61	246	322	284	1130	1414
Total	23,776	22,468	17,878	17,118	81,240	47,545	48,141	95,686

**Source:-**Report on Trend and Progress of Banking in India, RBI (2011-12)

Table-8 shows the data on the bank coverage and ATM facility of different types of banks in various regions at the end of 31st March 2012. It can be seen from the data in table-8 that 29.26% of the bank branches are located in rural areas and 27.65% of the branches are located in semi-urban areas. Further, it is also observed that 60% of the nationalized bank branches are located in rural and semi urban areas. The ATMs installed in the country at the end March 2012, new private sector banks had the largest share in offsite ATMs, while nationalized banks have the largest share in onsite ATMs. During the year 2011-12, an additional 21,000 ATMs were deployed by these banks. The public sector banks accounted for more than 60% of the ATMs at the same time, while close to one third of the total ATMs were attributed to new private sector banks. This trend indicates that it is a move towards door-step banking.

### CARDS TRANSACTION

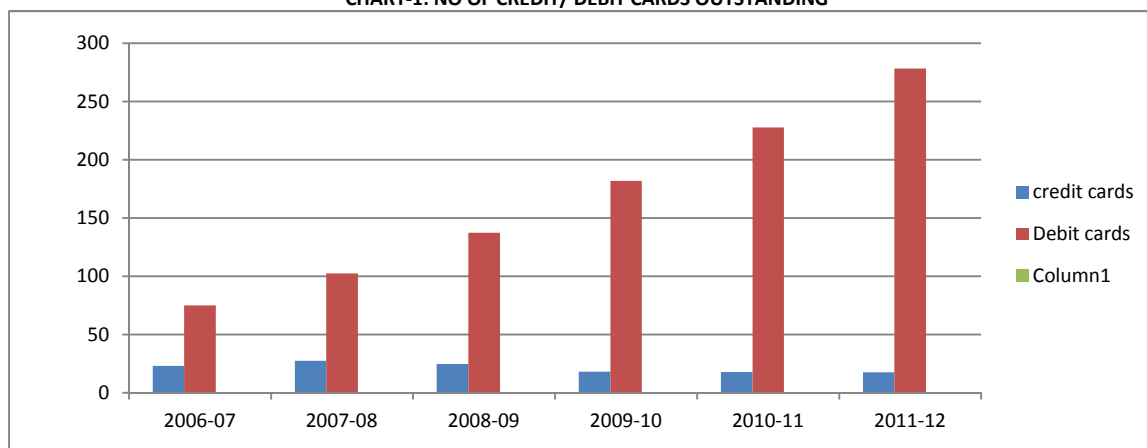
Debit card is a plastic card which provides alternative payment method for cash when making transaction. By using debit card, the cardholder can see the balance available in his account. Debit card is mainly used for cash withdraw from ATM, at point of time also on the internet for online purchase, funds transfer, paying bills, accessing detail account information, changing PIN, etc.. The bank provides the debit card free of cost at the time of opening account. From 1<sup>st</sup> January 2011, the RBI declared that for every transaction with debit card on ATM has to enter password for every transaction. This is done for security purpose.

### DEBIT AND CREDIT CARDS

Issuance of credit cards declined, while debit cards showed a high growth trend. Foreign banks showed a small decline in the issuance of debit cards. More than three-fourths of the total debit cards outstanding at the end of March 2012 were issued by public sector banks. In contrast, more than half of the outstanding

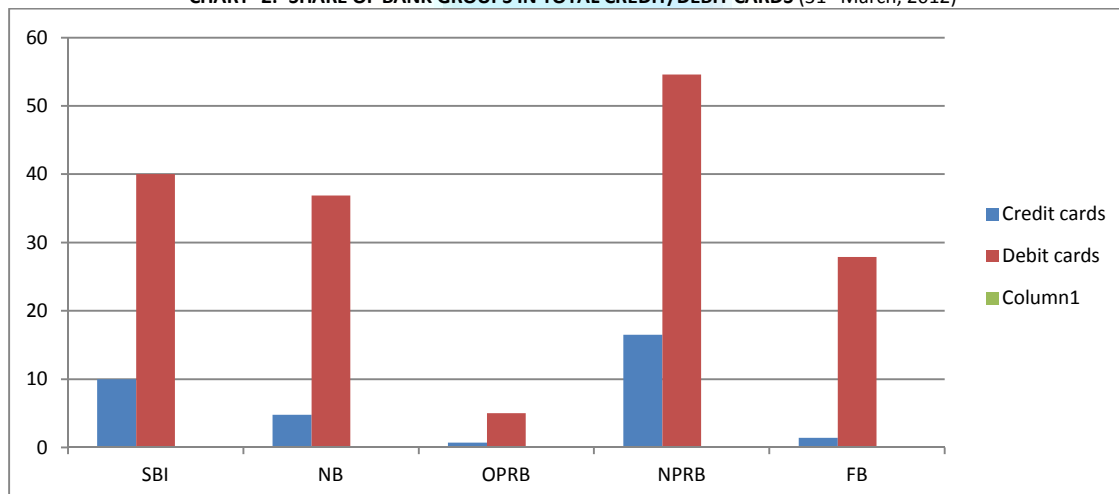
credit cards at the same time were issued by new private sector banks. The trends in issuance of debit and credit cards by the public sector banks in India during the period 2006-07 to 2011-12 were shown in chart-1. It can be seen from the chart-1 that the debit cards issue is dominating the issue of credit cards by the banks in India. It shows that the banks are following a positive policy in taking the public in its fold as an inclusive model. It can be concluded from the foregoing analysis that the circulation of hard currency is being reduced and the plastic money can be increased which is a welcome trend in banking activities.

CHART-1: NO OF CREDIT/ DEBIT CARDS OUTSTANDING



Source: Report on Trend and Progress of Banking in India, RBI(2011-2012).

Chart-2 shows the share of different bank groups in issuing of debit and credit cards during the period 2006-07 and 2011-12. It can be observed from the chart-2 that among the various banks the new private sector banks are issuing more debit cards than that of other groups of banks in India. It can be said that the newly entered private sector banks are more technological advanced ones in order to avail the technological developments in India.

CHART- 2:- SHARE OF BANK GROUPS IN TOTAL CREDIT/DEBIT CARDS (31<sup>st</sup> March, 2012)

Source: Report on Trend and Progress of Banking in India, RBI (2011-2012).

#### IMPLICATIONS

The banks were quickly responded to the changes in the industry; especially the new generation banks. The continuation of the trend has re-defined and re-engineered by the banking operations as a whole with more customization through leveraging technology. As technology makes banking convenient, customers can access banking services and do banking transactions any time and from anywhere. The importance of physical branches is going down. Thus, the changes have the following implication:

- ❖ Anywhere any time any place banking.
- ❖ Timeless and placeless banking.
- ❖ Banking at convenience.
- ❖ Dismantling of physical structure.
- ❖ Good bye to traditional instruments and innovation to new instruments.
- ❖ Leading to currency-less monetary system.
- ❖ Disappearance of conventional risk and arrival of new risks.

#### CHALLENGES IN IMPLEMENTATION

At present structure, banking in India is largely depended on technology. It is necessary that banks have appropriate and adequate arrangements for disaster recovery and business continuity to face any event of natural disaster or operational failures.

#### BUSINESS CONTINUITY MANAGEMENT (BCM)

In recent years, an integrated "Business Continuity Management"(BCM) arrangement encompassing continuity planning for all business functions including data centers has evolved, with support provided by the Reserve Bank of India. In addition to address the issues of disruption in business process arising from technology failure appropriate disaster recovery and business continuity arrangement have been implemented by the RBI data centers.

#### CORE BANKING SOLUTIONS

Considering the importance of accuracy and timelines regulatory reporting a project on automating data flow from the core banking solution (CBS) or other IT systems of commercial banks to the reserve bank was announced in the monetary policy statement of 2010-11. The approach paper released in November 2011, prepared by a core group with representation from banks, the reserve bank, IDBRT and the IBA envisions the implementation in two phases. In the first phase, banks were advised to ensure seamless flow of data from their transaction server to their management information system (MIS) Server while the second phase would involve the reserve bank to introduce system for generating all returns from banks' MIS. Implementation of the first phase is in progress and is monitored

and reviewed at quarterly intervals. In the second phase, the RBI would introduce a system for the flow of data from the MIS server of banks in a straight through process.

#### TECHNICAL ADVISORY GROUP (TAG)

Considering the tremendous growth in volume of transactions through the RTGs system, a technical advisory group (TAG) with members from technology institutes, banks and reserve bank was constituted in order to review the RTGs system. The group recommended building up the new generation RTGs (NG-RTGS) system, which would encompass key features such as:

- ❖ Liquidity saving mechanism.
- ❖ Advanced queue management system.
- ❖ Various modes of access as per the size of the bank.
- ❖ Extensible mark-up language (XML) based messaging system.
- ❖ Real time information and transaction monitoring and control system having the dashboard facility.

#### FUTURE TRENDS

Energy management and move towards Green Technology: Most of the banks are conscious of the carbon foot print generated and are working towards energy management and use of Green Technology.

##### Some of the measures adopted are:

- Solar powered ATMs.
- Use of windmill energy.
- Adoption of server virtualization technologies to save on floor space, power and cooling components.
- Adoption of Blade server Technology to have higher computing power in small foot print.
- Up gradation of old power hungry servers, storage and networking equipment's
- Dynamic power capping of servers, desktops by employing newer power saving.
- Technologies like process stepping.

#### CONCLUSION

Use of technology in expanding banking is one of the focus areas of banks. The banks in India are using information technology not only to improve their own internal processes but also to increase facilities and services to the banking community at large. Efficient use of technology has facilitated accurate and timely management of the increased transaction volume of banks of that comes with larger customer base. By designing and use of simple safe and secure technology, banks reach at door-step of customer and further develop in the existing electronic payments.

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## FOREIGN DIRECT INVESTMENT IN MULTIBRAND RETAILING IN INDIA: FROM STAKEHOLDERS PERSPECTIVES

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### ABSTRACT

*Indian retail industry is in the nascent stage of growth one of the sunrise sectors with huge growth potential. Retailing is the last link that connects the individual consumer with the manufacturing and distribution chain. The union government has sanctioned 51% foreign direct investment in multi-brand like Wal-Mart, Carrefour, Tesco and up to 100% in single brand retail like Gucci, Nokia and Reebok. This will make foreign goods and items of daily consumption available locally, at a lower price, to Indian consumers. The new policy will allow multi-brand foreign retailers to set up shop only in cities with a population of more than 10 lakhs as per the 2011 census. A number of concerns have been raised with regard to opening up of the Multi-brand retail sector in India. In this research paper an analysis has been made to understand the stakeholders perspectives with respect to foreign direct investment in multi-brand retailing in India, using percentage and SWOC analysis. For the purpose of the study primary data has been collected using well structured interview schedule from 72 respondents, representing consumers, native retailers, manufacturers and agriculturists in Coimbatore, Tamilnadu. This paper tries to establish the need of the retail community to invite FDI in multi brand retailing and deals with the issue from stakeholders' point of view.*

### KEYWORDS

Foreign direct investment, Multi-brand retailing, Stakeholders' view, SWOC analysis.

### INTRODUCTION

Retailing today is at a fascinating crossroads. Retailing encompasses the business activities involved in selling goods and services to consumers for their personal, family, or household use. It includes every sale to the final consumer. Retailing is the last stage in the distribution process (Barryberman, 2007). It is defined as all activities involved in selling goods or services directly to the final consumer for their personal, non-business use via shops, market, door-to-door selling, and mail-order or over the internet where the buyer intends to consume the product. Global retailing possibilities are abound.

### MULTI BRAND RETAILING

FDI in Multi Brand retail implies that a retail store with a foreign investment can sell multiple brands under one roof (Gaurav Bisaria, 2012). Opening up FDI in multi-brand retail will mean that global retailers including Wal-Mart, Carrefour and Tesco can open stores offering a range of household items and grocery directly to consumers in the same way as the ubiquitous 'kirana' store. The marketing of two or more similar and competing products, by the same firm under different and unrelated brands. While these brands eat into each others' sales, multi-brand strategy does have some advantages as a means of obtaining greater shelf space and leaving little for competitors' products: Saturating a market by filling all price and quality gaps; Catering to brand-switchers users who like to experiment with different brands, and Keeping the firm's managers on their toes by generating internal competition (Mamta Jain and sukhlecha, 2012).

### RETAIL INDUSTRY IN INDIA

Indian retail industry is one of the sunrise sectors with huge growth potential. The retail industry is mainly divided into Organised retailing and Unorganised Retailing. Organised retailing refers to trading activities undertaken by licensed retailers, that is, those who are registered for sales tax, income tax, etc. These include the corporate-backed hypermarkets and retail chains, and also the privately owned large retail businesses. Unorganised retailing, on the other hand, refers to the traditional formats of low-cost retailing, for example, the local *kirana* shops, owner manned general stores, *paan/beedi* shops, convenience stores, hand cart and pavement vendors, etc.

The Indian retail sector is highly fragmented with 97 per cent of its business being run by the unorganized retailers. The organized retail however is at a very nascent stage. The sector is the largest source of employment after agriculture, and has deep penetration into rural India generating more than 10 per cent of India's GDP. According to the Investment Commission of India, the retail sector is expected to grow almost three times its current levels to \$660 billion by 2015. India's retailing industry is essentially owner manned small shops. The share of organized retailing in India, at around 2%, is too low, compared to 80% in the USA, 40% in Thailand, or 20% in China, thus leaving the huge market potential largely unexploited. In 2010, larger format convenience stores and supermarkets accounted for about 4% of the industry, and these were present only in large urban centers. India's retail and logistics industry employs about 40 million Indians (3.3% of Indian population).

### FOREIGN DIRECT INVESTMENT IN MULTIBRAND RETAILING

Until 2011, Indian central government denied foreign direct investment (FDI) in multibrand retail, forbidding foreign groups from any ownership in supermarkets, convenience stores or any retail outlets. Quite a lot of companies including Metro, Carrefour and Ahold are exploring way in options. Benetton, Lifestyle and Zegna are already in the industry in India. Retail stalwarts such as Wal-Mart, Tesco and Marks & Spencer have already made inroads into the Indian retail industry and with multi-billion dollar investments by major domestic players such as Reliance Retail and Bharathil; the market is expected to go from strength to strength.

The state government of Delhi, Assam, Maharashtra, Andrapradesh, Rajasthan, Uttarakhand, Haryana and Manipur, Jammu and Kashmir and the Union Territory of Daman and Diu and Dadra and Nagar Haveli expressed support for the policy in writing. But the governments of Bihar, Karnataka, Kerala, Madhya Pradesh, Tamilnadu, Tripura and Orissa expressed reservations about it.

According to International Monetary Fund, FDI is defined as "Investment that is made to acquire a lasting interest in an enterprise operating in an economy other than that of the investor. The investor's purpose being to have effective voice in the management of the enterprise". Foreign direct investment (FDI) or foreign investment refers to the net inflows of investment to acquire a lasting management interest (10% or more) in an enterprise operating in an economy other than that of the investor. Foreign direct investment is the sum of equity capital, reinvestment of earnings and other long or short term capital as shown in the balance of payments. It usually involves participation in management, joint venture, transfer of technology and expertise. There are two types of FDI: (a) Inward foreign direct investment and (b) Outward foreign direct investment. Foreign direct investment excludes investment through purchase of shares. Foreign direct investment can be used as one measure of growing economic globalization. The union government has sanctioned 51% foreign direct investment in multi-brand like Wal-Mart, Carrefour, Tesco and upto 100% in single brand retail like Gucci, Nokia and Reebok. This will make foreign goods and items of daily consumption available locally, at a lower price, to Indian consumers. The new policy will allow multi-brand foreign retailers to set up shop only in cities with a



population of more than 10 lakhs as per the 2011 census. There are 53 such cities. This means that big retailers can move beyond the metropolises to smaller cities. The final decision will however lie with the state governments. Foreign retailers will be required to put up 50% of total FDI in back-end infra-structure excluding that on front-end expenditures. Expenditure on land cost and rentals will not be counted for the purpose of back-end infra-structure. Big retailers will need to source atleast 30% of manufactured or processed products from small retailers. The government will go for surprise checks and if found irregularities then the deed will be broken with a second of time.

## REVIEW OF LITERATURE

According to Abishek Goyal CEO, Fashion and you.com, FDI in the online space is set to bring strategic investors. With regard to e-commerce in India, the industry is still at a nascent stage and the market need players that can invest in eco-system and drive the growth of the industry itself." Said Karandeep Singh CFO of Flipcart.com. The International Bank for Reconstruction and Development and The World Bank indicate — Foreign direct investment assists in increasing the income that is generated through revenues realized through taxation. It also plays a crucial role in the context of rise in the productivity of the host countries.

## STATEMENT OF THE PROBLEM

Modernisation of retail is a critical and necessary condition for sustaining high growth impulses in the economy. The entry of FDI with greater investment and new technologies the sector can act as a growth driver rather than a drag with its outdated practices and inability to take advantages of either economies of scale or of scope. In this context, the present paper attempts to analyse the strategic issues concerning the influx of foreign direct investment in the Indian retail industry from stakeholders perspectives.

## METHODOLOGY

The locale of the study is Coimbatore district. Primary data has been collected through telephonic interview from 72 sample respondents representing consumers, domestic retailers, farmers and producers. The descriptive statistics and SWOC analysis were applied to draw inferences.

## OBJECTIVES OF STUDY

1. To study the need of opening up of FDI in multi-brand retail.
2. To analyze the positive and negative impacts of the reforms to be undertaken from stakeholders perspectives

## RESULTS AND DISCUSSION

### SOCIO ECONOMIC PROFILE OF THE RESPONDENTS

The distribution of the respondents based on their socio-economic profile is presented in the table 1

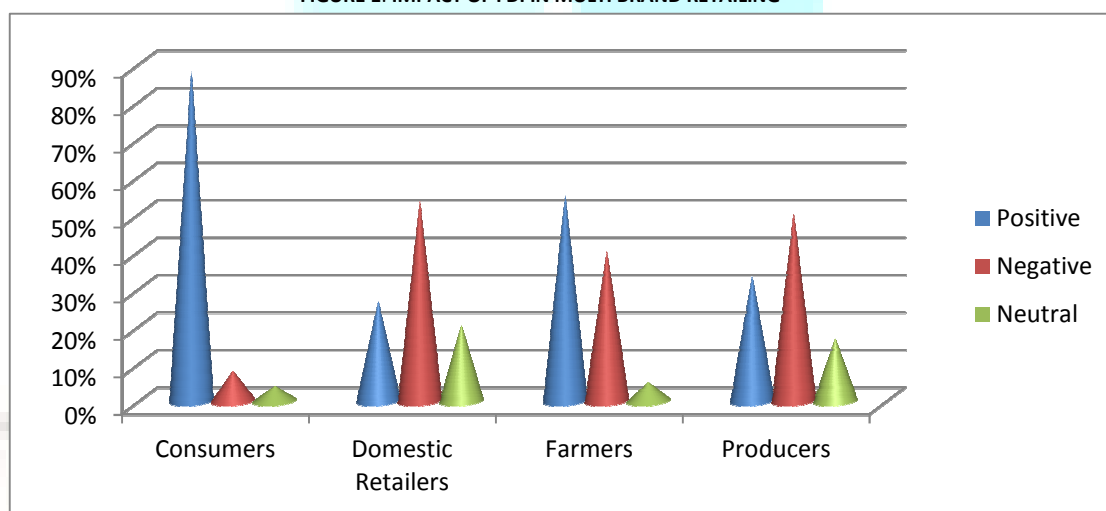
Majority of the respondents (68%) were in the age group of 25-45 years with the educational qualification of about 57 percent completed school level, 23 percent were graduates and 19 percent were postgraduates, with 75 percent male and 25 percent female. On category-wise distribution it was found that 34.72 percent representing consumers, 27.78 percent were agriculturists, 20.83 percent were domestic retailers and the remaining 16.67 percent were manufacturers.

### OVERALL IMPACT OF FDI IN MULTIBRAND RETAILING

The overall impact of FDI in multibrand retailing in India as perceived by the stakeholders is shown in table 2, figure 1

The overall impact of FDI in multibrand retailing in India as perceived by the stakeholders revealed that among consumers 88 percent of the respondents considered it positive, eight percent of them considered it as negative and four percent to be neutral. Among the domestic retailers majority of them (53.33 percent) found it negative, 26.66 percent found it as positive and 20.83 percent were neutral. Of the farmers, a higher portion of them had opposite views about FDI in multibrand retailing as positive and about 10 percent viewed it as negative. On the whole, about 57 percent considered FDI in multi brand retailing would have positive impact.

FIGURE 1: IMPACT OF FDI IN MULTI BRAND RETAILING



### SWOC ANALYSIS FROM STAKEHOLDERS PERSPECTIVES

SWOC, which stand for Strengths, Weaknesses, Opportunities and Challenges. SWOT and SWOC are the same thing, with "challenges" and "threats" being essentially the same thing. Businesses use the Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis to determine the internal and external factors that directly influence their operations. In this context, the issues relating to foreign direct investment in multi-brand retailing were dealt in terms of Strengths, Weaknesses, Opportunities and Challenges, as perceived by consumers, national retailers, agriculturists and manufacturers.

The table 3 below reveals the SWOC-strengths analysis based on the responses.

**High potential and Growth rate:** The strength of FDI in multibrand retailing lies in its high potential and growth rate as viewed by respondents belonging to core segment of the issue whereas contribution to GDP ranked in twelfth position.

**Product choice:** The choice in products is a delight to consumers contributing to third rank. The stage is now set when Indian consumers will have the luxury of world class opportunity of shopping to meet the requirements of daily life. They will find a new world of enjoyment of picking up consumer items to their greatest satisfaction.

**Backend infrastructure:** A huge investment in backend infrastructure is expected from FDI assigned with fourth rank.

**Low retail price:** The elimination of intermediaries would bring down the cost of products to a considerable level. The consumers are expected to benefit from lower retail price and ranked as five.

**Efficient supply chain:** Efficient supply chain with related technologies going to be the nerve centre for the growth of retailing which our country lacks assigned with sixth rank.

**Manufacturing and processing facilities and cold storage:** Both these facilities are going to benefit producers manufacturing hygienic and quality goods of international standards and cold storage to preserve goods and saving from wastages, ranked with seventh and eighth place.

**Business models:** Super-centre's Business Models by pass on the benefit to customers by way of reduction in prices. Big retailers will often allow discounts on selected items which will facilitate the consumers and they can end up with marginal bargains.

**Well capitalized industry:** *The retail sector is going to grow into a well capitalized industry to cater the needs of the growing population*

The table 4 depicts the SWOC – weakness analysis for FDI in multibrand retailing. The ranking includes

**Dumping of goods:** Flooding of goods in the market from other worlds cause more consumption and more pollutions was ranked as one.

**View nation as fragmented:** Investor view nation as fragmentation in view of self interest with back end infrastructure in one state and front end sales in other state was given second rank by the respondents.

**Relationship of investment:** Relationship of investment between front end and back end not contemplated while approving FDI in multibrand retailing which considered as weakness was assigned with third rank.

**Parking and connectivity:** Retailing requires vast space for parking which is scarce in cities and connectivity between source of production and consumption is another major issue to be faced by the retailers.

**Lack of competition:** Investors in multibrand retailing face no competition in the market as the domestic retailers comparatively deal in small size and volume.

**Loss of existing jobs and lack of trained professionals:** Threat to the existing jobs are inevitable. The cost of training professionals for organized retailing would be high as this sector still needs to grow.

**Integration of Indian and global market:** Indian retail sector lose its identity and uniqueness namely kirana stores, petty shops and itinerant vendors due to integration of Indian and global market.

The ranking assigned by the respondents for the SWOC – opportunities' analysis for FDI in multibrand retailing is shown in table 5.

**Elimination of intermediaries:** Elimination of intermediaries shortens the length of distribution channel from producer to consumer was considered as the first and foremost opportunity.

**Transparency in pricing:** Price fixation mechanism made transparent to benefit customers.

**Transform into organized sector:** The unorganized retail sector transform into organized retailing.

**Heavy capital inflow:** Indian retailers have partnership opportunity that involves Heavy capital inflow from foreign retailers.

**Tame food inflation by reducing waste:** Tame food inflation by reducing waste using cold storage and shortest supply chain. The report shows that 30-35% of India's total production of fruits and vegetables is wasted every year due to inadequate cold storage and transport facilities. Almost half of this wastage can be prevented if fruit and vegetable retailers have access to specialized cold storage facilities and refrigerated trucks.

**Job creation:** There will be huge job opportunities in the country as there will be opening of malls and store houses. The job opportunities will vary from ordinary workers to specialized officers, retail floor manager, cold chains, warehousing and logistics. The new jobs will be created in front end and back end leading to a positive impact on economy.

The table 6 depicts the SWOC – challenges analysis for FDI in multibrand retailing. The ranking includes

**Take it or leave it offer:** Once the chain is established its dominance in the market amounts to a take it or leave it offer.

**Threat to food security:** Ensuring food security ought to be an issue of great importance for a country like India where more than one-third of the population is estimated to be absolutely poor and one-half of all children malnourished in way or the other (Meenakshisundaram, 2012). Farmers cultivate the crops using seeds and technologies supplied by the retailers ignoring national interest.

**Own private label brands:** Introduction of own private labels reduces procurement from small producers at the national level.

**Threat to local businesses:** The South India Mill Owners Association (SIMA) requested the Prime Minister to stop permitting FDI in multibrand retailing, as it is to vanish the existing business in garments and agriculture as happened in case of local soft drink manufacturers because of the entry of Coke and Pepsi. There is a threat from China that has pumped goods into the state at less prices. It has forced closure of industries. China is the largest supplier to Wal-Mart. The foreign retailers will buy raw materials or other goods from China because Indian small scale goods would be costlier than the Chinese companies.

**Squeeze in producer margin:** The bargaining power to squeeze producer margin as they buy very large volumes. The hard bargaining keeps the negotiation as rigid as possible, both in terms of the bargaining environment and modifiable contract features.

**Curb growth of entrepreneurship:** SIMA indicated that future generations of India are not going to be entrepreneurs but employees of foreign companies. According to the report in UK there were 56,000 retail shops before the entry of Wal-Mart and after the entry of Wal-Mart they were reduced to 22,000 retail shops.

**Bilateral agreements:** India has entered into bilateral investment agreements with eighty two countries. The basic feature of these bilateral treaties is that they accord national treatment to foreign investors. The effect of this provision is that India cannot put any condition on foreign investors which are not applicable to domestic investors. India has entered into a Zero-import duty trade agreement with all least developed countries (LDCs) in SAARC. The foreign retailers would take advantage of these agreements "for-profit", with no "national sentiments".

## CONCLUSION

Modern retailing is necessary in order to achieve major efficiencies in distribution. The contours of the debate surrounding multi-brand retailing liberalization need to change to address the core issues of whether and how it will impact modernization of the supply chain infrastructure and measures to transform small retailers to achieve competitive advantage. The SWOC analysis brought out the impact of FDI in multibrand retailing with a high potential and high growth rate in retail sector and elimination of intermediaries. The issues of great concern are dumping goods in local markets and take it or leave it offer. The economy could benefit only by overcoming the issues of great concern.

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## TABLES

TABLE 1: SOCIO ECONOMIC PROFILE OF THE RESPONDENS

Variables		Number of Respondents (N:72)	
Age(years)	Up to 25	7	09.72
	25-35	22	30.55
	35-45	27	37.50
	45-55	11	15.27
	55 & above	5	06.94
Sex	Male	54	75.00
	Female	18	25.00
Education	Upto school	41	56.95
	Graduation	17	23.61
	Post graduation	14	19.44
Category	Consumers	25	34.72
	Domestic Retailers	15	20.83
	Agriculturist	20	27.78
	Manufacturers	12	16.67

Source: primary data

TABLE 2: OVERALL IMPACT OF FDI IN MULTIBRAND RETAILING

Category	Positive		Negative		Neutral		Total	
	No.of respondents	%	No.of respondents	%	No.of respondents	%	No.of respondents	%
Consumers	22	88.00	02	08.00	1	04.00	25	34.72
Domestic Retailers	04	26.66	08	53.33	3	20.33	15	20.83
Farmers	11	55.00	08	40.00	1	05.00	20	27.78
Producers	04	33.33	06	50.00	2	16.67	12	16.67
Total	41	56.95	24	33.33	7	09.72	72	100

Source: Primary data

TABLE 3: SWOC ANALYSIS FOR FDI IN MULTIBRAND RETAILING - STRENGTHS[S]

Issues	Consumers (n:25)	Domestic Retailers (n:15)	Farmers (n:20)	Producers (n:12)	Total (n:72)	Rank
Backend infrastructure	12(16.66)	14(19.44)	17(23.61)	10(13.88)	53(73.61)	IV
Efficient supply chain	14(19.44)	13(18.05)	11(15.27)	11(15.27)	49(68.05)	VI
Logistics	11(15.27)	13(18.05)	12(16.66)	10(13.88)	46(63.88)	IX
Manufacturing and processing facilities	15(20.83)	15(20.83)	10(13.88)	08(11.11)	48(66.66)	VII
Cold storage	09(12.50)	12(16.66)	17(23.61)	09(12.50)	47(65.27)	VIII
Super-centre's business Models	12(16.66)	11(15.27)	07(9.72)	10(13.88)	40(55.55)	XI
Well capitalized industry	17(23.61)	09(12.50)	10(13.88)	09(12.50)	45(62.50)	X
Lowers retail price	22(30.55)	06(8.33)	13(18.05)	10(13.88)	51(70.83)	V
Ensure food security	18(25.00)	05(6.94)	04(5.55)	04(5.55)	31(43.05)	XIII
Choice in Products	24(33.33)	12(16.66)	09(12.50)	09(12.50)	54(75.00)	III
Contribution to GDP	12(16.66)	06(8.33)	10(13.88)	05(6.94)	33(45.83)	XII
High growth rate	18(25.00)	10(13.88)	18(25.00)	11(15.27)	57(79.16)	II
High potential	19(26.38)	12(16.66)	19(26.38)	10(13.88)	60(83.33)	I

Source: Primary data (figures in parentheses are percentage to the total)

TABLE 4: SWOC ANALYSIS FOR FDI IN MULTIBRAND RETAILING - WEAKNESSES[W]

Issues	Consumers (n:25)	Domestic Retailers (n:15)	Farmers (n:20)	Producers (n:12)	Total (n:72)	Rank
Dumping goods in local markets	21(29.16)	14(19.44)	19(26.38)	12(16.66)	66(91.66)	I
Nation divide: front end and back end facilities	13(18.05)	12(16.66)	17(23.61)	11(15.27)	43(59.72)	V
Investor view nation as fragmentation in view of self interest	14(19.44)	14(19.44)	15(20.83)	10(13.88)	53(73.61)	II
Relationship of investment between front end and back end not contemplated	12(16.66)	11(15.27)	14(19.44)	09(12.50)	46(63.88)	III
Parking and connectivity	15(20.83)	12(16.66)	09(12.50)	10(13.88)	46(63.88)	III
Loss of existing jobs	09(12.50)	12(16.66)	10(13.88)	07(9.72)	38(52.77)	VII
Integration of Indian and global market	16(22.22)	05(6.94)	08(11.11)	06(8.33)	35(48.61)	VIII
Highly unorganized	09(12.50)	13(18.05)	06(8.33)	11(15.27)	39(54.16)	VI
Lack of competition	12(16.66)	07(9.72)	15(20.83)	12(16.66)	46(63.88)	III
Low Productivity	07(9.72)	14(19.44)	13(18.05)	10(13.88)	44(61.11)	IV
Lack of trained professionals	15(20.83)	14(19.44)	12(16.66)	12(16.66)	53(73.61)	II

Source: Primary data (figures in parentheses are percentage to the total)

TABLE 5: SWOC ANALYSIS FOR FDI IN MULTIBRAND RETAILING - OPPORTUNITIES [O]

Issues	Consumers (n:25)	Domestic Retailers (n:15)	Farmers (n:20)	Producers (n:12)	Total (n:72)	Rank
Sell goods at lowest price	23(31.94)	04(05.55)	7(9.72)	9(12.50)	43(59.72)	XI
Infrastructure facilities	21(29.16)	10(13.88)	11(15.27)	10(13.88)	52(72.22)	VII
Procure goods from small scale local producers	17(23.61)	11(15.27)	10(13.88)	5(6.94)	43(59.72)	XI
Job creation	18(25.00)	11(15.27)	12(16.66)	8(11.11)	49(68.05)	IX
Online marketing	16(22.22)	12(16.66)	13(18.05)	9(12.50)	50(69.44)	VIII
Tame food inflation by reducing waste	19(26.38)	10(13.88)	16(22.22)	11(15.27)	56(77.77)	V
Organisation structure for farmers	7(9.72)	6(8.33)	14(19.44)	9(12.50)	36(50.00)	XIV
Vibrant future market for commodities	10(13.88)	9(12.50)	12(16.66)	11(15.27)	42(58.33)	XII
Diffusion of technology	09(12.50)	6(8.33)	11(15.27)	10(13.88)	36(50.00)	XIV
Effective operation of food supply chain	11(15.27)	12(16.66)	15(20.83)	09(12.50)	47(65.27)	X
Transform farming	05(6.94)	06(8.33)	7(9.72)	04(5.55)	22(30.55)	XV
Huge investment in agricultural backend	08(11.11)	09(12.50)	15(20.83)	7(9.72)	39(54.16)	XIII
Elimination of intermediaries	22(30.55)	14(19.44)	20(27.77)	11(15.27)	67(93.05)	I
Transform into organized sector	23(31.94)	14(19.44)	14(19.44)	7(9.72)	58(80.55)	III
Healthy competition	21(29.16)	08(11.11)	13(18.05)	5(6.94)	42(58.33)	XII
Transparency in pricing	24(33.33)	14(19.44)	17(23.61)	4(5.55)	59(81.94)	II
Quality offerings	25(34.72)	10(13.88)	13(18.05)	6(8.33)	54(75.00)	VI
Heavy capital inflow	21(29.16)	13(18.05)	13(18.05)	10(13.88)	57(79.16)	IV

Source: Primary data (figures in parentheses are percentage to the total)

TABLE 6: SWOC ANALYSIS FOR FDI IN MULTIBRAND RETAILING - CHALLENGES [C]

Challenges	Consumers (n:25)	Domestic Retailers (n:15)	Farmers (n:20)	Producers (n:12)	Total (n:72)	Rank
Threat to local businesses	13(6.94)	14(19.44)	18(25.00)	12(16.66)	57(79.16)	IV
Curb growth of entrepreneurship	18(25.00)	8(11.11)	17(23.61)	10(13.88)	53(73.61)	VI
Threat to food security	20(27.77)	13(6.94)	19(26.38)	9(12.50)	61(84.72)	II
Take it or leave it offer	21(29.16)	14(19.44)	20(27.77)	11(15.27)	66(91.66)	I
Own Private label brands	19(26.38)	13(6.94)	14(19.44)	12(16.66)	58(80.55)	III
Squeeze in producer margin	17(23.61)	15(20.83)	11(15.27)	11(15.27)	54(75.00)	V
Bilateral agreement	10(13.88)	13(6.94)	6(8.33)	12(16.66)	41(56.94)	VII

Source: Primary data (figures in parentheses are percentage to the total)

## COMPARATIVE STUDY OF IMAGE ENHANCEMENT TECHNIQUES

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## ABSTRACT

Image Enhancement is one of the important aspects of image processing to improve the interpretability of the information present in images for human viewers. An enhancement algorithm is one that yields a better-quality image for the purpose of some particular application which can be done by either suppressing the noise or increasing the image contrast. Image enhancement algorithms are employed to emphasize, sharpen or smoothen the image features for display and analysis. This paper presents a review of some image enhancement algorithms. The performances of algorithms are evaluated both qualitatively and quantitatively.

## KEYWORDS

Image Enhancement, contrast stretching, Slicing, Histogram equalization, Filters, SNR.

## INTRODUCTION

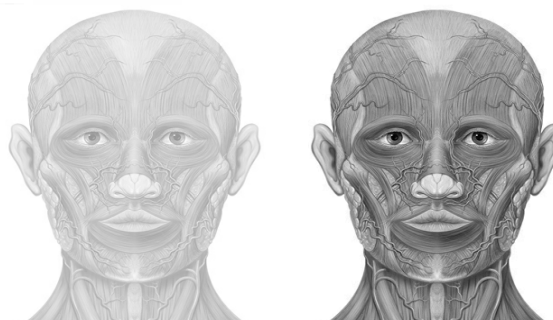
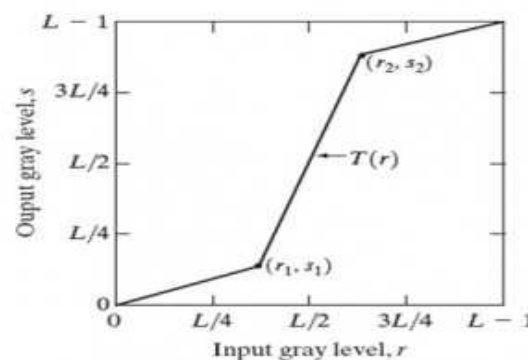
The objective of image enhancement is to improve the quality of image as perceived by human beings through enhancement algorithms. Digital images play an important role in daily life applications such as satellite television as well as in areas of research and technology such as geographical information systems[2]. Whenever an image is converted from one form to other, some form of degradation occurs at output. Improvement in quality of degraded images can be achieved by applying one of the enhancement techniques. Enhancement methods are application specific. Image enhancement techniques emphasize specific image features to improve the visual perception of an image. Image enhancement produces an output image by changing the pixel's intensity of the input image.

Generally, image enhancement enlarges the intensity differences among objects and background. There are many image enhancement techniques that have been proposed and developed[1]. In this paper some image enhancement techniques have been discussed with their mathematical understanding[3]. This paper will provide an overview of underlying concepts with focus on spatial domain techniques and spatial filtering.

## CONTRAST STRETCHING

Contrast stretching is to enhance image contrast. Contrast is enhanced between the various parts of the original image, the basic idea is to improve the image processing gray level dynamic range, that is, the original image by increasing the intensity of a two dynamic range between the value achieved[4]. A typical change in contrast enhancement, can be seen from the Figure 1:

FIGURE 1: SHOWS THE RESULT OF CONTRAST STRETCHING OBTAINED USING A SIMULATION TOOL MATLAB

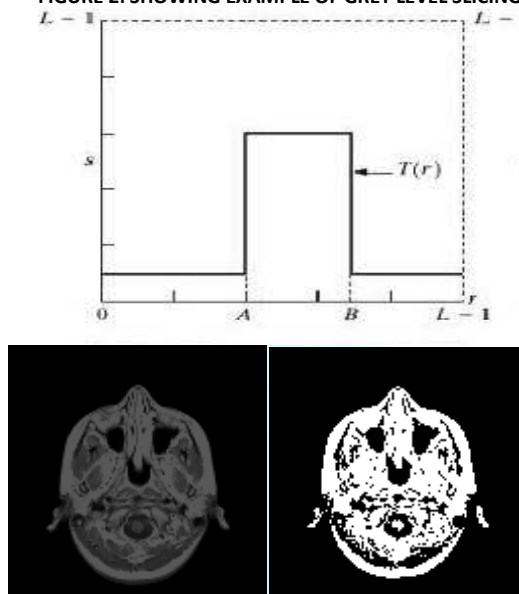




### GREY LEVEL SLICING

A grey level slicing technique enhances all the gray levels in the range of interest using high values and all other gray levels using low values. This function is particularly useful to enhance flaws in X-ray images and enhancing features such as masses of water in satellite imagery. Figure 2 shows the transformation function for the range of pixels of interest and also showing the effect on image.

FIGURE 2: SHOWING EXAMPLE OF GREY LEVEL SLICING



### HISTOGRAM PROCESSING

The histogram of a digital image with intensity levels in the range  $[0, L-1]$  is a discrete function

$$h(r_k) = n_k$$

$k^{\text{th}}$  intensity value      Number of pixels in the image with intensity  $r_k$

Histograms are frequently normalized by the total number of pixels in the image. Assuming an  $M \times N$  image, a normalized histogram.

$$p(r_k) = \frac{n_k}{MN}, \quad k = 0, 1, \dots, L-1$$

is related to probability of occurrence of  $r_k$  in the image.[2].

### HISTOGRAM EQUALIZATION

Histogram equalization is a technique by which the dynamic range of the histogram of an image is increased. It flattens and stretches the dynamic range of the image's histogram and resulting in overall contrast improvement [7]. Histogram equalization assigns the intensity values of pixels in the input image such that the output image contains a uniform distribution of intensities. It improves contrast by obtaining a uniform histogram. This technique can be used on a whole image or just on a part of an image[5].

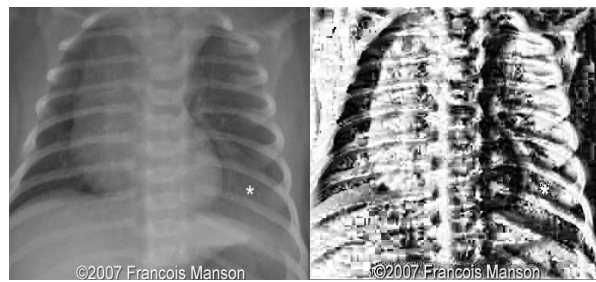
FIGURE 3: SHOWING RESULTS OF HE



### LOCAL ENHANCEMENT TECHNIQUES

The Histogram Equalization discussed above is a global method, which means it increases the overall contrast of the image. So this method is suitable for overall enhancement. This method can be easily adapted to local enhancement. The procedure is to define the neighbourhood and move the center of this area from pixel to pixel. At each location, calculate histogram of the points in the neighborhood. Obtain histogram equalization/specification function. Finally this function is used to map gray level of the pixel centered in neighbourhood[6]. It uses new pixel values and previous histogram to calculate next histogram[3].

FIGURE 4: SHOWING RESULTS OF LHE



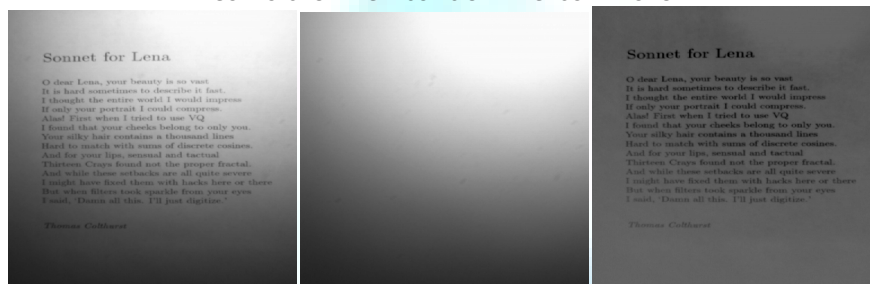
### IMAGE SUBTRACTION

The primary use of image subtraction includes background removal and illumination equalization. The image difference between two images  $f(x,y)$  &  $g(x,y)$  can be expressed as

$$Z(x,y) = f(x,y) - g(x,y)$$

A common use is to subtract background variations in illumination from a scene so that the foreground objects in it may be more easily analyzed.

FIGURE 5: SHOWING RESULTS OF IMAGE SUBTRACTION



By analyzing the image obtained by subtraction, we are able to get the better & more clear image of the text which was badly illuminated.

### SPATIAL FILTERING

The purpose of these filters is to remove unwanted noise from the image. It is one of principle tools used in this field for a wide range of applications[2]. Spatial filters can be broadly classified into two types:

1 Smoothing Spatial Filters

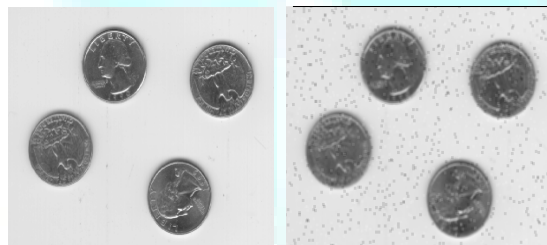
2 Sharpening Spatial Filters

**1 Smoothing Filters:** They are used for blurring and for noise reduction.

#### SMOOTHING LINEAR FILTERS

This is simply the average of pixels contained in the neighbourhood of filter mask. They are also called averaging or low-pass filters. It reduces the noise such as bridging of small gaps in the lines or curves in the image[6].

FIGURE 6: SHOWING RESULTS OF LOW-PASS FILTER



### ORDER-STATISTICS (NON-LINEAR) FILTERS

Their response is based on ordering the pixels contained in the image area encompassed by the filter, and then replacing the center with the value determined by the ranking result[2]. The well known median filter is a Non-Linear filter.

FIGURE 7: SHOWING RESULTS OF MEDIAN FILTER



A median filter smoothens the image by utilizing the median of the neighborhood. Median filter performs the following tasks to find each pixel value in the processed image:

- 1) All pixels in the neighborhood of the pixel in the original image which are identified by the mask are stored in the ascending (or) descending order.
- 2) The median of the stored value is computed and is chosen as the pixel value for the processed image.

**2 Sharpening Spatial Filters:** The principle objective of sharpening is to highlight transitions in intensity. Its applications ranging from electronic printing and medical imaging to industrial inspection[2]. It can provide more visible details that are poor, hazy and of obscured focus in the original image[6].

FIGURE 8: SHOWING RESULTS OF HIGH-PASS FILTER



The well known sharpening filter is High pass filter. High-pass filtering[9],[10] is used for sharpening the image. The objective of high-pass filtering or image sharpening is to high light fine details in the image through enhancing the high frequency components. The spatial filter or spatial mask which performs image sharpening is given below:

The spatial mask which performs image sharpening is given as

$$\frac{1}{9} \times \begin{pmatrix} -1 & -1 & -1 \\ -1 & 8 & -1 \\ -1 & -1 & -1 \end{pmatrix}$$

The sum of all the weights is zero; this implies that the resulting signal will have zero dc value.

#### EXPERIMENTAL RESULTS

A comparison between various spatial domain techniques has been done by implementing these methods in MATLAB. The parameters considered for comparison are SNR, PSNR

Signal-to-Noise Ratio(SNR): It is defined as

$$\frac{\sum_{x=0}^{M-1} \sum_{y=0}^{N-1} \hat{f}(x,y)^2}{\sum_{x=0}^{M-1} \sum_{y=0}^{N-1} [f(x,y) - \hat{f}(x,y)]^2}$$

Here,  $\hat{f}$  is the enhanced image and  $f$  is the original image [8] and higher value is always desired for SNR.

Peak Signal-to-Noise Ratio (PSNR): It is defined as

$$10 \log_{10} \left( \frac{R^2}{MSE} \right)$$

The PSNR computes the peak signal-to-noise ratio, in decibels, between two images. This ratio is often used as a quality measurement between the original and an enhanced image. The higher the PSNR, the better the quality of the enhanced image.

Visual Quality: By looking at the enhanced image, one can easily determine the difference between the input image and the enhanced image and hence, performance of the enhancement technique is evaluated.

TABLE 1: COMPARISON OF VARIOUS PARAMETERS FOR IMAGE

parameters →	SNR	PSNR
Contrast Stretching	8.8708	18.0356
Gray level Slicing	2.9857	9.1104
Histogram Equalization	9.5603	14.2634
Local Enhancement	5.7577	9.4291
Image Subtraction	-8.4707	7.2335

#### CONCLUSION

In this paper, various image enhancement techniques are discussed. These techniques have been implemented and compared. From the experimental results, it is found that all the discussed techniques yield different outputs for different parameters. In future, more images can be taken from the different application fields for the enhancement purpose so that it becomes clearer that which particular technique is more suitable for which application.

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## IMPLEMENTATION OF SHORTEST PATH ALGORITHM FOR RECTILINEAR STEINER TREE PROBLEM

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## ABSTRACT

The rectilinear Steiner minimum tree (RSMT) problem is one of the fundamental problems in physical design, especially in routing, which is known to be NP-complete. Ant colony algorithm is a recent approach inspired by the observation of real ants and based upon their collective foraging behavior. This paper introduces rectilinear Steiner Tree problem and Ant colony algorithm as a method for computing rectilinear Steiner trees in graphs. Tree computation is achieved when multiple ants, starting out from different nodes in the graph, move towards one another and ultimately merge into a single entity. This approach is very useful to solve the routing problem in VLSI chips during fabrication.

## KEYWORDS

Rectilinear Steiner minimum tree (RSMT), routing, physical design, ant colony optimization (ACO).

## INTRODUCTION

**R**outing plays an important role in very large scale integrated circuit/ultra large scale integrated circuit (VLSI/ULSI) physical design. The rectilinear Steiner minimum tree (RSMT) problem is one of the fundamental problems in routing. Connecting a set of points in the plane with a minimal length of vertical and horizontal points are called rectilinear Steiner problem. Since timing consideration require routing path of minimal length these tree have been often used in placement and global routing phases of circuit design.

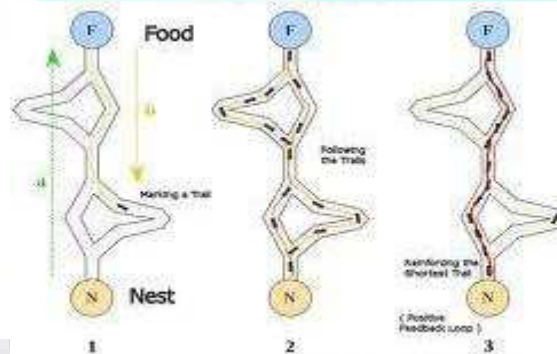
The main contribution of this paper is to propose a practical heuristic, called ACO-Steiner, to construct a RSMT, by which we can get a very short run time and keep the high performance

## ANT COLONY

Ants live in colonies and have evolved to exhibit very complex patterns of social interaction. Such interactions are clearly seen in the foraging strategy of ants. Despite the extremely simplistic behavior of individual ants, they can communicate with one another through secretions called pheromones, and this cooperative activity of the ants in a nest gives rise to an emergent phenomenon known as swarm intelligence. Ant Colony Optimization (ACO) algorithms are a class of algorithms that mimic the cooperative behavior of real ant behavior to achieve complex computations.

The ACO consists of multiple iterations. In the iteration of the algorithm, one or more ants are allowed to execute a move, leaving behind a pheromone trail for others to follow. An ant traces out a single path, probabilistically selecting only one edge at a time, until an entire solution is obtained. Each separate path can be assigned a cost metric, and the sum of all the individual costs defines the function to be minimized by ACO. Figure shown below gives the idea of ant for finding shortest path.

FIGURE 1: ANT BEHAVIOR FOR FINDING SHORTEST PATH



We can easily understand through the ACO algorithm which is given below:

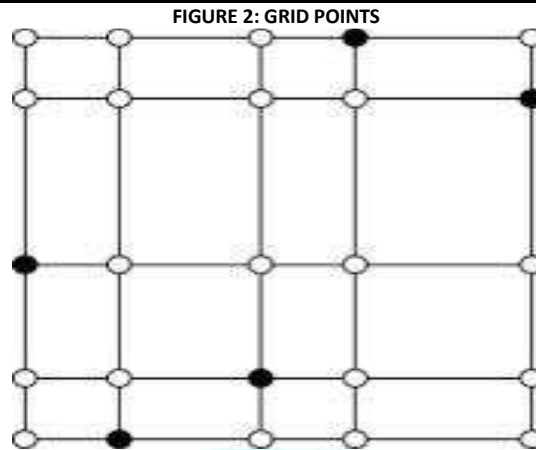
## ACO ALGORITHM

- Initialization;  
    Keep all ants on the initial positions;  
    Set the intensity of trails as a initial value;
- While loopNum < MAXLOOP;
- Construct a complete solution by ants moving;  
    Select an ant by some rule;  
    Make decision based on trail intensity and some greedy rules;
- Update the intensity of trails based on the solution;
- loopNum ++;

## RSMT PROBLEM

A tree is said to be Rectilinear if all of its edges are horizontal or vertical. The RSMT problem is described as: Given a set  $T$  of  $M$  points called terminal in the planes, find a set  $S$  of additional points called Steiner points such that the length of a rectilinear minimal spanning tree with vertex set  $(T \cup S)$  is minimized. The construction of rectilinear tree is always performing on a rectangular surface with the help of horizontal and vertical lines called rows and columns. These horizontal and vertical lines intersect each other on a point called the grid points. So a grid points play a important role for designing the rectilinear tree.





### STRATEGIES TO SELECTING THE ANTS

There are three strategies for selecting the ants to be moved between vertices. These strategies are:

- 1. Fixed sequence strategy:** Here the ants are picked in a fixed sequence, for reassignment into a different vertex. After the last ant is moved, the algorithm is reset to pick the first, ant in the fixed sequence.
  - 2. Shuffled sequence strategy:** Here the algorithm also iterates through the ant set. However, after each ant, was moved to a different location exactly once, the algorithm shuffles the order of the ants randomly before beginning all over again.
  - 3. Random strategy:** In comparison to the other methods, this approach is the most random way to move ants. No ordering is maintained, and an ant is picked up for movement, from the set of all existing ants in a random manner with uniform probability.
- From among these strategies the Random approach gave the best results

### MATHEMATICS USED BEHIND ANT COLONY

In Ant Colony Steiner, we generate the Hanan Grid of the terminal set  $T$ . Then we place ants on each element of  $T$ . An ant  $i$  then determine a new vertex  $j$  to visit, via an edge of the Hanan grid. The choice is based on a higher value  $P_{ij}$ , which is a trade-off between the desirability and the trail intensity. Each ant maintains its own tabu-list, which records the vertices it visits to avoid revisiting them again. Then in the case where ant  $i$  meets ant  $\Omega$ , ant  $i$  dies, and adds the vertices in its tabu-list into the tabu-list of ant  $\Omega$ . After every movement of an ant the trail of the ant is also recorded in a data structure called global View. This data structure allows us to see the interaction of the ants while they are building the RSMT. Each ant in the global View data structure is identified via its identification number. Therefore, the trail of ant 2 would be displayed as sequence of 2's on the path of the trail in the global View data structure, while the trail of ant 3 would be displayed as a sequence of 3's on the path of the trail in the global View data structure and so on. At the point the ant  $i$  meets ant  $\Omega$ , ant  $i$  dies and the trail labeled  $i$  in the global View data structure would be merged with  $\Omega$ 's **trail** in the global View data structure. Thus, all  $i$  will be changed to  $\Omega$  in the global View data structure to reflect  $\Omega$ 's new trail. The trail intensity is updated at the end of each iteration of MAXLOOP. The global View data structure eventually contains the ant identification number on the trail of the only surviving ant. This identification trail is used to display the RMST before pruning.

Let  $j$  be a neighbor of  $i$  in the Hanan grid. Given an ant  $m$ , on vertex  $i$ , the desirability of vertex  $j$  is:

$$\eta_{ij}^m = 1 / [c(i,j) + \gamma \psi_{ij}^m] \quad (1)$$

where  $\gamma$  is a constant,  $\psi_{ij}^m$  is the distance from vertex  $i$  to the nearest vertex in the tabu-list of another ant. This makes the current ant join into others as quickly as possible. The superscript  $m$  is there because  $\psi_{ij}^m$  depends on the previous ant trails.

The updating of the trail intensity in the Hanan edge is defined as Follows:

$$\tau_{ij}(t+1) = (1-\rho)\tau_{ij}(t) + \rho \cdot \Delta\tau_{ij}(t) \quad (2)$$

where  $\rho$  is a constant, representing the pheromone evaporation parameter 't' which is called count, is the variable that ranges between 1 and MAXLOOP

The increments of updating are given by the following formula:

$$\Delta\tau_{ij}(t) = \begin{cases} Q/C(s(t)) & \text{if } (i,j) \in E(t) \\ 0 & \text{otherwise} \end{cases} \quad (3)$$

Where  $C(S(t))$  is the total cost of the current Steiner tree  $S(t)$ .  $E(t)$  is the edge set of  $S(t)$  and  $Q$  is a parameter constant that specifies the amount of pheromone the surviving ant has to distribute through its trail.

The weight of an ant at  $i$  to move on edge is defined as follows:

$$P_{ij}(t) = [\tau_{ij}(t)]^\alpha [\eta_{ij}^m]^\beta / \sum_k [\tau_{ik}(t)]^\alpha [\eta_{ik}^m]^\beta \quad (4)$$

0, otherwise

Where  $A$  is the set making up of all vertices which are connected with  $i$  and  $k$  is not in the tabu-list of ant  $m$ . The parameters  $\alpha$  and  $\beta$  control the relative importance of each variable  $\tau_{ij}$  and  $\eta_{ij}^m$ .

### METHODS OF ANT COL STEINER

In this section we describe the core methods of the AntCol Steiner program. These methods are AntCol Steiner, construct Steiner Tree By ACO, Ant Move and pRune. Ant Col Steiner is used to select the best of all possible trees. Construct Steiner Tree By ACO implements the ant selection strategy and constructs the tree by merging the trails of each of the selected ants when they meet. Ant Move is used to determine which direction the ant should move via the Hanan grid. Finally, the pRune method removes all non terminal leaves from the tree obtained from construct Steiner Tree by ACO.

#### THE ANT COL STEINER (N, M) METHOD

N: This is the dimensions of a square grid.

M: This is the number of terminal points that are randomly generated and placed inside the square array.

1. BEGIN.

2.  $N$  by  $N$  array of string type is initialized with blank spaces.

3.  $M$  random vertices are generated. They have the form  $(r, c)$  where  $r$  represents row and  $c$  represents column of the grid,  $r$  and  $c$  were chosen to be even numbers so that each point in the grid was at least one space away from the other points. The only reason vertices were placed in rows  $r$  and columns  $c$  with even indexes was to make our output easier to understand.

4. At each vertex  $(r, c)$  the letter  $x$  is placed on the grid to indicate that a terminal vertex is created.

5. Using the terminal vertices a Hanan Grid is generated. During the construction of the grid each time a vertical edge and a horizontal edge crossed, the letter  $o$  is placed on the grid to represent a possible Steiner point.

6. An equal amount of pheromone is place on each edge of the Hanan Grid. This represents the initial trail intensity.



7. An ant data structure is created and M instances of the data, structure are declared and initialized. These are our artificial ants.

8. Initialize the best Steiner Tree = construct Steiner Tree by ACO (terminals, grid, intensity, grid Limits).

See the description of this method below.

9. Best S length = get T Length Q

This method gets the length of the Steiner tree just generated.

10. BEGIN WHILE

11. While (count < MAXLOOP)

• FOR each edge in the Hanan grid

- IF

The ant walked on edge of the grid during the previous iterations; update the pheromone intensity along that edge using up date Intensity (s Length, row, col, intensity)

- ELSE reduce the level of pheromone intensity.

- END IF

• END FOR

12. Steiner Tree = construct Steiner Tree By ACO(terminals, grid, intensity, grid Limits)

13. S Length = get T Length () This method returns the length of the Steiner tree just generated.

14. Indicate = choose Best Sol(best S length, s Length) returns true if old tree is still the best.

• IF (indicate)

keep the best Steiner Tree.

• ELSE

- Copy the content of Steiner Tree into best Steiner Tree.

15. Count = count+1.

16. END While

17. After MAXLOOP iterations best Steiner Tree was displayed.

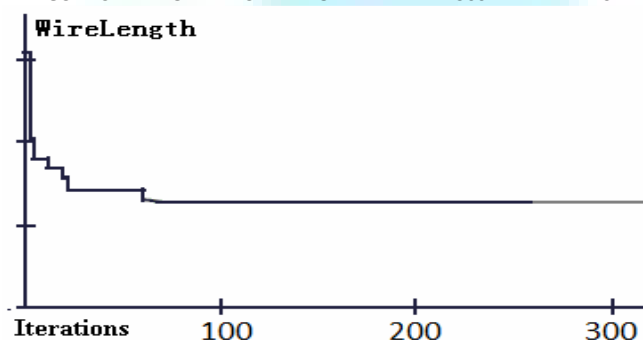
18. END IF

## EXPERIMENTAL RESULTS AND DISCUSSIONS

We have implemented ACO-Steiner algorithm in Java, and we set  $\alpha = 5$ ,  $\beta = 1$ ,  $\gamma = 1$ ,  $\lambda = 3$ , and  $Q = 10000$  in our experiments.

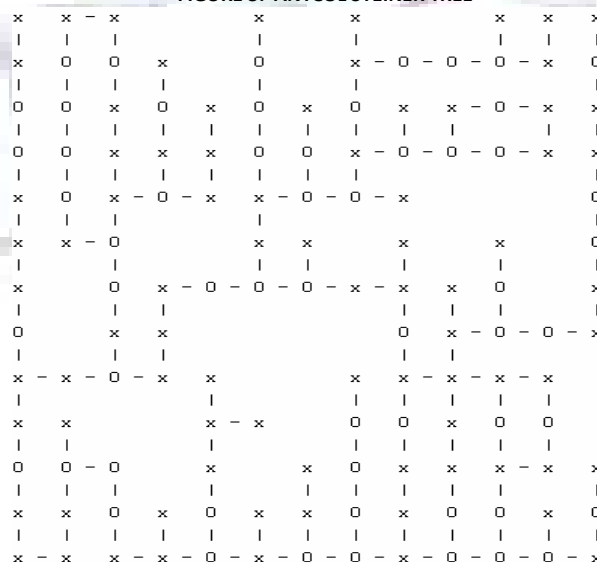
In the experiment, we find that our improvement method described in previous Section is efficient. An ant decides the next node or the edge orient greedily instead of stochastically with the possibility  $p$ . By using this "greedy approach", we can maintain a quick convergence to satisfactory solutions while keeping a good performance. Fig. shows the performance improvements in a 300 terminal RSMT instance. It shows that the algorithm get the most improvement in the first 20 iterations, and improve little after 70 iterations

FIGURE 3: PERFORMANCE IMPROVEMENT IN A 300 TERMINAL RSMT



## GRAPHICAL RESULTS OBTAIN FROM ANT COLONY STEINER

FIGURE 3: ANT COL STEINER TREE



## RESULT

TABLE 1: ANTCOL STEINER TREE RESULT

M	N	Steiner Tree Length	Execution Time(ms)
10	25	33	0.558
15	30	70	0.995
20	30	95	1.130
25	35	110	1.780
30	40	163	3.977
50	40	210	5.771
70	50	302	14.997
100	50	341	23.431
200	50	412	37.347

## CONCLUSION

We propose a practical heuristic for RSMT construction based on ACO. Then, we use a fast-ant strategy to speedup the algorithm. The experimental results show that our heuristic ACO-Steiner keeps the high performance with a very short run time.

Here we also find that there is few chances for improvement in our work. We will continue to improve performance in wire length of ACO-Steiner while keeping short run time, which is regarded as our future work.

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## A STUDY ON FAST MOVING CONSUMER GOODS MARKETING WITH SPECIAL REFERENCE TO SAKTHI MASALA PRODUCTS

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### ABSTRACT

*Fast Moving Consumer Goods (FMCG) goods are popularly named as consumer packaged goods. Items in this category include all consumables (other than groceries/pulses) people buy at regular intervals. The most common in the list are toilet soaps, detergents, shampoos, toothpaste, shaving products, shoe polish, packaged foodstuff, and household accessories and extends to certain electronic goods. These items are meant for daily or frequent consumption and have a high return. The development of marketing is evolutionary rather than revolutionary. There is no single answer to the question of what is marketing? It may be explained in "Marketing is what a marketer does". The evolution of marketing is as old as the Himalayas. It is one of the oldest professions of the world. A rapid urbanization, increase in demands, presence of large number of young population, a large number of opportunities is available in the FMCG sector. FMCG (fast moving consumer goods) is a term that is used to refer to those goods which are sold through retail stores. These goods have a short period of shelf life and as such are used up within days, weeks, or months. At the most it lasts for a year. However there are also durable goods which people replace after using the same for many years. FMCG products are made by companies that also make other products as well. Therefore to determine the best selling brands of fast moving consumer goods one has to look into the performance of FMCG companies which manufacture these products. For this market analysts apply different standard evaluations until they conclude on their findings.*

### KEYWORDS

FMCG, marketing, Sakthi Masala.

### INTRODUCTION

**F**ast-moving consumer goods (FMCG) or consumer packaged goods (CPG) are products that are sold quickly and at relatively low cost. Examples include non-durable goods such as soft drinks, toiletries, and grocery items. Though the absolute profit made on FMCG products is relatively small, they generally sell in large quantities, so the cumulative profit on such products can be substantial. The development of marketing is evolutionary rather than revolutionary. There is no single answer to the question of what is marketing? It means what a marketer does.

The term 'Market' is derived from the Latin word 'Mercatus', it mean "to trade". It also means merchandise, wares, traffic, or a place of business. A market, in general, may be described as a place or geographical area where buyers and seller meet and function, goods and services offered for sale, and transfers of title of ownership occur. Marketing is concerned with the performance of all such activities that facilitate selling. The marketer has to perform a number of activities, the last of which is selling, therefore, is part of marketing. The importance of packaging design as a vehicle for communication and branding is growing in competitive markets for packaged FMCG products. This research utilized a focus group methodology to understand consumer behaviour toward such products. The challenge for researchers is to integrate packaging into an effective purchasing decision model, by understanding Consumer's behaviour towards the packaging of FMCG products.

When consumers search for and process information in-store, the product's package can contain relevant and useful information for the consumer. Product packaging forms the end of the 'promotion-chain' and is close in time to the actual purchase and may therefore play an important role in predicting consumer outcomes. Packages also deliver brand identification and label information like usage instructions, contents, and list of ingredients or raw materials, warnings for use and directives for care of product.

Fast Moving Consumer Goods (FMCG), also known as Consumer Packaged Goods (CPG) is products that are sold quickly at relatively low cost. Though the absolute profit made on

FMCG products is relatively small, they generally sell in large quantities, so the cumulative profit on such products can be large.

### DEFINITION

Frequently purchased in essential or non-essential goods, such as food, toiletries and soft drinks, disposable diapers are called Fast Moving Consumer Goods.

### SCOPE

The term FMCGs refers to those retail goods that are generally replaced or fully used up over a short period of days, weeks, or months, and within one year. This contrasts with durable goods or major appliances such as kitchen appliances, which are generally replaced over a period of several years.

FMCG have a short shelf life, either as a result of high consumer demand or because the product deteriorates rapidly. Some FMCGs—such as meat, fruits and vegetables, dairy products, and baked goods—are highly perishable. Other goods such as alcohol, toiletries, pre-packaged foods, soft drinks, and cleaning products have high turnover rates. An excellent example is a newspaper—every day's newspaper carries different content, making one useless just one day later, necessitating a new purchase every day.

### OBJECTIVES OF THE STUDY

- To know about the history of Sakthi Masala products

- To study the socio-demographic characters of the respondents
- To find out the opinion about the attributes of Sakthi Masala

## MAIN CHARACTERISTICS OF FMCGs

### FROM THE CONSUMERS' PERSPECTIVE

- Frequent purchase
- Low involvement (little or no effort to choose the item – products with strong brand loyalty are exceptions to this rule)
- Low price

### FROM THE MARKETERS' ANGLE

- High volumes
- Low contribution margins
- Extensive distribution networks
- High stock turnover

### The Critical issue in FMCG (or CPG) marketing

To identify, reach and convert these FMCG shoppers you *need* "Launch Engineering". Our consultants *know* FMCG, they *know* how to identify, reach and convert key FMCG shoppers, how to launch your FMCG product successfully and how accelerate adoption and maximise lifecycle.

### FMCG Voice of Experience: Words of wisdom from survivors of FMCG marketing:

**"When your buyer says your brand is to be de-listed, all you can hear is the blood pulsing through your heart, and the taste of bile on your mouth..."**

"We needed Launch engineering three years ago when we started... Now, we need to start again."

"This business is wrought with land mines, not potholes... Anyone who thinks they can nail it without decades of experience, AND a great team, is destined for failure."

"The world of fast moving consumer goods is possibly the hardest, cruellest and disciplined industries all them all: The sheer science, and extraordinary thought, the investment in consumer and competitor analysis for truly focused market orientation, the value validity and constancy of marketing knowledge determines market share, profitability and survival."

At Launch Engineering we hear these comments almost weekly. If you want the easiest path, to **avoid the "potholes and land mines"**, then you need Launch Engineering help.

### HOW TO MARKET FMCG BETTER THAN YOUR COMPETITORS

Launch Engineering helps FMCG businesses be more productive, **improve branding, expand marketing communications**, control ad agencies and refine category management.

FMCG outcomes include an **easier, faster path to trial and brand adoption**. Special proprietary (pre-launch) new product pre-launch assessment tool almost eliminates the chance of a product launch not going to plan; **advanced market segmentation methods give you a competitive 'edge'**. Improved returns from advertising, trade spend (sometimes called promotional budget), sales promotions & public relations (pr & publicity) pays for FMCG consultancy fees many times over!

The retail market for FMCGs includes businesses in the following International Standard Industrial Classification (ISIC) categories.

- ❖ ISIC 5211 retail sales in non-specialized stores
- ❖ ISIC 5219 retail sale in non-specialized stores
- ❖ ISIC 5220 retail sale of food, beverages and tobacco in specialized stores
- ❖ ISIC 5251 retail sale via mail order houses
- ❖ ISIC 5252 retail sale via stalls and marketers
- ❖ ISIC 5259 non-store retail sale.

Some of the best known examples of Fast Moving Consumer Goods Companies include General Mills, H.J.Heniz, Reckitt Benckiser, Sara Lee, Nestle, Unilever, Procter & Gamble, etc.

Sakthi Masala is the queen of spices as the household name among the millions today, The founder of the company was a small time turmeric trader from a village called Perundurai near Erode, Mr.P.C. Duraisamy founder Sakthi trading company in 1975 and was doing turmeric trading for some time. Later he entered into the arena of pure spice powders like Chilli and Coriander.

The customers of Sakthi Masala are the house wives and those who want quick and easy cooking solutions. Restaurants, hostels, hotels, canteens are the other consumers. Sakthi Masala reaches the houses located in the nook & corner of the country through its strong marketing network.

The company uses modern technology in drying the raw materials solar heating channels the largest by a Masala company in Asia to dry the raw materials without losing its natural quality, flavour & aroma Sakthi Masala is serving the society through Sakthi Devi Charitable trust as extended arm Sakthi Masala.

TABLE NO. 1: PERIOD OF PURCHASE

Sl.No.	Period of Purchase	No. Of Respondents	Percentage
1.	Daily	15	20
2.	Weekly	42	56
3.	Two Weeks	14	19
4.	Monthly	4	5
	<b>Total</b>	<b>75</b>	<b>100</b>

The above table shows that the period of purchase the product. Majority 56% of the respondents are purchase in weekly basis and 5% of the respondents are purchase in monthly basis.

TABLE NO. 2: AMOUNT SPENT FOR MONTHLY PURCHASE THE PRODUCT

Sl.No.	Amount spent	No. Of Respondents	Percentage
1.	Below Rs. 5000	40	53
2.	5000 – 10000	20	27
3.	10000-15000	06	18
4.	Above Rs.15000	09	12
	<b>Total</b>	<b>75</b>	<b>100</b>

The above table clears that majority 53% of the respondents are spent the amount for the monthly purchase the product in below Rs.5000/- and 12% of the respondents spent the amount to purchase the product in monthly above Rs.15000.

TABLE NO. 3: PROBLEM FACING DUE TO PURCHASING THE PRODUCT

Sl.No.	Problem facing due to purchase	No. Of Respondents	Percentage
1.	Yes	63	84
2.	No	12	16
	<b>Total</b>	<b>75</b>	<b>100</b>

The above table tells that majority 84% of them accept to facing the problem when buying the product and remaining 16% of them not facing the problem when buy the product.

TABLE NO. 4: TYPES OF PROBLEM

Sl.No.	Types of problem	No. Of Respondents	Percentage
1.	Damage of goods	39	52
2.	Change the value of price	19	25
3.	Delay in supply of product	17	23
	<b>Total</b>	<b>75</b>	<b>100</b>

The above table indicates that majority 52% of the respondents tells the problems due to damage goods, and 23% of them tell delay in supply of the product.

TABLE NO. 5: IDENTIFICATION OF SAKTHI MASALA PRODUCTS

Sl.No.	Identification of the products	No. Of Respondents	Percentage
1.	Brand Name	58	77
2.	Advertisement	15	20
3.	Other reason (Free Gift)	02	03
	<b>Total</b>	<b>75</b>	<b>100</b>

The above table cleared that majority 77% of the respondents are identify the product through the brand name and 03% of them identify the product only for free gift.

## FINDINGS

- 73% of the respondents to prefer this product to satisfy the product in good quality
- 56% of the respondents are buying this product below Rs.5000/- in monthly basis.
- 84% of the respondents are accepting to facing the problem when we have buying the product.
- 77% of the respondents are identify the product through the brand name

## SUGGESTIONS

- Most of them given suggestion to revise for the price and quantity of packed food items
- To give the advertisement is not only in selected media, but given in all channels of distribution.
- To change the colour and package of the product also one of the reason to increase the sales.

## CONCLUSION

Sakthi Masala products can be effective marketing in all places, because most of them accepted the product in quality as well as in tasty and price is low, Today's most of the women's are working in various fields. So most of them likely to buy the Sakthi Masala product and they prepare the foods in easy manner, because the time is save and also getting the tasty foods in very short time. So the people are likely to buy the packed products and reduce the tension of their life. Nevertheless the turnover rates for both these categories are very high depending on customer demand and brand loyalty.

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## A STUDY ON CONSUMER BEHAVIOUR TOWARDS RETAIL STORES WITH REFERENCE TO BIG BAZAAR IN COIMBATORE CITY

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### ABSTRACT

*This paper provides detailed information about the growth of retailing industry in India. It examines the growing awareness and abroad consciousness among people across different socio-economic classes in India and how the urban and semi-urban retail markets are witnessing significant growth. It explores the role of the Government of India in the industry growth and the need for the further reforms. In India the vast middle class and its almost untapped retail industry are the key attractive forced for global retail giants wanting to enter in to newer markets, which in turn will help the Indian Retail Industry to grow faster.*

### KEYWORDS

consumer behaviour, Big Bazar.

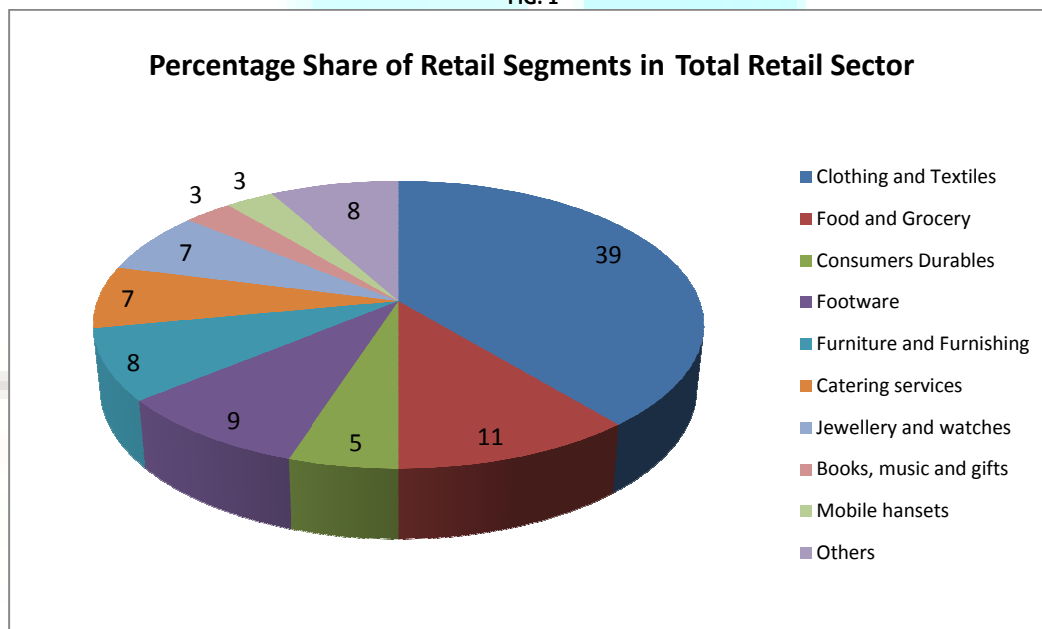
### INTRODUCTION

The India Retail Industry is the largest among all the industries, accounting for over 10 per cent of the country GDP and around 8 per cent of the employment. The Retail Industry in India has come forth as one of the most dynamic and fast paced industries with several players entering the market. But all of them have not yet tasted success because of the heavy initial investments that are required to break even with other companies and compete with them. The Indian Retail Industry is gradually inching its way towards becoming the next boom industry. In India the vast middle class and its almost untapped retail industry are the key attractive forces for global retail giants wanting to enter into newer markets, which in turn will help the India Retail Industry to grow faster. Indian retail is expected to grow 25 per cent annually. Modern retail in Indian could be worth US\$ 175-200 billion by 2016.

### GROWTH OF RETAIL SECTOR IN INDIA

Retail and real estate are the two booming sectors of "India in the present times. And if industry experts are to be believed, the prospects of both the sectors are mutually dependent on each other. Retail, one of India largest industries, has presently emerged as one of the most dynamic and fast paced industries of our times with several players entering the market. Accounting for over 10 per cent of the country GDP and around eight per cent of the employment retailing the Indian is India is gradually inching its way toward becoming the next boom industry.

FIG. 1



Big Bazaar is chain shopping malls in India, owned by the Pantaloon Group and which work on Wal-Mart type economies of scale. They have had considerable success in many Indian cities and small towns. Big Bazaar provides quality items but at an affordable price. It is a very innovative idea and this hypermarket has almost anything under one roof... Apparel, Footwear, toys, Household Appliances and more. The ambience and customer care adds on to the shopping experience.

## OBJECTIVES OF THE STUDY

The main objective is to determine the current consumer behaviour levels with regards to Big Bazaar.

- To identify factors influencing the consumers buying behaviour in Big bazaar.
- To Known the purchase pattern of consumers based on: out let location, Frequency of visit, Amount of money spent during each visit and types of products purchased.

## REVIEW OF LITERATURE

John Adams concluded in his study that the customers would be king and we would get good products at excellent prices. Wal-Mart is considered evil in the US and some cities do not even allow Wal-Mart to set up shops within their limits. One interesting aspects is that Wal-Mart grew in the opposite direction-capturing the rural, small town markets before storming the big cities. Super markets has itself take a toll 'nadar kadais' in fact at the store in my colony, they rearranged the shop according to vaasthu to improve sales. I wonder if they will be able to survive the hypermarkets.

According to Pachauri, Moneesha in his review, Consumer behaviour has interdisciplinary roots; it was a relatively new field of study in the mid to late 1960's. Because it had no history or body of research of its own, marketing theorist borrowed heavily from concepts which were developed in other scientific disciplines, such as psychology (the study of an individual), sociology (the study of groups), social psychology (the study of how an individual operates in groups), anthropology (the influence of society on an individual), and economics to form the basis of this new marketing discipline.

## RESEARCH METHODOLOGY

Technology, customers tastes and preferences play a vital role in today's generation. Research methodology is a test of various methods to be followed to find out various information's regarding market strata of different products. Research methodology is required in every industry for acquiring knowledge of their products.

### RESEARCH DESIGN

Exploratory research

### TYPES OF DATA TO BE USED

- Primary data
- Secondary data

### DATA COLLECTION METHOD

Data is collected from various customers through personal interaction. Specific questionnaire is prepared for collecting data. Data is collected with mere interaction and formal discussion with different respondents. Some other relevant information collected through secondary data.

## ANALYSIS AND INTREPRETATION

TABLE 1. HOW FREQUENTLY DO YOU VISIT BIG BAZAAR?

Frequently Visit	Total	Percentage
Once in week	39	31.2
Once in a every 15days	18	14.4
Monthly	56	44.8
On unplanned basis	12	9.60
<b>Total</b>	<b>125</b>	<b>100.00</b>

**Interpretation:** Out of the 125 respondents 31.2% of respondents visit big bazaar once in a week, 14.4% visit once in 15 days, 44.8% visit monthly and 9.60% visit on unplanned basis. It is known from the above table majority of the respondents visit the shop monthly.

TABLE 2. MONEY SPENT PER VISIT

Money spend	Total	Percentage
Below Rs.500	11	8.80
500-Rs.1,000	37	29.60
1000-2000	65	52.00
More than 2000	12	9.60
<b>Total</b>	<b>125</b>	<b>100.00</b>

**Interpretation:** From the above table it is found that 8.80% of respondents, spend money below Rs.500, 29.60% spend Rs.500-1,000, 52% spend their money between Rs.1000-2000 and 9.60% spend more than Rs.2,000. It is known from the above table majority of the respondents spent their money between Rs.1000-2000 per visit.

TABLE 3. WHICH CATEGORY OF PRODUCTS DO YOU BUY MOST AT BIG BAZAAR?

Products	Total	Percentage
Grocery (Provision)	34	27.20
Gift articles	38	30.40
Medicines	12	9.60
Cosmetic	14	13.60
Kitchen & Utensils	17	11.20
Others	10	8.00
<b>Total</b>	<b>125</b>	<b>100.00</b>

**Interpretation:** From the above table it is found that 27.20% of the respondents purchase grocery (provision), 30.40% of the respondents purchase gift articles 9.60% of the respondents purchase medicines, 13.60% of the respondents purchase cosmetics, 11.20% of the respondents purchase kitchen & utensils and 8% of the respondents purchase others. It is known from the above table that majority of the respondents purchase gift articles.

TABLE 4: MAIN PURPOSE OF PURCHASE

Particulars	Total	Percentage
Personal Usage/consumption	88	70.40
To gift	22	17.60
Any other specify	15	12.00
<b>Total</b>	<b>125</b>	<b>100.00</b>

**Interpretation:** From the above table it is found that 70.40% of respondents purchase for their personal use, 17.60% purchase to gift and 12% purchase for free coupons and discount prices. . From the above table we came to know that the majority of the respondents purchase for their personal purpose.

## FINDINGS

From the responses of 125 customers the findings can be listed as:

- As per the findings, all are having the awareness of Big Bazaar. We can say that Big Bazaar have good place in the minds of the consumers.
- As per findings, Majority of the Respondents are purchasing for the Purpose of Personal use/consumption only.
- As per findings, Majority of the respondents are interested in purchasing gift articles.
- Most of customers spend their money to purchase in-between Rs.1000-2,000

## CONCLUSION

Consumer is the central point and all the marketing activities revolve around it. Manufacturer produces what the consumer wants. As the consumer's attitudes differ from person to person the producer must understand it. Retailer perhaps is the last link in the chain of distribution who sells goods to the ultimate consumer. However, big bazaar can adopt some strategies to get inside the hearts and imaginations of their customers. Attracting a new consumer can cost five times as much as pleasing the existing consumers. Through our research we conclude that big bazaar must continue to alter, adopt and develop products to keep pace with consumers changing desire and preferences.

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## ROLE OF MARKET ORIENTATION IN PERFORMANCE OF SMALL-SCALE INDUSTRIES: A STUDY OF UNISOPENT PVT. LTD.

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### ABSTRACT

*The study explores the application of market orientation (MO) in Indian context. The purpose of my study was to find out if the companies adopt market orientation whether it maybe through product innovation or through market Intelligence, does it affect its performance, i.e does the companies sales rise and helps the customer in becoming loyal to the company. The procedure involved is the Markor Scale which enables us to study mainly 3 variables i.e Intelligence generation, Intelligence Dissemination & Responsiveness. The data collected was on the basis of unstructured questionnaire. Here, the company's sales were studied that which factor raised the business and its performance. This paper concludes that after the study of various firms it shows that the company does get positive results after it has adopted the market orientation.*

### KEYWORDS

market orientation, business performance, case study.

### INTRODUCTION

Market orientation perspectives include the decision-making perspective (Shapiro, 1988), market intelligence perspective (Kohli and Jaworski, 1990), culturally based behavioral perspective (Narver and Slater, 1990), strategic perspective (Ruekert, 1992) and customer orientation perspective (Deshpande et al., 1993).

The two most prominent conceptualizations of market orientation are those given by Kohli and Jaworski (1990) and Narver and Slater (1990). While Kohli and Jaworski (1990) consider market orientation as the implementation of the marketing concept, Narver and Slater (1990) consider it as an organizational culture. The study involves the company's employees and the founder of the company as respondents. The need for such a study was to find whether MO influences the performance of the company. The study is structured in the following way. First, the literature review is done, then the case study is done, including there parameters, Intelligence generation, Intelligence Dissemination & Responsiveness. On the basis of the case study, a model was developed and explained. The managerial implications and research implications are also discussed.

### LITERATURE REVIEW

Kohli and Jaworski (1990) defined market orientation as "the organization-wide generation of market intelligence, dissemination of the intelligence across departments and organization-wide responsiveness to it". According to them, the marketing concept is a business philosophy, whereas the term market orientation refers to the actual implementation of the marketing concept. They added that "a market orientation appears to provide a unifying focus for the efforts and projects of individuals and departments within the organization".

On the other hand, Narver and Slater (1990) consider market orientation as an organizational culture consisting of three behavioral components, namely, i) customer orientation, ii) competitor orientation and iii) interfunctional coordination. In order to measure market orientation, the two most widely used scales are MARKOR and MKTOR.

An increasing number of empirical studies have demonstrated that an improvement in the level of market orientation will lead to superior organizational performance, (Narver and Slater, 1990; Oczkowski and Farrell, 1998; Slater and Narver, 2000). market orientation literature suggests that organizations should aim to become learning oriented if they are to achieve a sustainable competitive advantage, (Slater and Narver, 1995). For example, Dickson (1996) suggests that learning is pre-eminent over other resources because only it enables firms to maintain longterm competitive advantages by continuously improving market information processing. Moreover, argues Dickson, (1996), a strong market orientation can be readily copied but the learning environment that organizes and translates the output of these behaviours into a comparative advantage, cannot (Baker and Sinkula, 1999a, p. 411).

### CASE STUDY

#### Background of the company

If the companies focus more on market-orientation they chance of surviving in the competition market will be more and the performance of the company will be high. The company Unisopent started in the year 2011. The founders Mr. Manpreet Singh and Mr. Manjeet Singh had immense passion for the clothing's for the young men of India. They found that the young boys going to schools and colleges all of them wanted to look smart and handsome but didn't have enough pocket money to change their Tees for all the year around.

Hence came up with the idea of opening such a company that could fulfill their need. They had done immense search of the cloth used to make Tees and how the design which suits the young ones can be printed on them keeping the budget in mind. After all the research work done they made an online site which sold T-shirts not more than Rs.600 and minimum of Rs.200.

The site named as "Unisopent.com" initially started off with simple colors like black, white and blue with attractive designs and witty slogans. Presently, dealing in men's T-shirt, are planning to expand in the categories like Jog-suits, Hood T-shirts, Summer and winter jackets. They have an online portal and promise to deliver the product within the said time. Their constant efforts have made them tie-ups with huge giants of online marketing kings like Jabong and Snapdeal.

They have a well defined organizational structure where they have various departments to do various functions. The structure consists of the buying of raw cloth and dying of cloth into various colors. The next one is of checking the quality of the color and the cloth. After the quality check of the cloth it sent to the tailor to be cut into various sizes and to be stitched accordingly. This process is very tedious and very crucial for the company. As they are left in the blind room where they don't know who they customers are and how they look. Hence follow the Indian standard sizes. Last but the least comes the printing on the T-shirt. Here they print those t-shirts which have been ordered online and have to be sent for the delivery. The printing has to be done very carefully as it requires high skills and experience. After the printing it is sent to the packing section where they are ready with the customers address and orders. Here it is packed and is then dispatched section which is ready to be delivered at the respected addresses.

### METHODOLOGY

To this company, we apply the SAP-LAP model developed by Sushil (2000). Here, we study the situation of the company where first we deal with the internal and external environments. SAP-LAP stand for S-Situation, A-Actors, P-Process, L-Leaning, A-action, P-Performance.

## SITUATION

The internal environment faced by the company is of not having enough funds or liquidity to reach out to all the youths of India by spending huge amount in marketing. They have limited themselves to the online marketing and only a chunk of people know about this company existing. The next problem this company faces is of corporate image, though they are trying too hard to tie themselves with big fishes in market yet are not given that corporate image as they have not boomed up they image and have not pumped them to serve all the youths of the country irrespective of the gender.

## ACTORS

The actors having immense knowledge of the competition in the business and knowing the scenario of the market are waiting for the right tie-up. As they are aware that if they have got to survive they need to tie-up or work in the collaboration with the big fish and then establish themselves as their competitors.

## PROCESS

They have well-understood the process of time and delivery. This is the most important factor which is going to make their customers and the partner companies loyal to them. They are now motivated to improve the process of supplying the product on time and to give more and more innovativeness in their quality and designs which will please the customers. Here, the designing of the t-shirt is more of a creative job, which totally requires new ideas day by day. The actors here are combining their innovation and technology together and rising up as days pass by.

## LEARNING

The stream of research that has developed, following the Narver and Slater (1990) and Jaworski and Kohli (1993) studies, has found that a market orientation is positively related to profitability (Narver and Slater, 1990; Ruekert 1992; Pitt, Caruana, and Berthon, 1996; Kumar, Subramanian and Yauger, 1998; Oczkowski and Farrell, 1998).

This company is expected to rise and has been successful as it is constantly involving the process of market-orientation. *Market orientation* focuses on providing products that respond to both the needs and wants of a target audience. This company focuses totally in catering to the needs of the customer and then focusing on the sales part. This is the biggest reason that this company is constantly rising and is expected to compete with big companies. As if now the bigger companies are focusing in giving push to the sales and increase in profit and generate more and more revenues. But on the other hand, small companies are more market-oriented and in touch with the customers need.

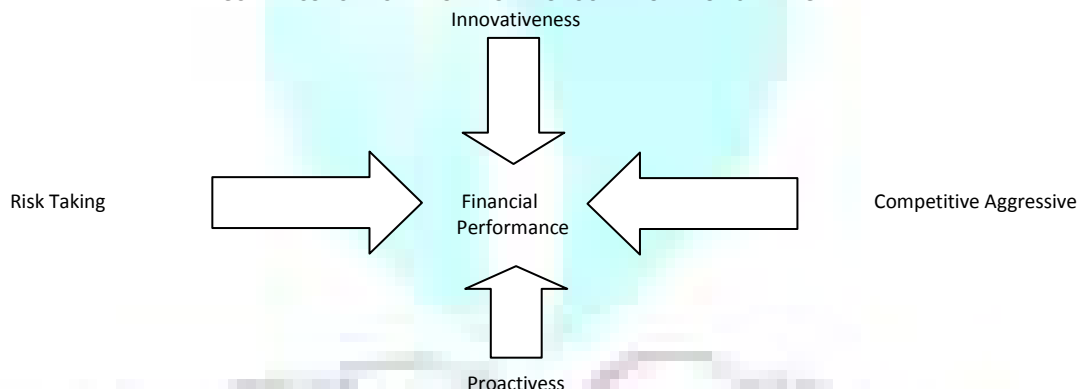
## ACTION

This company campaigns more often in colleges and inquires what do they want and what is their expectations in terms of product (in this case it is t-shirts). They even take the feedbacks of the customers after serving them. The feedback is a very important part in market-orientation as it leads the company to the right path.

## PERFORMANCE

Today, the company employs 50 people, where they are handling the HR and the Finance department themselves. But, it is expected that the number of employees will add upto 50 more by the end of this year they will have tie-ups with international as well as national companies like Flipkart, E-bay and Myntra etc. The target of the company is to include all apparels in the men and women in next coming five years and is expected to serve all of India and overseas countries.

FIGURE 1: CONCEPTUAL MODEL OF PRODUCT INNOVATION STRATEGY



## CONCLUSION

From the above, it is concluded that Market-orientation is the need of the hour irrespective of whether small or big companies. All need profits and revenues and this can be increased by constantly doing MO. As customer is our god and it the first priority. Market-orientation has direct influence on the performance. Small companies need to survive and rise in the big sea they ought to build customers and have to deliver to the best of their capabilities. This can be done when they study the customers need and provide them with what they want.

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**STRATEGIC THINKING: A KEY FOR COMPETITIVENESS IN SMALL BUSINESS OPERATING IN NIGERIA****ONYEAGHALA OBIOMA, H.****SR. LECTURER****DEPARTMENT OF BUSINESS ADMINISTRATION****FEDERAL UNIVERSITY****WUKARI****UKPATA, SUNDAY IJUO****SR. LECTURER****DEPARTMENT OF BUSINESS ADMINISTRATION****FEDERAL UNIVERSITY****WUKAR****ABSTRACT**

*The development of effective strategy is essential for the survival of every business. Through management strategy, managers initiate actions necessary to get the organization from where it is, to where it wants to be. Successful organizations develop and implement strategies that are designed to ensure long-term success. This study which examined the effect of management strategy on the ability of small business to compete in their environment was carried out in Port Harcourt, Rivers State. The variables impacted in this study are management strategy; as independent variable and business competitiveness, as the dependent variable. The study adopted the survey design and the population of study comprised of all small businesses operating in Port Harcourt municipal council. The sample size was 20, chosen systematically from two groups, A and B (the service and non service small business). Structured questionnaire was used to elicit response from respondents. The questionnaire was validated and reliability test carried out to ascertain its suitability. Response from 18 respondents who properly completed the questionnaires were collated and analyzed. The Spearman Rank Correlation was used to test the hypotheses. Result from Data analysis and test of hypotheses indicates that; management strategy has effect on small business competitiveness and that the influence is to a great extent. We therefore recommend that, for small business to achieve competitiveness, they should continually strategize and adjust strategies in line with the products or service offered by competitors. They should therefore provide necessary capabilities to attack and respond quickly to competitive dynamics, this is to avoid competitive rivalry escalating to an intense level.*

**KEYWORDS**

Strategy, Small business, Competitiveness, Competitive dynamics, Competitive rivalry, Content, Context.

**INTRODUCTION**

 Small businesses are vehicles that drive employment generation, poverty alleviation, and sustainable economic development and hold the key for rapid industrialization of any nation. The Nigerian Institute of Management (2005) describes small scale business as an enterprise employing between 1-35 people, utilizing local raw materials for its operations. They include; supermarkets, eateries and bakeries, hairdressing and barbing saloons, business centers, tailoring and fashion design shops, electronics and computer repair centers, furniture makers and etc. It is expected that these businesses grow bigger in the future.

Small businesses operate in competitive environment which makes it difficult for them to fill customer needs. Competition is one of the environmental factors that challenge business, big or small. For every small business to grow, and avoid loss of one or more key customers to competitors, they need to strategize. Amara, Njoku, Ojukwu and Okpata (2012) is of the view that growth plan (a type of strategy) is especially important because, small businesses are vulnerable to smallest changes in the market place, changes in customer preferences, new moves by competitors or fluctuations in the overall business environment which can negatively impact on them, if not projected and adjusted for their future. Since it is the wish of every business to grow, a plan for growth is needed and loss of sales avoided. Most small businesses find it difficult to provide customer satisfaction at a reasonable price. May be customer' decisions are constantly changing with the changes in the business environment. The environment influences the type of business objectives and strategies and consequently, the type of enterprise that will seek to implement them. In a competitive business environment, enterprise existence and survival own allegiance to how effective it can plan to remain competitive, it is therefore important to understand the nature of the environment in which organization function and apply necessary strategies to achieve goal and resolve other problems arising thereof (from the environment where they operate). Since business operate in a macro environment shaped by influences emanating from general economic conditions, population demographics, technology and competition, issues of competitive strategy are likely to be especially important for them. However, decisions on competitive strategies are likely to be strongly influenced by the experience of those running the business; consequently issue of competitive strategy is very relevant. Thus an insight analysis of a firm's external and internal environment is a prerequisite for crafting or exporting a strategy that is an excellent fit with the company's situation which is capable of building competitive advantage, and holds good prospect for boosting business performance.

**STATEMENT OF THE PROBLEM**

Small business as catalyst for employment generation are looked upon to grow, provide jobs for many people and contribute to economic growth, but in Nigeria, these businesses operate in turbulent and competitive environment which remarkably affect their growth. This scenario has put competitive pressures on them making planning surpass available techniques and strategy loose application and efficacy. Small business which is sometimes typified as unplanned and unstructured, where owners react to events with no clear strategy to direct them is argued; do not have deliberate, intended strategy and that the managers manage by impulse, that is to say, they don't have a purposeful and consistent strategy to respond to competitive pressures. These businesses are often described as being at the mercy of unfair competition which threatens their growth and survival from many directions. Today, many of these businesses are closing down and some gross their dismal performance to so many factors but management ineptitude arising from their inability to apply management strategy for competitiveness is easily forgotten, hardly remembered or embraced. This may have informed Johnson and Scholes (1999) to say "Small businesses are likely to be operating in limited number of markets probably with limited range of products and services or their scope of operation look less strategic". Observation has shown that small businesses carry out regular planning i.e. they only develop a plan to achieve the short range objective of profitability, looking to profit as the major indicator for success hence profit maximization becomes their primary goal, thus ignoring long term plans. But Peter Drucker, had warned against focusing solely on profit as a measure of success. Drucker maintains that a preoccupation with profit alone can lead to short term thinking and reactive management behaviours. Buttressing Drucker's belief is Weihrich and Koontz (2005) who say that availability of resources is not always necessary. According to them, Japan, for example, lacks natural resources, yet the country prospered in the past. Mamman et al (2012) may have identified this when they said "business exists to provide products and services that will satisfy their customers, but their major problem is in the area of growth and strategic policies that will

guide their operations". In fact, there appears to be a fundamental problem with small businesses. It does appear that small businesses in Nigeria seems to ignore management strategy, some feel that strategic management is the domain of big businesses thus losing focus of it or they do not consider the environment these businesses find themselves today which necessitates rethinking of courses of action for the unknown. But Strokes (1992) says it all that strategy is significant in the success of small as well as large business. It is against this backdrop that this study is designed to ascertain if small business operating in the competitive environment they find themselves in Nigeria has anything to do with management strategy.

## OBJECTIVE OF THE STUDY

The main objective of this study is to determine if management strategy has any effect on the performance of small business operating in a competitive environment.

Specially, this study examined the following:

- (i) The effect of management strategy on the performance of small business operating in a competitive environment.
- (ii) Level of the effect management strategy has on the performance of small business operating in a competitive environment.

## RESEARCH HYPOTHESES

The following hypotheses were formulated and stated in their null;

Ho<sub>1</sub>: Management strategy has no effect on the performance of small business operating in a competitive environment.

Ho<sub>2</sub>: The level of effect management strategy has on the performance of small business in a competitive environment is not great.

## SIGNIFICANCE OF STUDY

Much as small businesses provide jobs for people, their growth and survival is the desire of many. For the owners of small business, this study will open up new horizon on the need to strategize for competitiveness. Owners of small business will be made to understand that strategy is not the domain of big businesses alone.

Confronted with the growing variability and unpredictability of the environment, small business will increasingly be concerned with finding rational and foresightful ways of adjusting to, and exploiting environmental changes caused by competition. Thus, the result of this study will help them make such adjustments.

For the fact that business failures send negative signals to their owners and employees in terms of loss of income and job which hitherto affects economic growth, this study will therefore benefit employees, owners of small business and the government, for as much as small business survive, they create job opportunities, and help to generate income which adds to the gross domestic product and contribute to economic growth of a nation.

## LITERATURE REVIEW

### THE CONCEPT OF STRATEGY

A strategy is a plan ahead of time. It deals with the generation and alignment of programs to meet predetermined goals and not just the unpredictable but the unknown (Aluko, 1995). Chandler (1962) defined strategy as: "The determination of the basic long-term goals and objectives of an enterprise and the adoption of the courses of action and the allocation of resources necessary for carrying out these goals. In the words of Glueck (19720), strategy is a unified, comprehensive and integrated plan designed to assure that the basic objectives of the enterprise are achieved. Strategy is a word that seems to be more commonly associated with large organizations than small businesses, which are often thought to be run more on tactical lines, with the focus on day to day activities (Strokes, 1992).

In his view about strategy Kazmi (2003) asserts:

*When an old enterprise which has been profitable in the past starts facing new threats in the environment-like the emergence of competitors, it has to rethink the course of action it had been following. With such rethinking, new ways are devised to counter the threats. Alternatively, some new opportunities may emerge in the environment which had not been there in the past. In order to take advantage of these opportunities the enterprise reassesses the approaches it had been following and changes its courses of action. These courses of action are called strategies.*

Strategy is the pattern or common thread related to the organization's activities which are derived from its policies, objectives and goals Kazmi, (2003) maintains.

The strategy of a business integrates its objectives and policies into a cohesive whole, that give activities longer term direction. According to Thompson, Strickland, and Gamble, (2010) the main ingredients of strategy are:

**Objectives:** Broad or narrow targets to be achieved.

**Policies:** Rules or guidelines, defining the limits for activities.

**Activities:** Sequence of actions, sometimes specified as action plans.

It is important to know at this point the type of objectives set by businesses and how they work toward achieving these objectives.

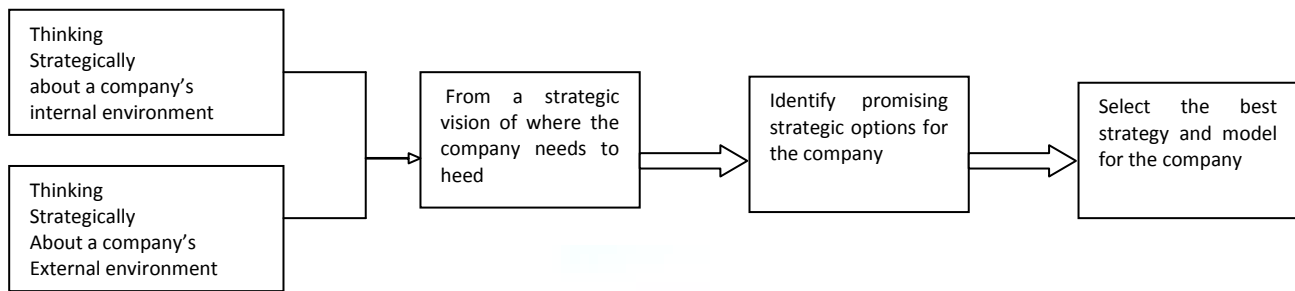
Since business objectives and policies are inextricably linked to the motives of the founders in setting up business by themselves, they are diverse. The objective common to all business is survival. Another common objective is independence, other objectives include:

- (1) Growth in value to eventually secure a capital gain.
- (2) To provide high income to owner(s)
- (3) To ensure the status of the owner(s) in the community.
- (4) To ensure a secure future for the heirs of the owner(s)
- (5) To provide a satisfying place to work
- (6) To represent a democratic and fair system of employment.
- (7) To support artisan methods of production
- (8) To promote environmentally sound business policies,

It is difficult to formulate generally applicable successful strategies because; the criteria for success represented by the objectives of the small enterprises are highly diverse. A pattern of activities emerges which have an element of consistency that amounts to strategy, when recognized these are often then converted to an intended strategy by a deliberate decision. Strategy is formulated by human activity, as well as human design where deliberate, intended strategy is required. Hitt, Ireland and Hoskisson (2001) say:

*because of competitive dynamics (a series of competitive actions and responses among firms competing within a particular industry, including the size of the firm, innovation, product and process quality, speed of decision making), the effectiveness of any strategy is determined not only by the initial move, but by how well the firm anticipates and addresses the move and countermoves of competitors and shifts in customer demands over time.*

Insightful analysis of a company's external and internal environment is a prerequisite for crafting a strategy that is an excellent fit with the company's situation. This is capable of building competitive advantage and hold good prospect for boosting enterprise performance- thus the criteria of a winning strategy (Thompson et al 2010).



Source: Thompson et al (2010)

### CONCEPT OF COMPETITION

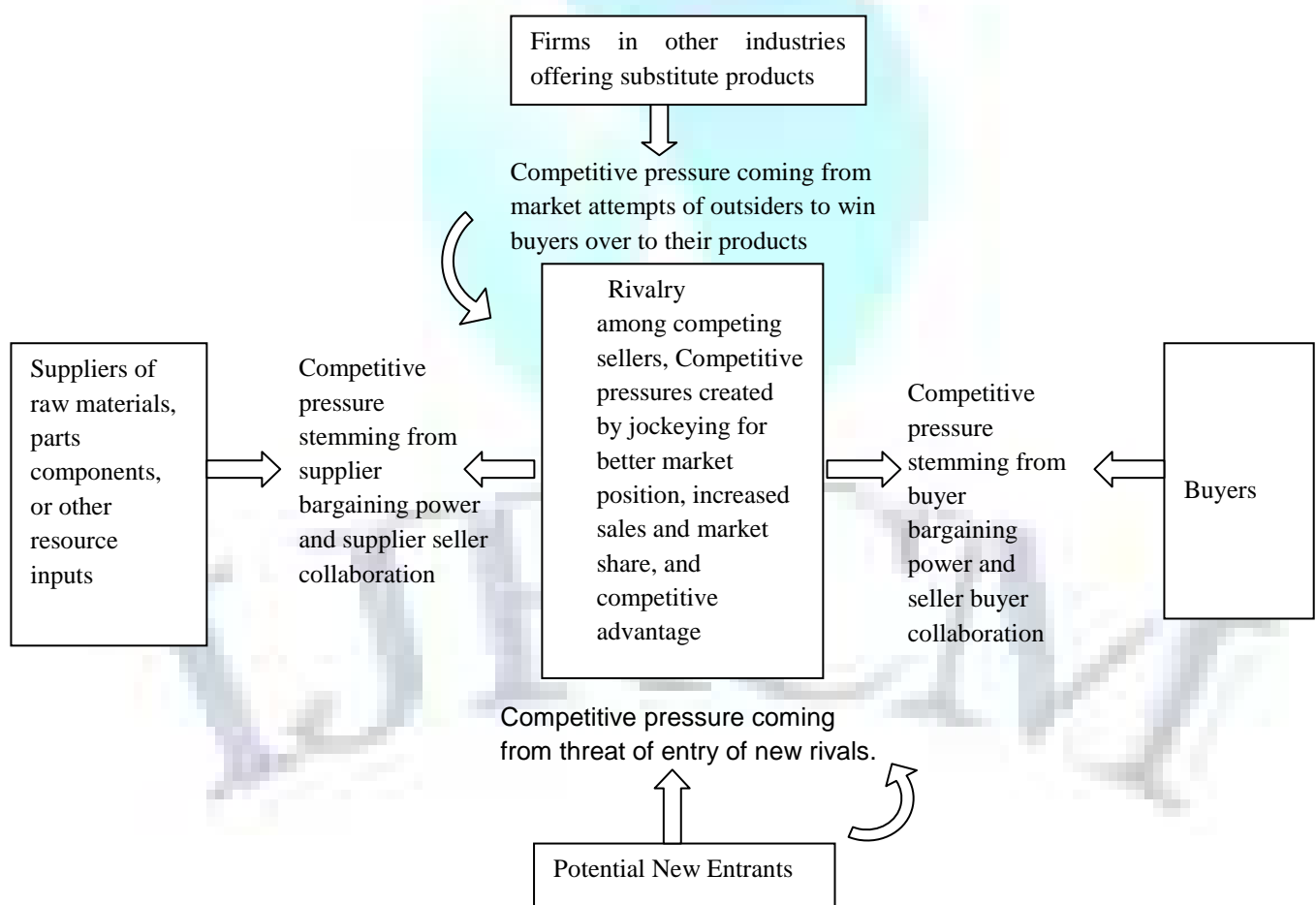
Competition is one of the key external variables of marketing environment. It is the battle among businesses for consumer acceptance. Sales and profits are the yardsticks by which such acceptance is measured. Competition exists when individuals or firms strive for the same economic goals at the same time (Kalu, 1998). Competition is a critical mechanism for guaranteeing that the private enterprise system will continue to provide the goods and services that make for higher living standards and sophisticated life styles. The business world has abundant examples of firms that were once successful but failed to continue satisfying consumer demand because they could not face the competition battle front. Competition assures that, over the long run, firms that satisfy consumer demands will be successful and those that do not will be replaced.

Competition is a constant threat to the life of firms and to keep its share of the market, the firm is forced by competition to continue to improve its products or lower its prices. To successfully improve product or lower price, strategy must be formulated and applied. This results in a changing economy with more and better goods and services available. Similarly, Boone & Kurtz (1982) opined that the private enterprise system requires that firms continually adjust their strategies, product offering, service standards, operating procedures, and the likes, otherwise the competition will gain higher share of an industry's sales and profits.

Thompson et al (2010) assert that firms face competition from three different sources:

- (1) Brand competition from marketers of directly similar products.
- (2) Substitute products that satisfy the same needs.
- (3) Rivals that limit the buying power e.g. rival competition faced by children toys might be the daycare bills/fees.

### THE FIVE – FORCES MODEL OF COMPETITION



Source: Thompson et al (2010)

The above model holds that the state of competition in an industry is a composite of competitive-pressure operating in five areas of the overall market.

- (1) Competitive pressure associated with the market maneuvering and jockeying for buyer patronage that goes on among rival sellers in the industry. This is the strongest of the five forces, making the market a battle field. There is no end to maneuvering for buyer patronage. Rival sellers employ whatever weapon they have in their business arsenal to strengthen their positions, attract and retain buyers, and earn good profits, typical weapons for battling rivals and attracting buyers are; lower prices, more or different features, better product performance, higher quantity, stronger brand

image and appeal, wider selection of models and styles, bigger/ better dealer network. Low interest financing, higher levels of advertising, stronger product innovation capabilities, better customer services capabilities, stronger capability to provide buyers with customer made products. Rivalry intensifies when competing sellers are active in making fresh moves to improve their market standing and business performance.

Entry threats are weaker when the pool of entry conducts is small, entry barriers are high, existing competitors are struggling to earn healthy profits, the industry's outlook is risky or uncertain, buyer demand is growing slowly or is stagnant. Industrial members are strongly contesting the efforts of new entrants to gain a market foothold.

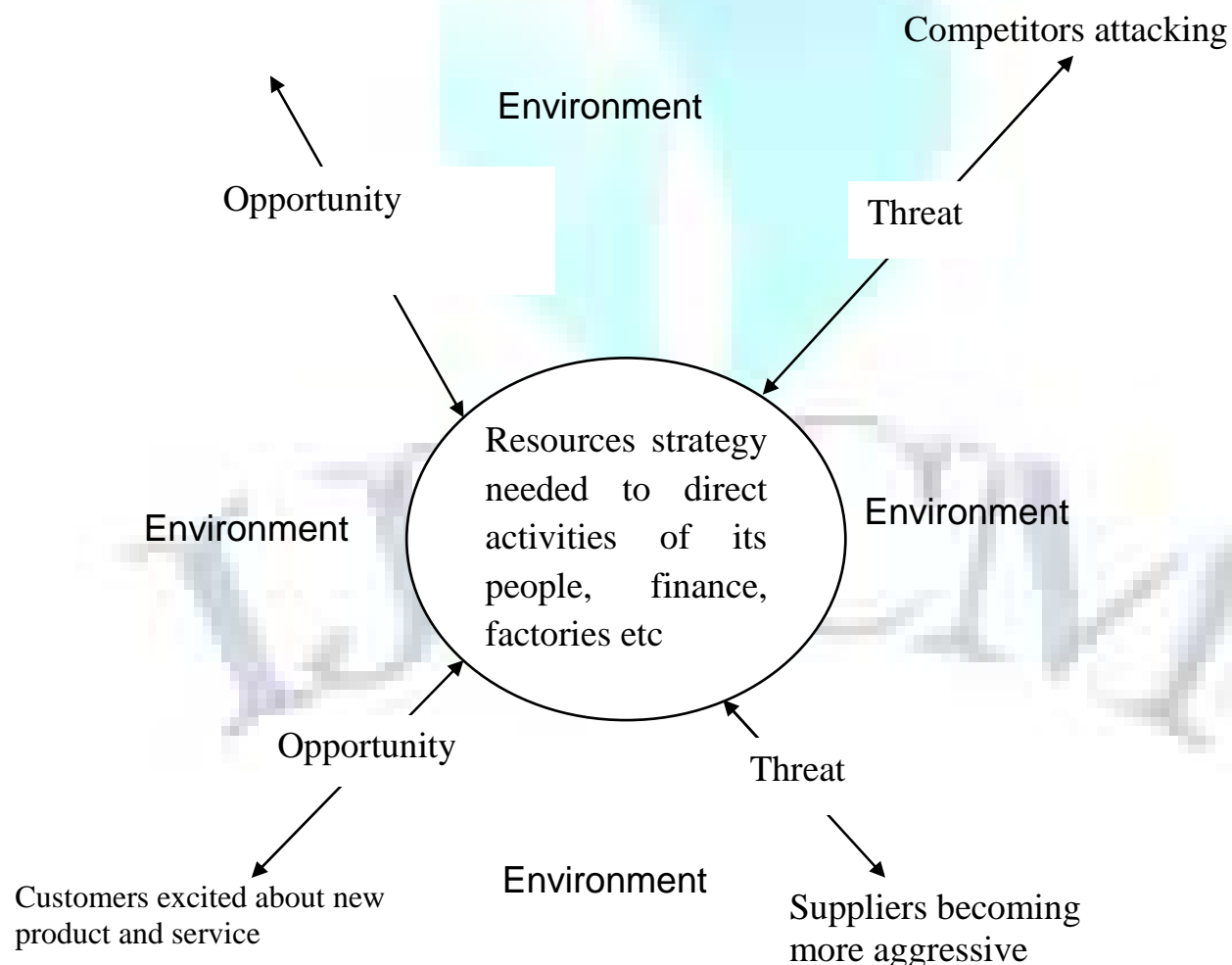
Competitive pressure from substitutes are weaker when; good substitutes are not readily available or don't exist, substitutes are highly priced relative to the performance they deliver, end users have high costs in switching to substitutes.

Supplier bargaining power is weaker when the items being supplied is a commodity, item readily available from many suppliers at the going market price, seller switching costs to alternative supplier are low, Good substitute inputs exists or new ones emerge. There is a surge in the availability of supplies (thus greatly weakening supplier pricing power): Industry members are a threat to integrate backwards into the business of suppliers and to self manufacture their own requirements, seller collaboration or partnering with selected supplier provides attractive win-win opportunities.

Buyers bargaining power is weaker when buyers purchase item infrequently or in small quantities; Buyers switching costs to competing brands are high, There is a surge in buyer demand that creates a sellers market. A seller's brand reputation is important to a buyer, a particular seller's product delivers quality or performance that is very important to buyer and that is not matched in other brands. Buyer collaboration or partnering with selected sellers provides attractive win-win opportunities.

1. **Trends:** Trends signal shifts in the current paradigm (or thinking) of the major population. For instance, there is the fact that the behaviour of one market operator may differ from the other, resulting in different operational behaviours (Akintoye, 2007). Observing trends closely will grant an entrepreneur the ability to recognize a potential opportunity. Trends need to be observed in society, technology, economy, and government. Such trends are: societal trends, aging demographics, health and fitness growth, senior living.
  - a) Technology trends: Mobile (cell phone) technology, e-commerce, internet advances.
  - b) Economic Trends: Higher disposable income; Dual wage-earner families and performance pressures.
  - c) Government Trends: increased regulation, petroleum price and terrorism.
2. **Unexpected occurrences:** These are successes or failures that, because they are unanticipated or unplanned, often prove to be a major innovative surprise to everyone.
3. **Incongruities:** Incongruities occur when a gap or difference exists between expectations and reality for example, when Fred Smith proposed overnight mail delivery, he was told, "if it was that profitable, the U.S. post office would be doing it. It turned out Smith was right. An incongruity existed between what Smith felt was needed and the way business was currently conducted; thus he created FedEx. Similarly, Associated Bus Company (ABC) introduced an alternative to air transport when the weakness in Nigeria road transport continued to increase; a gap many providers failed to fill in the past.
4. **Process Needs:** These occur when an answer to a particular need is required. Venture capitalist refer to these needs as 'pain' that exist in the market place – the entrepreneur must recognize an innovative solution, or 'pain killer'

#### HOW CORPORATE STRATEGY LINKS THE ORGANIZATION'S RESOURCES WITH ITS ENVIRONMENT



Source: Lynch (2006) corporate strategy

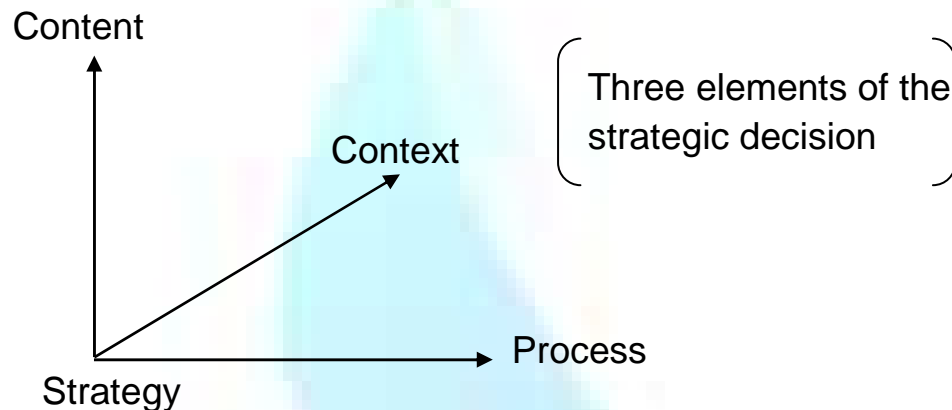


There are five key elements of strategic decisions that are related primarily to the organizations ability to add value and compete in the market place. They are:

- (1) Sustainable Decision that can be maintained over time for long-term survival of the organization
- (2) Develop processes to deliver the strategy: strategy is at least partly about how to develop organizations or allow them to evolve towards their chosen purpose.
- (3) Offer competitive advantage: Sustainable strategy is more likely if the strategy delivers sustainable competitive advantages over actual or potential competitors. Corporate strategy usually takes place in a competitive environment.
- (4) Exploit linkages between the organization and its environment – links that cannot easily be duplicated and will contribute to superior performance. The strategy has to exploit the many linkages that exist between the organization and its environment: suppliers customers, competitors and often the government
- (5) Vision – the ability to move the organization forward in a significant way beyond the current environment. This is likely to involve innovative strategies.

Every strategic decision involves the environment within which the following is achievable:

- (i) Content or reason- Strategy operates and is developed.
- (ii) Context – the main actions of the proposed strategy.
- (iii) Process – How the actions link together or interact with each other as the strategy unfolds against what may be changing environment.
- (iv)



Source: Lynch (2006)

## METHODOLOGY

This study adopted a survey design. Respondents were 20 Small scale business managers /owners, drawn from 40 Small businesses. They were divided into two groups; group "A" (service business) and "B" (non-service business). This grouping is to ensure representation from the service and non-service business. For each group, 10 people were systematically selected which gave the sample size of 20. A simply designed questionnaire with close-ended questions was distributed to the 20 respondents. 18 useable questionnaires provided the data base (90 percent response rate). Responses were rank ordered. Data generated were presented using frequency table and hypotheses tested using Spearman Rank Correlation.

To tests  $H_{01}$ : Responses for the measured dimension; the effect management of strategy on the performance of small business operating in a competitive environment was used. Respondents were asked to indicate whether management strategy has effect or no effect on the performance of small business operating in a competitive environment. Having effect was rated 1, having no effect was rated 2,

TABLE 1: EFFECT OF MANAGEMENT STRATEGY ON PERFORMANCE OF SMALL BUSINESS OPERATING IN A COMPETITIVE ENVIRONMENT

Response from group A	Response from group B	Differences B/W Rank(D)	D <sup>2</sup>
3	1	2	4
4	4	0	0
4	2	2	4
2	4	-2	4
1	3	-2	4
4	2	2	4
4	4	0	0
2	2	0	0
2	4	-2	4
		0	$\Sigma d^2 = 24$

$$r = 1 - \frac{6 \Sigma d^2}{N(N^2 - 1)} \Rightarrow 1 - \frac{6 \times 24}{9(9^2 - 1)}$$

$$r = 1 - \frac{144}{9(81 - 1)} \Rightarrow 1 - \frac{144}{9(80)}$$

$$r = 1 - \frac{144}{720} \quad r = 1 - 0.2$$

$$r = 0.8$$

Since perfect correlation between two valuables would result in a value of +1, if the variable were positively correlated and -1 if they are negatively correlated (Baridam 1995).

A value of 0.8 indicates a positive correlation. Thus, we reject the null hypothesis and accept the alternative hypothesis which says "management strategy has effect on the performance of small business operating in a competitive environment."

Test of  $H_{02}$ : To test this hypothesis, responses from the dimension; what level of effect does management strategy have on the performance of small business operating in a competitive environment was used. For this question, the level of effect management strategy has on the performance of small business operating in a competitive environment was measured by asking respondents to selected one of the options: To a low level rated 1, to a moderate level rated 2 and to a great level rated 3.

TABLE 2: LEVEL OF EFFECT MANAGEMENT STRATEGY HAS ON THE PERFORMANCE OF SMALL BUSINESS OPERATING IN A COMPETITIVE ENVIRONMENT

Repose from group A	Response from group B	Differences B/W Rank(D)	D <sup>2</sup>
1	3	-2	4
2	1	1	1
3	3	0	0
3	1	2	4
2	3	-1	1
1	1	0	0
1	2	-1	1
3	2	1	1
2	2	0	0
		0	$\sum d^2 = 12$

$$r = 1 - \frac{6 \sum d^2}{N(N^2 - 1)} \Rightarrow 1 - \frac{6 \times 12}{9(9^2 - 1)}$$

$$r = 1 - \frac{72}{9(81 - 1)} \Rightarrow 1 - \frac{72}{9(80)}$$

$$r = 1 - \frac{72}{720} \quad r = 1 - 0.1$$

$$r = 0.9$$

Since perfect correlation between two variables would result in a value of +1, if the variables were positively correlated and -1, if they are negatively correlated (Baridam, 1995). Therefore a value of 0.9 indicates a positive correlation. Thus, we reject the null hypothesis and accept the alternative hypothesis which says "management strategy has great effect on the performance of small business operating in a competitive environment."

## DISCUSSION OF FINDINGS

Test of hypothesis one indicates that there is perfect correlation between the measured variables which resulted in a value of 0.8. Since the variables were positively correlated, this shows that management strategy has effect on the performance of small business operating in a competitive environment. In consonance with this outcome, Amara et al(2012) say that growth plan (a type of strategy) is especially important for small businesses because they get easily affected even by smallest changes in the market place which can negatively impact on their activities if not projected and adjusted for their future.

Test of hypothesis two shows that there is perfect correlation between the measured variables which resulted in a value of 0.9. Since the variables were positively correlated, this result depicts that management strategy great effect on the performance of small business operating in a competitive environment to a great extent. Kazmi (2003) is in support of this finding when he said if an old enterprise which has been profitable in the past starts facing new threats in the environment-like the emergence of competitors, it has to rethink the course of action it had been following. With such rethinking, new ways are devised to counter the threats and some new opportunities may emerge in the environment which had not been there in the past. In order to take advantage of these opportunities the enterprise reassesses the approaches it had been following and changes its courses of action.

## CONCLUSION

Based on the findings, we draw conclusion as follows; since management strategy has great effect on the performance of small business operating in a competitive environment, small business may not successfully contend competitive pressures if they fail to see management strategy as a veritable tool and apply same to achieve competitiveness.

## RECOMMENDATION

Small business need to go out and find a market opportunity, then establish and organize a business to satisfy that opportunity, they should understand the capabilities and limitations of an existing business; identify gaps and close such gaps, thus checking competitive rivalry escalating to an intense level..

While businesses never plan to fail, they should have a clear and sustainable plan for operating successfully and competitively in their environment. Small businesses should develop the necessary capacity in terms of time, energy, commitment and action which strategic management requires.

They should not react on competitive pressures rather; proactively formulate suitable strategies which will enable them respond promptly to competitive challenges.

Since it is the wish of every small business today to grow to a large scale tomorrow, for that reason, the growth plan should be set from the inception rather than when they realize it has become necessary.

Like the global imperative management orientation (GMO) which holds that we have very quickly become a global village and managers must adopt a global vision regarding all their activities (Jaja and Zeb-Obipi, 1999), consequently, small business are prone to all forms of competition and as such, should develop management strategies to proactively respond to competitive pressures.

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## IS SMALL SCALE IRRIGATION A SOLUTION FOR ALLEVIATING RURAL POVERTY IN TIGRAY? (CASE STUDY IN HINTALLO WAJIRAT)

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### ABSTRACT

*It has long been since rural poverty became a multifaceted problem in most developing countries. Furthermore, one of the agendas of the Milenium Development Goals is to eradicate rural poverty by 2015. In Ethiopia, where about 85% of the population lives in the country side, rural poverty reduction is the top agenda of the government. To this end, the government has clearly stated in the Growth and Transformation Plan that one way of eradicating rural poverty is through the expansion of small scale irrigation practices in the rural areas of the country. It is with this understanding that this study was conducted using a sample of 240 households selected using simple random and a two- stage stratified sampling with rural as an ultimate unit for obtaining first hand information. Using the Foster, Greer and Thorbeck, FGT, class of poverty measures we assessed the incidence, depth and severity of poverty for both households with and without access to irrigation in the study wereda.. The stochastic dominance analysis showed that the incidence and depth of poverty were significantly lower in household with access to irrigation than in households without access to irrigation. Hence, continued investment in new irrigation projects and maintenance of existing ones in the study wereda will help to attain the government's goals of rural welfare improvements. Moreover, as a reducing poverty and decreasing inequality both have growth-enhancing effects; irrigation investment could have an added benefit. Thus, irrigation in the Hintalo Wajirat Wereda appears to be an investment that can lead to both growth and equity.*

### KEYWORDS

Small scale Irrigation, Rural poverty, FGT.

### 1.1 INTRODUCTION

Ethiopia has diversified physical features that range from the lowest depression known as the Danakil Depression (about 500 metres below sea level) in the Afar Region to the highest peak in the Smien Mountains (over 4,600 metres above sea level. As a result of this and other environmental features, the country has varieties of agro-ecological zones. In addition, Ethiopia is endowed with massive human resource, arable land, livestock and natural resources, which is manifested by the fact that Ethiopia is the second populous country in Sub-Saharan Africa (SSA) and third in the continent with population surpassing 80 million and about 85% of its people are dependent on traditional agriculture and live in rural areas. Agriculture, in Ethiopia, employs about 80% of the labour force and accounts 50% of the GDP (Ministry of Education, 2002, CSA, 2007).

Furthermore, Ethiopia is highly endowed with vast riches of water resources, which include 12 major river basins and 12 natural and artificial lakes. The total runoff, regardless of its distribution, is estimated to be about 122 billion m<sup>3</sup>, of which 75% drains to neighbouring countries. It is also estimated that there is about 2.50 billion m<sup>3</sup> of usable ground water that is not yet exploited much with the exception of rural and urban water supply (UNDP/HDR, 2007/08).

Being an agrarian economy, the Ethiopian economy is highly dependent on the traditional farming system, which is the main stay of the economy. This sector in turn heavily depends on nature in which production and productivity are highly influenced by natural calamities such as climate and hydrological variability that are reflected as droughts, and floods. As a result of low and erratic rain-fall, drought has been frequently manifested and threatened the lives of many people in Ethiopia in general and Tigray regional state in particular (Hagos, *et al*, 1999; Pender and G/medhin, 2004, 2007, G/her 2008).

Moreover, the above problems are manifested in different forms such as low agricultural productivity which resulted in incomes of the poor to be less than one dollar a day, which in turn, is exacerbated by population pressure due to small landholding with landholding being 1 hectare on average (ibid). As a result, rural poverty constitutes the major form of poverty in Ethiopia (Fasil, 1993; Demery, 1999). Hence, it is said that Ethiopia is among the poorest nations in the world. Accordingly, the World Development Report (2007) calculated a per capita income of US\$ 160 (World Bank, 2007), and in the Human Development Index (HDI), Ethiopia has been ranked 170<sup>th</sup> out of 177 nations with HDI value of 0.371 (UNDP, 2006).

This demands poverty reduction policies in Ethiopia to focus on strategies that enhance agricultural productivity of smallholders sector through access to improved extension packages, provision of input and credit supply services, building of infrastructure (mainly rural roads and water supply), and expansion of primary education and health care services.

To this end, the government has been developing macroeconomic strategies that have focused on the reduction of poverty in the nation as a whole.

Achieving broad-based, accelerated and sustained economic growth so as to eradicate poverty has been and is a key objective of the government of Ethiopia. One of the these strategies was the last five year (2005/06-2009/10) development plan which was the plan for Accelerated and Sustained Development to End Poverty (PASDEP). During this plan's period, high and sustained economic growth and significant social and human development results were realised.

To carry forward the important strategic direction pursued in the PASDEP, the government has formulated the five year Growth and Transformation Plan (GTP)(2010/11-2014/15). The GTP envisages that besides maintaining a fast growing economy, better results will be realised in all sectors. During the GTP period, one of the special emphases will be given to agriculture and rural development.

### 1.2 THE PROBLEM STATEMENT

The Ethiopian economy is highly dependent on the agricultural sector which, in turn, primarily depends on erratic and often insufficient rainfall. As a result, there are frequent failures of agricultural production which has a direct negative impact on the income of the rural poor and poverty in the rural areas is more entrenched and widespread than in urban areas.

Because of the spill over effects of the failures in the rural sector, Ethiopia with gross national income per capita of only about US\$ 160 per year and average

income of much less than \$1 per person per day is ranking 202<sup>nd</sup> out of 208 countries (World Bank 2006). Moreover, it is estimated that about 39% of the population lives on absolute poverty of less than a \$1 a day poverty line (MoFED, 2006) while close to 80% falls below US \$2 a day poverty line (World Bank, 2005). The Incidence of extreme poverty is higher in rural areas (39.3 percent) compared to urban areas (35.1 percent) MoFED, 2006).

Despite this severe and prolonged poverty in rural Ethiopia, the country's economy continues to be highly reliant on one sector which, in turn, is heavily dependent on erratic rain-fall in which productivity and production are strongly influenced by climatic and hydrological variability that are reflected as dry spells, droughts and floods.

Therefore, in such type of economy, some kinds of intervention that are deemed important to escape people out of poverty are inevitable not only from economics point of view but also from moral and ethical considerations.

Accordingly, several searchers argued that since the poor are vulnerable and susceptible to exogenous negative shocks due to natural disasters such as drought, flood, typhoon, and etc, providing households with coping strategies against the emergence of such temporary poverty becomes an important policy target. Empirical evidences suggest that irrigation projects have positive impacts on agricultural production and the reduction of poverty (Hussain and Hanjra 2004; Smith 2004; Lipton 2007; and Hussain 2007b, Kebede, 2011). Lipton (2007) reports that in India, irrigated areas had 2.5 times lower standard deviation of crop output per year during the period 1971–84 (as cited in Dillon, 2005). Hagos et al (2007) indicates that in Ethiopia there is significant difference in incidence, depth and severity of poverty in households with access to irrigation than those without irrigation. Nevertheless, Pender et al (2002) reported that returns from investment in irrigation have been relatively low in the Tigray region. Contrary to this last study, Gebregziabher (2008) has found positive and significant impacts of investment in small scale irrigation on income and hence reducing poverty in the Tigray region. In addition, Kebede (2011), using a censored regression model found that access to small-scale irrigation significantly increased mean annual household income in the lake Tana basin of Ethiopia. Thus, the present study is carried out in order to test the impact of small scale irrigation on rural poverty using cross-sectional data in Hintalo Wajirat in the Tigray regional state..

### 1.3 RESEARCH QUESTIONS

This research aims at addressing the impact of small scale irrigation on poverty reduction in rural Tigray. Specifically, the research intends to answer the following question:

1. Does access to small scale irrigation make a difference on the incidence, depth and severity of poverty in the study areas?

### 1.4 THE RESEARCH OBJECTIVE

The overall objective of the present study is to examine the impact of small scale irrigation on poverty of the farm households in Tigray.

To achieve the general objective of the research, the study has the following specific objective:

To assess the impact of small scale irrigation on the incidence, depth and severity of poverty in the study area

### 1.5 RESEARCH HYPOTHESIS

In order to test the realization of the specific objectives of the study, the research intends to test the following hypotheses:

**Hypothesis:** The incidence, depth and severity of poverty are not lower for households with access to small scale irrigation than households without access.

### 1.6 SIGNIFICANCE OF THE RESEARCH

Since the objective of the study is assessing the impact of small scale irrigation on rural poverty in Tigray, the output of the study, therefore, has the following academic and policy issues:

- the study may help to provide an up-to-date picture on the present status of poverty in the study area.
- the study will try to indicate which groups of the poor need an immediate action in lifting them up and it also tries to highlight the role of some interventions such as irrigation in alleviating rural poverty. Hence, this in turn will help for policy planners to take an action deemed to up lift the poorest of the poor in rural areas.
- it is assumed that the study may provide some alternatives or feasible recommendations that may help in linking poverty and irrigation practices in the poverty prone areas of Tigray.

### 1.7 MATERIALS AND METHODS

#### 1.7.1 DATA SOURCES

In order to achieve the objectives of the research, the data sources for the present study are mainly primary cross-sectional household surveys coupled with secondary data sources mainly from various organizations including wereda profiles of the study area.

The primary data are collected through structured questionnaire, focus group discussion with key informants and an in-depth interview with governmental officers and other stakeholders in the study area.

#### 1.7.2 SAMPLING PROCEDURES

In this study, the researcher selected the district using purposive sampling technique. Geographically, Hintallo Wajirat is found in the South Eastern zone in Tigray. From the district, the researcher selected three Tabias (Kebelle) on the basis of the availability of small scale irrigation to farm households in each Kshet (lowest administrative section) using purposive sampling. In the selection of farm households, we used proportionate stratified random sampling technique. This method was employed due to the fact that all the households don't have access to small scale irrigation in the study areas. From each stratum, sample households were selected using systematic random sampling. As a result, a total sample size of 240 sample households, of which 144 households have access to small scale irrigation while 96 households don't have the access.

#### 1.7.3 DATA ANALYSIS

##### 1.7.3.1 DESCRIPTIVE ANALYSIS

The purpose of using this type of analytical tool is to summarise the data by describing the basic features of the data in the study, and to provide simple summaries of the variables and measures in the form of percentages, tables, charts, mean values and we also tested the significance of some variables using simple t-test and chi-square tests.

##### 1.7.3.2 ECONOMETRIC MODELS

##### MEASURING POVERTY INDICES

In this part, the different poverty indices were analyzed. To be more specific, we use the most standard and widely used poverty measure, the Foster, Greer and Thorbecke (1984), FGT, class of poverty index for the measures of poverty.

Given information on a welfare measure such as per capita consumption, and a poverty line, then the only remaining problem is deciding on an appropriate summary measure of aggregate poverty.

The World Bank (2005) states that poverty measures serve to monitor and evaluate social and economic conditions and to give benchmarks of success or failure. In this case, poverty measures are indicators through which interventions are judged and by which the impact of vents (e.g., runaway inflation or the introduction of a government transfer program) can be weighed. Another important use of poverty measures is descriptive. That means poverty measures serve in summarizing complex social and economic conditions that give information with regard to conversations around economic and social priorities. For this purpose, effective measures need not completely capture all (or even most) morally relevant aspects of poverty.

The Foster- Greer-Thorbecke (FGT) class of poverty measures is given as:

$$P\alpha = \frac{1}{n} \sum_{i=1}^q \left( \frac{Z - Y_i}{Z} \right)^{\alpha} \quad (1)$$

where  $\alpha$  = Poverty aversion parameter

$n$  = Total number of individuals in the population or sample



$q$  = Total number of poor individuals

$Z$  = Poverty line

$Y$  = Expenditure of individuals below poverty line  $i = 1, 2, \dots, q$ .

In contrast to Sen's measure (1976) that adopts a rank-order weighting scheme,  $P_\alpha$  takes the weights to be the shortfalls themselves. In this case, deprivation depends on the distance between a poor household's actual expenditure and the poverty line, not the number of households that lie between a given household and the poverty line. It also meets the relative deprivation – the expenditure shortfall of that household criterion of poverty.

$$\alpha = 0, \longrightarrow p_0 = \frac{q}{n} \quad (2)$$

This index is a head count ratio index that reflects the proportion of the poor in total population measuring the incidence of poverty in the whole population. The advantage of the head count measure is that the overall progress in reducing poverty can be assessed right away. Nevertheless, it is insensitive to the depth or severity of poverty and hence, not good to assess the impact of a policy measure.

The advantages of the headcount index are that it is simple to construct and easy to understand. These are important qualities. However the measure has at least three weaknesses:

First, the headcount index does not take the intensity of poverty into account. Consider the following two income distributions:

As a welfare function, the headcount index is unsatisfactory in that it violates the transfer principle – an idea first formulated by Dalton (1920) that states that transfers from a richer to a poorer person should improve the measure of welfare. Here if a somewhat poor household were to give to a very poor household, the headcount index would be unchanged, even though it is reasonable to suppose that poverty overall has lessened.

Second, when a very poor person becomes less poor and when a poor person becomes even poorer, poverty measure must change, but the headcount registers no change in this situation. Most observers, though, following Watts (1968) and Sen (1976), argue that changes in the income distribution below the poverty line matter in a moral sense. This notion is captured by the transfer axiom above, but the headcount fails the test.

Moreover, the easiest way to reduce the headcount index is to target benefits to people just below the poverty line, because they are the ones who are cheapest to move across the line. But by most normative standards, people just below the poverty line are the least deserving of the poor.

$$\alpha = 1 \longrightarrow P_1 = \frac{1}{nz} \sum_{i=1}^q (Z - Y_i) \quad (3)$$

This measure, known as poverty gap, estimates the average distance separating the poor from the poverty line. The poverty gap could be understood as the amount of income transfer needed to close up the gap.  $P_1$  is sensitive to the depth of poverty but not to its severity.

This measure is the mean proportionate poverty gap in the population (where the non-poor have zero poverty gap). Some people find it helpful to think of this measure as the cost of eliminating poverty (relative to the poverty line), because it shows how much would have to be transferred to the poor to bring their incomes or expenditures up to the poverty line (as a proportion of the poverty line). The minimum cost of eliminating poverty using targeted transfers is simply the sum of all the poverty gaps in a population; every gap is filled up to the poverty line. However this interpretation is only reasonable if the transfers could be made perfectly efficiently, for instance with lump sum transfers, which is implausible. Clearly this assumes that the policymaker has a lot of information; one should not be surprised to find that a very "pro-poor" government would need to spend far more than this in the name of poverty reduction.

At the other extreme, one can consider the maximum cost of eliminating poverty, assuming that the policymaker knows nothing about who is poor and who is not. From the form of the index, it can be seen that the ratio of the minimum cost of eliminating poverty with perfect targeting (i.e.  $G_i$ ) to the maximum cost with no targeting (i.e.  $z$ , which would involve providing everyone with enough to ensure they are not below the poverty line) is simply the poverty gap index. Thus this measure is an indicator of the potential saving to the poverty alleviation budget from targeting: the smaller is the poverty gap index, the greater the potential economies for a poverty alleviation budget from identifying the characteristics of the poor – using survey or other information – so as to target benefits and programs.

$$\alpha = 2 \longrightarrow P_2 = \frac{1}{nz^2} \sum_{i=1}^q (Z - Y_i)^2 \quad (4)$$

This is a measure of the severity of poverty. It depicts the severity of poverty by assigning each individual a weight equal to his/her distance from the poverty line. Hence,  $P_2$  takes into account not only the distance separating the poor from the poverty line, but also the inequality among the poor.

This is simply a weighted sum of poverty gaps (as a proportion of the poverty line), where the weights are the proportionate poverty gaps themselves; a poverty gap of (say) 10% of the poverty line is given a weight of 10% while one of 50% is given a weight of 50%; this is in contrast with the poverty gap index, where they are weighted equally. Hence, by squaring the poverty gap index, the measure implicitly puts more weight on observations that fall well below the poverty line.

Although the Foster, Greer and Thorbecke measure provides an elegant unifying framework for measures of poverty, it leaves unanswered the question of what is the best value of  $\alpha$ . Moreover some of these measures also lack emotional appeal.

The measures of poverty depth and poverty severity provide complementary information on the incidence of poverty. It might be the case that some groups have a high poverty incidence but low poverty gap (when numerous members are just below the poverty line), while other groups have a low poverty incidence but a high poverty gap for those who are poor (when relatively few members are below the poverty line but with extremely low levels of consumption). This has a greater implication on the types of interventions needed to help the two groups, which therefore likely to be different.

The validity of these measures was tested using the stochastic dominance tests, which is a graphical representation of the measures. The basic reason for the stochastic dominance test is that poverty measures may change with the variation in the poverty line used. Put it in another way, stochastic dominance tests in poverty analysis check whether the poverty ordering remains the same over different multiples of the poverty line (Dercon, 1998).

In addition, the significance of each poverty measure can be tested using t-test following Kakwani(1993). In this regard, Kakwani(1993) shows that the standard

$$P_\alpha = \sqrt{\frac{P_\alpha^1 - P_\alpha^2}{n}} \quad \text{error of} \quad \text{and sample variance } \sigma^2 \quad \text{(for the Foster class of poverty measure } P_\alpha \text{ can also be calculated by } (\sqrt{NP_\alpha}).$$

Kakwani(1993) further demonstrates that standard error of  $P_\alpha$  is asymptotically normally distributed with zero mean and variance  $\sigma^2(P_\alpha)$ .

$$\text{Then, the standard error of difference in poverty index between two groups } (p_1^* - p_2^*) \text{ is given by } \sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}$$

Thus,  $\eta$  can be used to perform hypothesis testing regarding estimates that the observed poverty difference between two groups is statistically significant or not.

$$\eta = \frac{(P_1^* - P_2^*)}{SE(P_1^* - P_2^*)}$$

In this regard, The formula is

According to Kakwani(1993), the t-value of each poverty index is obtained by dividing the value of poverty measurement by its standard error. The t-value gives an indication of how large the standard error is relative to the value of the estimates. Thus, the larger the value of the estimate of t-value, the greater the precision with the poverty can be estimated from the given sample.

#### THE POVERTY THRESHOLD

In this paper, we use the poverty line developed by Nega (2008). Off course, other researchers like Hagos (2003) constructed poverty line for Tigray based on the cost of basic needs approach. the poverty line for the region was 1033.45 ETB while the food poverty line was 909.44 ETB. However, Nega (2008) constructed poverty line of 1008 ETB compare to the food poverty line of 828 ETB for Hintalo Wajirat. The data collected for this thesis was only for one month; so we converted the poverty line developed by Nega(2008) in to one month. In this paper 143.64 ETB is the poverty line used after taking in to account the effect of inflation in the region.

## 2. ESTIMATION RESULTS AND DISCUSSIONS

This section presents and discusses the empirical findings of the survey. Both descriptive and inferential analysis are performed. However, before discussing the estimation results, it better to discuss the different explanatory variables employed in the estimation. The selection of these variables was based on the conceptual framework WB (2005) and the empirical works of Hagos (2003), Mohammednur (2007), and G/egziabher (2008) in the Tigray region and Seyum (2006), Weldehana et al (2008) and other works in Ethiopia.

Accordingly, the selected explanatory variables were: household demographic characteristics, household livestock ownership, and variables that convey information about access to irrigation.

Some of the household demographic characteristics considered in this case were age of the head of the household, (and its square), gender of the head( male=1, female=0), family size of the household, dependency ratio in the household, marital status of the head of the household, the number of adults (aged between 15 and 64), the number of seniors( aged above 65), and household members with secondary education.

The irrigation related variables include: whether the household has access to irrigation or not, fertilizer adoption, soil type, land quality and plot distance from water source, tropical live stock unit per adult equivalent, oxen ownership.

### 2.1 DESCRIPTIVE STATISTICS OF VARIABLES

The sample was taken for 240 households from three selected villages, 80 from each, in the study area. Of these households surveyed, 144(60%) were households who have no access to irrigation (non-irrigators) and 96 (40%) were households with access to small scale irrigation (irrigators). Of the irrigators, about 22 (15%) households used river diversion while 122(85%) households used dam as a source of water for irrigating their plots. The average plot distance from the water source is 283.21 metre which ranged from 20 to 2230 metres. Out of the 240 households surveyed, 44. (18.52%) were female headed households and 196 (81.48%) were male headed households. The average family size of the surveyed households is 5.19 ranged from 3 to 12. The data also showed that the average household age was 46.14 years which is ranged from 28 to 61 years. With regard to the dependency ratio, the data showed that the average was 1.05 which is ranged from 0 to 3. Out of the total 240 households surveyed, about 48% were poor households whereas about 52% were non-poor households.

TABLE 2.1: SUMMARY OF VARIABLES USED FOR ANALYSIS

Characteristics	Mean value		t- test
	irrigators	non-irrigators	
Gender of Household head	0.830(.379)	0.8024 (.4006)	0.400
Age of the household head	46.245(6.318)	46.160 (6.794)	0.072
Age square of the head	2177.792(591.190)	2176.383(626.9)	0.013
Head's Education	0.528(.503)	0.543 (.501)	-6.809
Family size of the household	5.150(1.955)	5.234 (1.976)	- 0.240
Fertilizer adoption	0.735(.445)	0.580 (.496)	0.000***
Dependency ratio	1.099(.763)	1.022 (.539)	0.684
Land size per adult	0.512(.240)	0.453 (.175)	1.639*
Plot in fertile area	0.603(.493)	0.419 (.496)	2.102**
Log Plot distance from water	4.679(.518)	5.783 (.545)	-11.676***
Distance to market	2.867(1.468)	1.925 (1.394)	3.744***
Distance to irrig.ext off	0.660(.478)	0.325(.471)	4.004***
Expenditure per adult	162.520(46.773)	145.957 (46.412)	2.013**
Oxen per adult equivalent	0.199(.044)	0.1962 (.044)	0.325
TLU per adult equivalent	0.660(.363)	0.588 (.284)	1.293*
Non-land agr. assets per adult	69.060(42.491)	61.342 (28.615)	1.257
Non productive assets per adult	149.290 (159.018)	162.065 (167.0883)	-0.441
Number of seniors	0.207(.409)	0.1234 (.331)	1.307*
Member with elementary education	2.037(1.343)	2.580 (1.556)	-2.080**
Member with secondary education	1.075(.997)	0.888 (1.060)	1.019
Manur adoption	0.886(.319)	0.654 (.478)	3.109***
Improved seed adoption	0.849(.361)	0.7160 (.453)	1.793**

\*\*\* Significant at 1%, \*\* Significant at 5%, and \* Significant at 10%.

Values in the parenthesis represent standard deviations of the given variables.

Source: Author's Calculation.

### 2.2 MEASURING POVERTY INDICES

As it was mentioned above, having information on a welfare measure such as per adult equivalent consumption expenditure and the poverty threshold, then the only remaining problem is deciding on an appropriate summary measure of aggregate poverty. In this case, we use the popular Foster, Greer and Thorbeck (1984) style of poverty measure (FGT), which gives a more convincing classification of poverty among those households, who have access to irrigation and those without it. Consumption expenditure of each household was adjusted for adult equivalence based on the energy required to sustain it. To obtain consumption expenditure per adult equivalent, consumption expenditure was divided by household size adjusted for adult equivalent. We use the equivalence scales used by Hagos et al (2003), Dercon et al (1998).

Table 4.2 indicated that there is significant difference in incidence, depth and severity of poverty between households with access to irrigation and those without it.

TABLE 2.2: THE FGT POVERTY INDICES OF POVERTY MEASURE

	Irrigators	non-irrigators
FGT Index	estimated value	estimated value
Head count ( $P_{\alpha} = 0$ )	0.396 (0.067)	0.567 (0.053)
Poverty gap ( $P_{\alpha} = 1$ )	0.068 (0.016)	0.130 (0.017)
Poverty severity ( $P_{\alpha} = 2$ )	0.018 (0.005)	0.042 (0.007)

Values in parenthesis represent standard errors.

Source: Author's Calculations

As it can be seen from table 2.2, comparatively, the poverty incidence as measured by the head count index, is lower (about 39%) in households who have access to irrigation than in households with out access to irrigation (about 56%) and this idea is supported by the first stochastic dominance test, which showed the head count index is higher in house households with out access to irrigation than households with access to irrigation (see figure 1). The same table also indicated that the depth of poverty, as measured by the poverty gap, is about 6% in households with access to irrigation while it is about 13% in households with out access to irrigation. This shows us that the depth of poverty for households below the poverty line is higher in households with out access to irrigation. This is also confirmed by the second order stochastic dominance test which indicated that poverty depth in households below the poverty line is lower for irrigation users than rain-fed farm households.

Following Kakwani(1993), we tested the significance of each of these poverty indices using the t-test and the results are summarized in table 2.3.

TABLE 2.3 T- TEST FOR THE FOSTER, GREER AND THORBECK CLASS OF POVERTY MEASURES

	Irrigators	non-irrigators	
FGT Index	estimated value	estimated value	t-test
Head count ( $P_{\alpha} = 0$ )	0.396 (0.067)	0.567 (0.053)	-12.27***
Poverty gap ( $P_{\alpha} = 1$ )	0.068 (0.016)	0.130 (0.017)	104.96****
Poverty severity ( $P_{\alpha} = 2$ )	0.018 (0.005)	0.042 (0.007)	11.56***

\*\*\* Significant at 1%, \*\* Significant at 5%, and \* Significant at 10%.

Values in the parenthesis represent standard deviations of the given variables.

Source: Author's Calculation

As it is mentioned in table 2.3above, according to Kakwani (1993), the t-value gives an indication of how large the standard error is relative to the value of the estimates. Thus, in this case, since the t-values are large and significant, it indicates that the precision with which poverty can be estimated from the samples is very high.

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## ANNEXURE

FIG 1: HEAD COUNT INDEX OF HOUSEHOLDS WITH AND WITH OUT ACCESS TO IRRIGATION

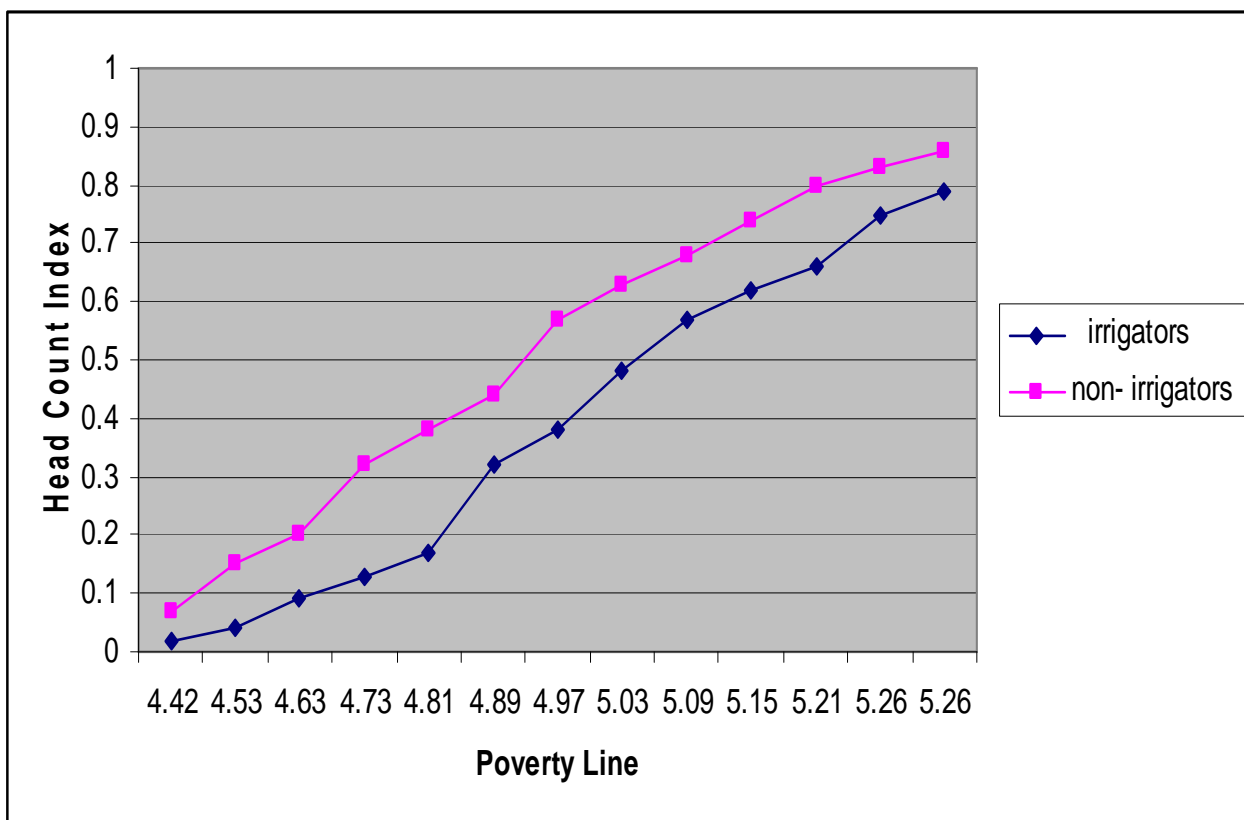
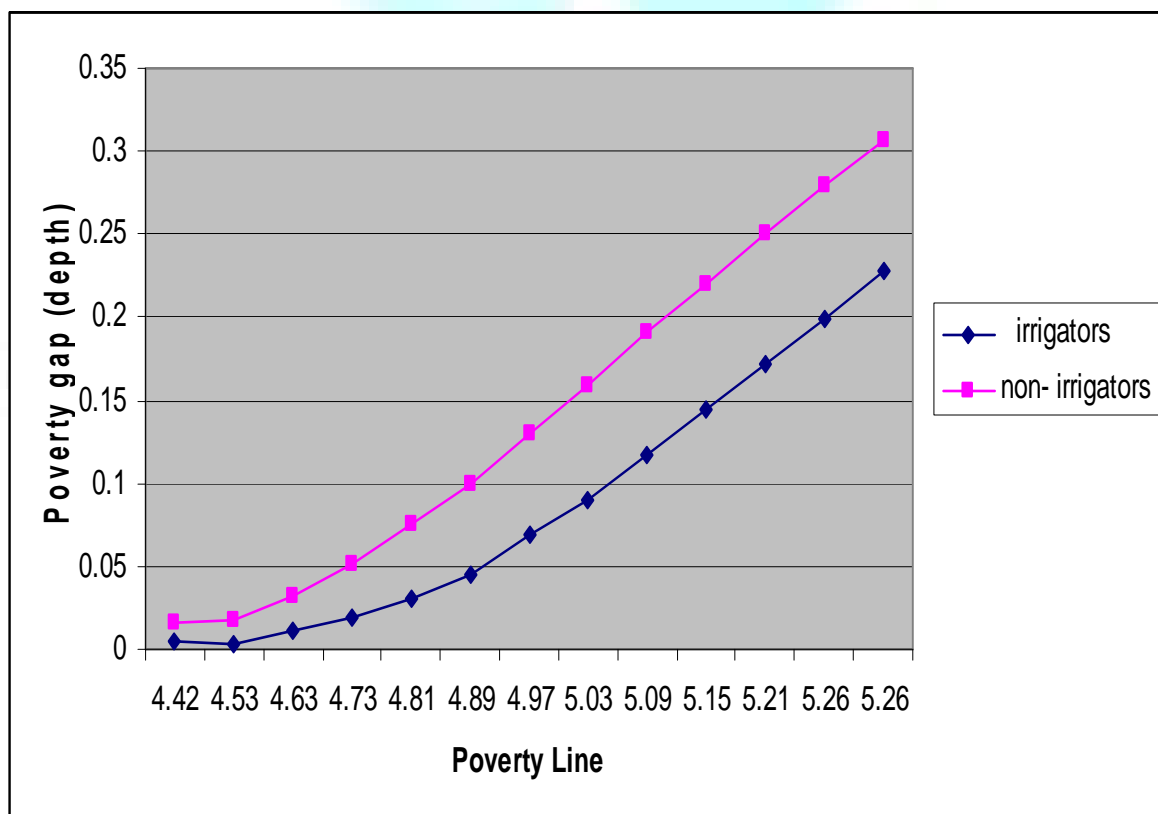


FIG 2: POVERTY GAP (DEPTH) OF HOUSEHOLDS WITH AND WITH OUT ACCESS TO IRRIGATION





## SUMMARY OF VARIABLES

## IRRIGATORS

Variable	Obs	Mean	Std. Dev.	Min	Max
headfemale	53	.8301887	.37906	0	1
headage	53	46.24528	6.318184	35	59
headage2	53	2177.792	591.1908	1225	3481
dependncyr~o	53	1.099057	.7639473	0	3
fertilzr	53	.7358491	.4450991	0	1
manur	53	.8867925	.3198784	0	1
seed	53	.8490566	.3614196	0	1
timtwnmrkt	53	2.867925	1.468093	1	4
timhaethst~n	53	1	0	1	1
timagriext~f	53	.6603774	.4781131	0	1
Madlteqvte~s	53	162.5201	46.77339	80.78407	296.6993
nlndagrias~q	53	69.06031	42.49138	14.63415	261.5385
nprdcstasts~q	53	149.2904	159.0189	17.59531	724.6377
oxnperadlt	53	.1998312	.0443586	.093633	.3225807
tluperadlt	53	.6609931	.363471	.1150307	1.565217
seniors	53	.2075472	.4094316	0	1
membreleme~y	53	2.037736	1.343965	0	5
membrsecdry	53	1.075472	.997093	0	3
farmszpera~t	53	.5122857	.2408044	.1358696	1.449275
lnplotdist	53	4.679623	.5189159	2.995732	6.519147
headeduc1	53	.5283019	.5039755	0	1
frtlelnd	53	.6037736	.4937931	0	1

## NON-IRRIGATORS

Variable	Obs	Mean	Std. Dev.	Min	Max
headfemale	81	.8024691	.4006168	0	1
headage	81	46.16049	6.79422	28	61
headage2	81	2176.383	626.919	784	3721
dependncyr~o	81	1.022016	.5390889	0	2
fertilzr	81	.5802469	.4965933	0	1
manur	81	.654321	.4785523	0	1
seed	81	.7160494	.4537226	0	1
timtwnmrkt	81	1.925926	1.394433	1	4
timhaethst~n	81	1	0	1	1
timagriext~f	80	.325	.4713299	0	1
Madlteqvte~s	81	145.9572	46.41224	61.75538	249.7406
nlndagrias~q	81	61.34283	28.61527	11.68539	147.3171
nprdcstasts~q	81	162.0659	167.0883	10.27919	626.5664
oxnperadlt	81	.1962455	.0448725	.1079914	.2808989
tluperadlt	81	.588288	.2848052	.1098097	1.317073
seniors	81	.1234568	.3310104	0	1
membreleme~y	81	2.580247	1.556151	0	8
membrsecdry	81	.8888889	1.06066	0	4
farmszpera~t	81	.4532323	.1757666	.1331558	.9756098
lnplotdist	81	5.783808	.5456313	4.60517	7.709757
headeduc1	81	.5432099	.501233	0	1
frtlelnd	81	.4197531	.4965933	0	1

# ENVIRONMENTAL CORRELATES OF SCIENCE, TECHNICAL, VOCATIONAL AND BUSINESS EDUCATION FOR ECONOMIC TRANSFORMATION IN NIGERIA

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## ABSTRACT

*This paper evaluates critical issues surrounding the environmental correlates of science, technical, vocational and business education that are germane for economic revitalization and transformation in Nigeria in the current dispensation of world economic turbulence. The specific objective of the study is to determine what environmental correlates impact positively or negatively on science, technical, vocational and business education in Nigeria and what remedial measures are available in order to ensure total economic transformation. The study adopted the use of descriptive survey method through the administration of structured questionnaire to elicit data from 20 respondents selected from amongst the staff and students of the Government Technical and Vocational College Wukari, Taraba State. T- Test statistical tool was used to test our research hypothesis. And the result revealed that there is a statistically significant relationship between environmental correlates such as government policies, culture, social norms and economic transformation through science, technical, vocational and business education. Similarly, there exist an orthogonal relationship between the perceptions of the Nigerian Publics and Government policy thrust on issues of science, technical, vocational and business education generally that contradict the concept of economic development. The study therefore recommends the formulation of policy instrument that would serve as catalyst for encouraging and gingering both parents and students towards learning of science and skill acquisition through vocational, technical and business education.*

## KEYWORDS

Correlates, Skill Acquisition, Myths Of Learning, Science Education, Environment & Development.

## INTRODUCTION

Reponderance of evidences pointed to the fact that, economic transformation in any nation has never taken place outside the development of the nation's human resources through technical, vocational and science education – achievement of which demands deliberate efforts from both the government and private sector partnership. And as the global shift towards using the information communication technology as major service delivery-enabler becomes more like having enough blood in human body, so also is the need for science, technical, vocational and business education becomes the orthogonal demand-drivers to put technology into working in daily human existence. This implies that the country either have it to exist or, does not have it – leading to its extinction from human race. As had been captured by the Federal Ministry of Education (FME, 2010) on National Policy on Information and Communication Technologies (ICT) in education:

*Attainment of qualitative education requires improving on teaching, learning and educational administration. This in turn requires introducing ICT into the educational system, for it is common knowledge, globally, that the latter plays a vital role in promoting such an improvement. Similarly, advances in Information and Communication Technologies (ICT) have made the world a global village and are transforming the world economy presenting challenges that were hitherto unthought-of. Nigeria aspires to attain sustainable development and enhance global competitiveness, a status that requires innovations especially in the development of human capital. There is no gainsaying the fact is that, ICT has become sine qua non in bringing these about.*

From the foregoing perception, of the policy thrust document of the FME (2010), it is crystal clear that the major driver of the global economic transformation is the ICT and vocational, technical, science and business education which serve as key channels through which this can be achieved.

Our present study is revealing that, most technical staff engaged and piloting the operations in most of the computer business centers and numerous cyber cafes are those trained from technical, vocational and business education from polytechnics, monotechnics and other related private training institutions around. This implies that there is need for government legislation to strengthen the certificates obtained from these institutions – which is what this paper seeks to examine.

## STATEMENT OF THE PROBLEM

Major problem confronting this study is the existence of an orthogonal relationship between the perceptions of the Nigerian Publics and Government policy thrust on issues of science, technical, vocational and business education generally that contradict the concept of economic development. Whereas, government advocates for improvement on technical, vocational and business education as a main thrust for economic revitalization, the same government will issue policy documents that strongly discourage or prohibit the general public from sending their children/wards to polytechnics, vocational and technical education where this technical skills can be better effectively acquired. This amounts to a defeatist position leading to self-defeat occasioned by vote of no confidence against self by government itself.

This situation has been characterized by the general public refusing to enroll their wards for technical education either at the secondary school level or, entrance into the Polytechnic and colleges of education through the Unified Tertiary Matriculations Examination UTME. The outcry is that everyone now wants the university education or no school due to government policy pronouncements and contradictions on people with technical and vocational education certificates.

## STUDY OBJECTIVES

The broad objective of the study is to examine the “environmental correlates of science, technical, vocational and business education for economic transformation in Nigeria”. The specific objectives therefore include:

1. To determine if environmental correlates such as government policies, social norms and beliefs, have significant relationship with economic transformation through science, technical, vocational and business education in Nigeria.

**THEORETICAL AND EMPIRICAL REVIEW****GLOBALIZING AND MODERNIZING THE NIGERIA ECONOMY THROUGH EDUCATION**

Both formal and informal educations are important correlates for globalization and economic modernization. The orthogonal variables that ensure this include, science, technical, vocational and business education. Science does not exist in isolation of other technical, vocational and business learning processes. Therefore correlating all the factors to ensure economic transformation is a cardinal point in our current study debate.

Education is the key that unlocks the door to modernization and globalization. It is an investment in human capital from childhood stage to adulthood. To open the door of modernization, and globalization, the National Policy on Education was formulated and developed and this made Nigeria a purpose driven economy with its own philosophy that is geared towards making the Nigerian child relevant to national and global development (Odiba, 2005).

Odiba went further to state that, No nation can develop and be relevant in global events above her education. Education is the basic index for social, economic, cultural, political and technological system world over." To achieve technological breakthrough, science, technical, vocational and business education play important role in this regard. Just like any other nations of the world, how realistic has the Nigerian government been pursuing the attainment of breakthrough in technology using the aforementioned correlates?

According to Khor (2001), "Globalization consists of natural policies of liberalization emanating from technological development. Odiba (2001) adds that, the trinity of trade, finance and production activities depends very much on globalization and adequate training. He further states that, globalization stands to be beneficial to the participating nations. While Pryor (2004) posits that, seven benefits could be derived from globalization by the participating nation. These include:

1. Transfer of technology and sharing of best practices;
2. Local capacity building
3. Promotion of diversity and global work force
4. Corporate responsibility by stimulating sound safe and environmental friendly operations
5. Partnership for sustainable development in host communities
6. Qualitative training and development of employees for higher responsibilities in technologically challenging fields
7. Good governance and transparency.

From the above derivable benefits, one can assert that the first and second beneficial elements can be achieved by sincere application of technical, vocational and business education.

**CONCEPT OF TECHNICAL EDUCATION**

Technical education is one of the key channels of practical learning deliverables in education in Nigeria. On our daily business activities, ranging from home repairs through small business apparatus to large industrial equipment; technicians provide most profound solutions to mechanical problems than the so called trained Engineers. The young *Igbo* boys in Nnewi, Anambra State that are breaking grounds in technical and engineering are all products of technical education. Evidences abounds that the cluster of their vehicle spare parts saturated every Nigerian auto markets. Some are even more reliable than the made in Taiwan, China, Korea and even Japan auto spare parts products.

But the crux of our present investigation hinged on the fact that the Nigerian government has done nothing to boost neither their production capacities nor even helping them acquired and develop their innate inborn technical skills. Technical education has been defined to mean: The instruction in a skill or procedure, usually of a mechanical type, and at a level between that of the professional scientist or engineer and that of a skilled craftsman.

Technicians support scientists and engineers by designing, developing, producing, and maintaining machines and materials. The work of a technician is more limited in scope than that of a scientist or engineer and is commonly considered practical rather than theoretical in its orientation. In industry, jobs for technicians range from those that are narrow in scope and require relatively limited technical understanding, such as the routine inspection of parts, to those that require a considerable level of mathematical, scientific, and applied technological ability, such as engineering aide, instrumentation technician, draftsman and tool designer. The growing field of computer technology is providing many new employment opportunities for technicians (Encarta, 2009).

A technical education is acquired in a number of ways. Many persons learn on the job and supplement their practical experience with correspondence courses and evening school. The armed forces train a large number of technicians, particularly in electronics. Increasing numbers of technicians receive their education in trade schools, technical high schools, vocational-technical schools, community or junior colleges, or technical institutes. The trend is toward education beyond high school, with more skilled technicians and technologists completing either two or four years of college.

**LEARNING THROUGH VOCATIONAL AND BUSINESS EDUCATION**

In so many part of the Eastern states such as Enugu, Anambra, Ebonyi and Imo states, learning through vocational and Business education is a very common system over the years that have led to the production of so many technical staff from these states. Same is true of Benue, Kogi and Plateau states. As Olukotun and Ukpata (2007) put it, "vocational and business education is a household identity of the Eastern Nigeria and the middle belt region of Nigeria."

Many different courses and programs are available. Some schools offer technical training in only a single field, others in a variety of fields. Some schools combine agricultural and industrial training within the same school; other schools train skilled craftspeople as well as technicians. Junior or community colleges offering courses primarily for craftspeople and technicians include courses in the liberal arts, or the technical courses may be offered in a separate division of a liberal arts-oriented junior college. Some senior colleges offer a 4-year baccalaureate program in engineering technology. This has placed the Eastern state citizens on a national competitive advantage in terms of creativity, innovation, skill and competency in technical and craftsmanship all over the Nigerian labour market.

Business Education is clearly a field of training in business practices and in specific skills such as accounting, information processing, keyboarding/typewriting, recordkeeping, and shorthand. For instance, business education in the United States is conducted on two distinct levels: education for administrative support personnel in business and industry and collegiate education for business administration and for business teacher preparation.

*Business education for administrative support personnel is included in the programs of almost every high school and community college, as well as in independent business colleges. Included in such curricula are courses in secretarial skills; bookkeeping and accounting; data processing; business communication, mathematics, and law; computer programming; and business management. These courses are important to the U.S. economy because they provide a steady flow of office workers who are in great demand.* (Encarta, 2009).

**MODERN TRENDS IN SCIENCE AND TECHNOLOGY**

The development of the computer has effected many changes in business education. At the vocational level it has led to the establishment of training programs for computer operators and programmers. At the collegiate level the emphasis has been on utilization of more efficient management information systems to provide data for making business decisions. It is as a result of these new tide of development in science and technology that the Federal Ministry of Education (FME, 2010) articulated a national policy on information and communication technologies (ICT) in education with its vision: "ICT-furthered Education – engaging, enriching, empowering and enabling." And the enabling mission is: "To meet the human resource requirements of the nation for attaining and enhancing sustainable socio-economic development, global competitiveness as well as the individual's ability to survive in a contemporary environment." The FME (2010) articulated the following specific objectives for ICT Education in Nigeria:

1. To facilitate the teaching and learning processes.
2. To promote problem-solving, critical thinking and innovative skills.
3. To promote life-long learning.
4. To enhance the various teaching/learning strategies required to meet the needs of the population.
5. To foster research and development.

6. To support effective and efficient education administration.

7. To enhance universal access to information.

8. To widen access to education and the range of instructional options and opportunities for any-where, any-time, any-place and any-path learning.

In line with these noble objectives, of the FME, Okoroma (2005) supports the view that, "education is an instrument par excellence for effecting national development" (NPE, 2002). It follows that the constitution of the Federal Republic of Nigeria equally provides that, Government shall direct its policy towards ensuring that there are equal and adequate educational opportunities at all levels" (FRN., 1999 Constitution). Supporting this framework, Ukeje (1966) notes that, "education is for life and for living. It is an investment in people which pays untold dividends to the society. When that investment is not made or is made inadequately the society suffers a loss". Similarly, Okoli (1980) posits that, Education is a vital instrument for the improvement of the quality of man in his search for personal freedom and confidence". The question now is, how well have the nexus of Nigerian policies on education been achieved? Have the quality of life of Nigerians been actually improved upon? Are there not policy gaps palpable in the administration and management of educational system in Nigeria?. A cursory look at the policy thrust is paramount in this direction.

### CORRELATES OF THE NIGERIAN POLICY THRUST ON ICT EDUCATION

If science and technology is anything to drive the development of education and transformation of the overall economy, then we examined below the policy document on Information and communication Technologies in Nigeria, to see if the country is making steady progress to achieve its ICT training objectives.

**Policy thrust (2010)** the document states inter alias, Government shall:

1. Build and encourage the development and sustenance of the ICT manpower required to achieve an ICT-furthered education;
2. Establish and sustain a common ICT infrastructure platform for education and encourage the development of a National Education and Research Infrastructure (NERI);
3. Ensure and encourage ICT Research and Development (R&D);
4. Engage in and encourage regular stakeholder consultations, sensitization of the learning community, public awareness and inter-governmental relations to achieve a broad-based consensus on ICT in education;
5. Provide appropriate legal, regulatory and security framework to ensure that ICT in education and the conduct of related activities are focused on achieving ICT-furthered Education; and,
6. Adopt creative financing models for ICT in Education.

With the arrays of these policy correlates in mind, the FME has the following areas of focus on the policy document:

- ❖ Human Capital
- ❖ Infrastructure
- ❖ Research and Development
- ❖ Awareness and Communication
- ❖ Governance; and,
- ❖ Financing

Whilst, Educators and Policy-makers all have come into compromise that: ICT is of Paramount importance to the future of education and that successful contributions to meeting the Millennium Development Goals (MDGs) and Education for All (EFA) goals are most likely to be made by ICT in Education initiatives...(FME, 2009). Our current study has however revealed a disaggregated policy shift and direction to drive the vision and missions of FME as outlined. Results are clearly shown in our field interview conducted for this study.

### STUDY METHODOLOGY

This study was conducted in Wukari Town of Taraba State. The town is bordered by Benue, Nasarawa, and Cross-River states. The choice of the town is occasioned by the poor state of science, vocational, technical and business education generally noticed in the Wukari local government. And we adopted the use of descriptive survey method through the administration of structured questionnaire to elicit data from 20 respondents selected from amongst the staff and students of the Government Technical and Vocational College Wukari, Taraba State. T- test statistical tool was used to test our research hypothesis:

One "Null" hypothesis was drawn for the study which is stated below:

**Hypothesis:** (Null) - environmental correlates such as government policies, social norms and beliefs, have no significant relationship with economic transformation through science, technical, vocational and business education in Nigeria.

The researchers adopted the use of T-test statistical tool to test the above research hypothesis. The correlation coefficient employed is the t test, which is based on testing the hypothesis that no significant relationship exist between attributes. This means that, it will be assumed no significant relationship between any two attributes considered in pairs as hypothesized, to be able to make the test comprehensive, the researchers did the following: (1) the correlation results for r will be used in the t test. (2) the t test is for sample correlation coefficient r. (3) an alpha value i.e., significance level of 5% was considered at n-1 degree of freedom. This is for one tail test. Therefore, in summary, the following hold:

1. The decision region to accept or reject hypothesis within the range of sample correlation coefficient

(r):  $-1 \leq r \leq 1$  is:

- (i) Null hypothesis,  $H_0: r = 0$
- (ii) Alternative hypothesis  $H_1: r \neq 0$ .

If  $r = 0$ , then null hypothesis will be accepted else rejected. Which means the alternative hypothesis will be accepted if  $r \neq 0$ .

2. The t for t test based on r will be tested at 5% level of significance and n-1 degree of freedom. The decision region to accept or reject hypothesis for t test is:

$t_{\text{calculated}} = t_{\text{tabulated}}$ . That is:

- (i) Null hypothesis,  $H_0: t_{\text{calculated}} = t_{\text{tabulated}}$ .
- (ii) Alternative hypothesis,  $H_1: t_{\text{calculated}} \neq t_{\text{tabulated}}$

If  $t_{\text{calculated}} = t_{\text{tabulated}}$ ; then the null hypothesis will be accepted, else rejected. Which means the alternative hypotheses will be accepted, if  $t_{\text{calculated}} \neq t_{\text{tabulated}}$ .

These analyses explain our mathematical formulas presented above.

#### Hypothesis Testing

#### Hypothesis re-statement

**Hypothesis:** (Null) - environmental correlates such as government policies, social norms and beliefs, have no significant relationship with economic transformation through science, technical, vocational and business education in Nigeria.

TABLE 1: CONTINGENCY TABLE FOR T – TEST CALCULATED

Response	X	(X – $\bar{X}$ )
Agree	16	12
Strongly Agree	4	-
Disagree	-	-
Strongly Disagree	-	-
Undecided	-	-
Total	$\Sigma X = 20$	$\Sigma (X - \bar{X}) = 12$

Source: Field Survey, (2012) (Extracted from table 2, Appendix II)



Using our formula:  $t = \frac{\bar{X} - U}{S/\sqrt{n}}$

$S/\sqrt{n}$

Where:

$\bar{X}$  = Mean of the sample

U = Mean of the population

S = Standard deviation of the sample,  $\frac{\sqrt{\sum(X-\bar{X})^2}}{n-1}$

n = Population

$\sigma$  = Standard deviation of the population

V = n - 1 is degree of freedom

$$= \frac{4 - 20}{3/\sqrt{20}}$$

$$= \frac{-16}{3/4.47}$$

$$= \frac{-16}{0.67}$$

$$= -23.9$$

The degree of freedom V = n - 1

$$V = 20 - 1$$

$$= 19$$

t at 0.05 = 1.7291

**Decision:** Since the calculated value of the t – distribution is far less than the critical value; we reject the “Null” hypothesis ( $H_0$ ) and accept the “Alternative” ( $H_1$ ). This means that, the environmental correlates such as government policies, social norms and beliefs, have significant relationship with economic transformation through science, technical, vocational and business education in Nigeria.

## DISCUSSION OF FINDINGS

From the results obtained from the field as indicated in table 1, appendix II, respondents’ reactions to our field questionnaire clearly confirm that, government actions are completely in the opposite direction of the policy thrust on science, technical, vocational and business education spelt out. Most respondents who were all both teachers and students of the technical school expressed bitterness over the way and manner in which government treat them differently as second-fiddle compare to other formal secondary schools.

Similarly, teachers in the school studied confirmed that most of the students who graduated from the technical schools are being discriminated against during admission into universities and as such parents are no longer willing to send their wards to them for technical education. This has ultimately affected total enrollment negatively over the past five years. These conditions depict an orthogonal relationship between both government and public attitudes in Nigeria towards issues of technical, vocational and business education – which seem to suggest that the government itself passed a vote of no confidence against itself by consistently discriminating against graduates with certificate from this non-formal training which it seems to encourage in its policy thrust. Parents being wary over times also, are now not willing to allow their wards to pass through this trauma of discrimination by government and private sector institutions.

## CONCLUSION

In conclusion, it is pertinent to state that education is capable of transforming the entire Nigerian national economy and it is the only trajectory through which any nation of the world can liberate its citizens from poverty and ignorance. As important as Information and communication technologies are to transforming our economy, it is an indubitable fact that, there can be no short-cut to it; you only get right ICT through direct romance with education and training in it. You either have it or you don’t have it. Bill Gates, in his book, “Business at the Speed of Thought: Using a Digital Nervous System”, observed that the most meaningful way to differentiate your company from your competitors, the best way to put distance between you and the crowd is to do an outstanding job with information. How you “gather, manage and use information will determine whether you win or lose.” Therefore, science, technical, vocational and business education will enable us migrate faster to the zenith of economic advancement.

## RECOMMENDATIONS

From the empirical analysis of our field investigation, the study recommends the followings:

1. Government to formulate policy such as compulsory skill acquisition at the primary and secondary school levels.
2. It is recommended that federal and state governments put in place, policies that would compel primary school pupils at grade six to only learn skills, trade and craft and work for 3 months before proceeding to secondary school. This will build in any Nigerian child, the consciousness of acquiring technical education for self reliance.
3. More attention should be given to technical and vocational training centers by government in form of grants and support for infrastructure and provisions of workshops including scholarship.
4. Nigeria should stop hiring Artisans from Japan, South Korea; China USA etc to manage major construction and civil engineering projects rather, the government should help the local-based artisans who have acquired similar skills for such jobs. Most times better than the whites.
5. The Nnewi technological stronghold should be encouraged all over the states of the federation by sending those boys out to train others and pay them high enough just as they are paying footballers that do not contribute to technological breakthrough.

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## TABLES

TABLE 1: FIELD QUESTIONNAIRE

VARIABLE	OPTIONS				
	A	SA	D	SD	U
1. Government lacks the will to implement policy on education in Nigeria					
2. Government policies discriminate against graduates of technical, vocational and business education in job market					
3. Most parents are unwilling sending their wards to vocational education because of certificate discrimination					
4. Social and political recognition given to people with vocational, technical and business education is less compare to formal education					
5. Government has not sensitized the public much on informal education and training					
6. Most of government programmes on ICT are urban centered					
7. Government financing of technical, vocational , and business education is poor					
8. teaching staff in the non-formal education sector are poorly trained					

Source: Field Survey, (2012)

TABLE 2: RESPONDENTS' REACTIONS TO QUESTIONNAIRE OPTIONS

Reaction	No of Respondents	Percentage (%)
Agree	16	80
Strongly Agree	4	20
Disagree	0	0
Strongly Disagree	0	0
Undecided	0	0
<b>Total</b>	<b>20</b>	<b>100</b>

Source: Field Survey, (2012)

## EMPLOYEES PERCEPTION TOWARDS HRD CLIMATE IN THE BANKING SECTOR: A CASE STUDY OF JAMMU AND KASHMIR BANK

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### ABSTRACT

*This study aims at exploring the perception held by the employees with regard to existing HRD climate in the banking sector. The total sample taken for the present study purpose is 130, out of which 80 are managers and 50 are clerks. The data were gathered by administering questionnaire. The results indicates that HRD mechanism such as training and development, performance appraisal system, potential appraisal and career development need a complete re-engineering process so that it will create the positive HRD climate in the sample study organization.*

### KEYWORDS

Banking sector, Employees' Perception, HRD Climate, OCTAPACE Culture, PAS.

### INTRODUCTION

The biggest challenge that any organization irrespective of its size, nature of ownership and control faces today is in regard to the procurement, utilization and development of the single largest resource at its disposal-the human resources. It is most critical factor in every organization. It cannot be substituted by machines of any degree of automation, robotization or remote control in the present and future centuries. It is recognized as an important asset possessed by the progressive organizations, is perhaps the most strategic and critical determinant of growth of any organization. It is especially true for service oriented organization like banks, where the improvements in service have to be made to meet the rising expectations of the society. Organizations including banks, exists for people, they are made of people and by the people and their effectiveness depends on the behavior and the performance of people constituting them.

The development of employee commitment through employee involvement and empowerment is one of the key objectives of human resource management (HRM) discourse. Over the past three decades and more a fast wind is blowing through the management literature which is driving out the traditional term "personnel management" and substituting a new phase "Human resource development"(HRD). The concept of HRD is getting very popular in various worldwide organizations, which are interesting in stabilizing, growing, renewing itself to become more effective and more dynamic and for playing leadership roles. There are some who call it "human resource development", "human relation development", "human resource depression". Some says HRD is an old wine in new bottles, Sharma (1988), some experts criticize to use the term human resource mainly on the ground that it treats human being as "resource" and not human beings(Blake,1995 and Roa,1999).

HRD is a system of developing in a continuous and planned way the competences of individual employees dyadic groups (superior-subordinate relationship), teams, inter teams and total organization to achieve organizationOal goals. HRD is certainly a very fascinating subject and there are several dimensions of human resources which have to be considered. It is based upon three pronged strategy as (a) people dimension in management (b) resource aspect and (c) development aspect; (i) people- the human aspect, where people are seen as having knowledge, skills, attitudes, potential for improving the existing capabilities and acquiring new capabilities for achievement of an individuals are considered goals;(ii) employees are "resources" aspect, where individuals are considered resources rather than problems. According to mufeed (1998), it seems odd that humans are considered as resource and placed at par with other resources like money, technology and material. Does it not lower\the dignity of human being when men/women are supposed, to be supreme and major of all existing things? (iii) and the "development" aspect, where there is an emphasis on the discovery and nurturing of their potential.

According to Mathur (1989), "HRD is the process of identifying and developing right people in succession at various organizational levels". The basic idea of HRD is to improve productivity, output and efficiency of the organization by utilizing people's minds as well as their hands (Veugh 1975). From the technological perspective, HRD can be seen as building knowledge base within the organization and dissemination of knowledge to the people at the right time. According to Basu (1987) "Better people" not merely better technology is the surest way to better society, is the most popular belief in Japan.

Based on the various definitions presented above one can infer that "HRD" is making people understand the pattern of expectations from their role in the organised setting so that they can perform efficiently and effectively in these roles. It also involves grooming the people in their roles to prepare them to shoulder higher responsibility in the future. HRD is a continuous process oriented effort, where the focus is upon the development of human units through the means of training education, information sharing, learning, relearning etc. and the ultimate objective of all HRD efforts is to equip people with skills for making them competent and to bring efficiency and effectiveness in the process level of the target population and make them realize and use their optimum potential.

### REVIEW OF LITERATURE

Past research studies on HRD reveals that much interest has been taken by scholars, HR. professionals, executives and managers to propagate the value of HRD and initiate HRD systems and mechanisms for the development of employees in many companies both in public sector and private sector including service industries like banks. Research studies also indicates that research has been done on various HRD mechanisms for managers such as performance appraisal system (PAS), career planning, organization development (OD) etc. However, beside the above, very less work has been done on HRD for workers. The past research study reveals that some of the Indian organization have initiated some developmental mechanisms for workers such as workers participation in management, quality circles, quality of work life, grievance mechanism, behavioral training, counseling etc. Both, public and private sector organization have done very commendable job in this area namely Larsen and Toubro (L & T), Bharat Heavy Electric Ltd (BHEL), Bharat Earth Movers Ltd (BEML), Bank of Baroda (BOB), State Bank of India (SBI) and Jammu and Kashmir Bank Ltd. (J&K Bank Ltd).

Among other mechanism of HRD for managers as stated above, much work has been done on PAS. Research indicates that the perception, feelings and attitudes of appraisers with respect to the effectiveness of overall appraisal system practices and supervisory behavior is an area that has attracted many researchers in the recent past, which is also the domain of interest in some of these studies have investigated appraiser and appraisal satisfaction related to various aspect of PAS, such as effectiveness of appraiser methods, sources of appraisals and raters error (Verma 1996, Fulk, Brief and Barr 1985, Mufeed 1998 and Robert 1995). There are other who have looked at appraiser and appraise perceptions towards the working of holistic approach of PAS (Parther 1974, Caroll and Schneir 1990 and Mehta 1996). Vigorous research has been done on user reactions to the effectiveness of PAS practices by Latham & Wexley (1981),Bernardin & Beatly (1984), Taylor, Fisher & Ilgen (1984), Steel (1985), Greenberg (1986), Ammons (1987) and others.

The Term 'Climate' is used to designate the quality of the internal environment which conditions in turn the quality of co-operation, the development of the individual, the extent of members dedication or commitment to organizational purpose, and the efficiency with the purpose becomes translated into results, climate is the atmosphere in which individuals help, judge, reward, constrain, and find out about each other. It influences morale and the attitudes of the individual towards his work and his environment. Schneider (1975) has prepared a working definition of climate: "Climate perceptions are psychologically meaningful molar descriptions that people can agree characterize a system practice and procedures. By its practices and procedures a system may create many

climates. People perceive climate because the molar perceptions function as frame of references for the attainment of some congruity between behavior and the system practices and procedures. However, if the climate is one which researches and supports individual's differences, people in the same system will not behave similarly. Further, because satisfaction is a personal evaluation of a system practices and procedures, people in the system tend to agree less on their satisfaction than on their description of the system's climate".

HRD climate is the human environment within which the members of an organization perform their functions. It facilitates the employees to acquire capabilities required to perform various functions associated within their present and future expected roles, develop general capabilities in individuals capacity and exploit their inner potential for organizational development. Various research studies have been conducted regarding the factors which determine and affect the HRD climate Chandra Shekhar (1993), Coelho (1993), Rao and Abraham (1991) have conducted studies on HRD climate and related areas in various organizations. According to Gilmer (1996), job satisfaction or dissatisfaction is the result of various attitude the person holds towards his/her job. Various studies have shown that job satisfaction has a significant correlation with HRD climate

Rao and Abraham (1986), argued that the following factors may be considered as contributing to HRD climate:

- Top management style and philosophy
- Personal policies
- HRD instruments and system
- Self-renewal mechanism
- Attitudes of personal and HRD staff
- Commitment of line managers

Rao and Abraham (1986) have classified the elements of HRD climate into three broad categories- general supportive climate, OCTAPACE culture and HRD mechanisms. The general supportive climate items deal with the importance given to human resources development is general by the top management and the line managers. The OCTAPACE culture items deal with the extent to which openness, confrontation, trust, autonomy, proactivity, authenticity, collaboration and experimentation are valued and promoted in the organization. The items dealing with HRD mechanisms measures the extent to which HRD mechanisms are implemented seriously

### HRD MECHANISMS FOR MANAGERS

Successful implementation of HRD involves an integrated look at HRD and effort to use as many HRD mechanisms as possible. HRD has largely contributed to the growth and profitability of organizations. The leading organizations of India who had introduced HRD mechanisms with high favorable HRD climate prevalent in them. Such as Larsen and Toubro Ltd (L & T), Bharat Earth Movers Ltd (BEML), Bharat Heavy Electric Ltd. (BHEL), Bank of Baroda (BOB), Crompton Greaves Ltd. (CGL), Jyoti Ltd, Indian Oil Corporation (IOC). L&T Contribution Group, Steel Authority of India Ltd (SAIL), State Bank of India (SBI), State Bank of Patiala (SBP), Sundaram Fasteners Ltd. (SFL), TVS Ivengar & Sons and Voltas Limited. According to Rao and Pareek (1981) various HRD mechanisms has been introduced and initiated for managers in various organizations. However, the most prevalent HRD mechanism in the organizations are as follows:

- Performance Appraisal System
- Potential Appraisal
- Job enrichment
- Career planning
- Communications
- Job rotation
- Reward system
- Organization development and etc.

### HRD MECHANISMS FOR WORKERS

Researchers have suggested that, the focus, direction, content and mechanism for HRD have to be different for workers than for managerial staff. This is because of the job requirement, existing level of knowledge and competence, number of target groups to be covered etc. The mechanisms of HRD for managerial staff cannot be replicated for workers. Following mechanisms have been tried by Indian organization for workers development with considerable success

- Training
- Quality of work life
- Counseling
- Workers participation
- Grievance mechanism
- Quality circles

### NEED FOR PRESENT RESEARCH

Research studies on HRD practices in Indian organizations indicate that only few organizations are satisfied with the existing HRD climate and dissatisfaction is greater enough. Research has also indicated that quite often HRD practices are ill- designed in most of the organizations. Many managers view HRD intervention occupy too much of productive time without adequate rewards and development. Keeping this in view, an attempt has been made to study the perception of employees towards HRD climate in banks with the special reference to Jammu and Kashmir Bank Ltd.

### STATEMENT OF THE PROBLEM

To understand the employees perception towards HRD climate in the Jammu and Kashmir Bank Ltd.

### RESEARCH OBJECTIVES

The present study was taken with the following objectives:

- To enquire how well the human resource development practices in general and the HRD mechanisms in particular are working and taken care in the Jammu and Kashmir Bank Ltd.
- To critically evaluate the perceptions held by the managers with regard to existing HRD climate in sample study organization and
- To critically evaluate the perceptions held by the clerks with regard to existing HRD climate in sample study organization.

### HYPOTHESIS

Employers show positive perception with regard to existing HRD climate in sample study organization.

### DEPENDENT VARIABLE

As for the measures of dependent variable-Perception of employees, was selected as an independent variable.

### INDEPENDENT VARIABLE

On the basis of importance & relevance of the study of HRD Mechanisms like training and development, performance appraisal, recruitment and selection, potential appraisal and promotion were taken as independent variables.

## METHODOLOGY

The present study made use of certain research so that above mentioned objectives are properly addressed to and thereby generate an appropriate proposition and identify major aspects that contribute towards the satisfaction with the prevalent HRD practices and climate of the sample study organization. The total sample for the present study purpose is 130, out of which 50 were clerks and 80 were managers. Out of 50 clerks, 30 were clerks with experience less than 15 years and 20 were clerks experience more than 15 years. Out of 80 managers, 50 were scale I managers and 30 were scale III managers.

In order to elicit the required information from the managers and clerks of the sample study organization regarding their overall satisfaction with the existing HRD climate in their respective organization was collected by framing a systematic and pre-tested questionnaire. The said questionnaire had dockets with regard to the different but vital dimensions, of the present study as perceived by the concerned respondents viz; managers and clerks. The questionnaire was modified and developed in the bases of certain studies somewhat of similar nature and has three section. Section (A) is about different variables associated with the effectiveness of HRD mechanism, section (B) about suggestions/observations that go towards improving the existing HRD climate in the J & K Bank and Section (C) seeks personal information about employee like age (year), level of pay scale grades, years of experience etc. which was purely for analytical purposes. Moreover, an appropriate questionnaire was developed and administered by XLRI Jamshedpur, on HRD climate survey, was used for the study purpose in order to study the present status of HRD climate in the sample study organization. The 5-pointlikert type technique was administered to assess to how effectively the individual components of the selected HRD systems are operating. Therefore, the respondents were asked to respond to each item on a particular issue under study. Employees response categories consisted of; not at all true=5, rarely true=4, sometimes true=3, mostly true=2 and always true= 1.

## RESULT AND DISCUSSION

In order to ascertain the extent to which managers and clerks are cognizant with the said research objectives of the present study, the respondents were provided with the well-structured questionnaire based on 38 statements. The questionnaire had three sections. Section (A) is about different variables associated with the effectiveness of HRD mechanism, Section (B) about suggestions/organization that goes towards improving the existing HRD climate in the Jammu and Kashmir Bank Limited and Section (C) seeks personal information about employee, like age (year), level of pay scale, grades, years of experience etc., which was purely for analytical purposes. The questions in the questionnaire had five responses, the correct one of which was to be ticked. To collect data, the respondents were asked to respond to each variables as used in the questionnaire on the basis of 5-point liker scale viz : (a)Not at all true= 5,(b) Rarely true = 4,(C) Sometime true =3,(d) Mostly true=2 and (e) always true = 1

Table 1.1 and 1.2 presents the mean scores, standard deviations (SD) and percentage of mean scores of variables used in present study which determine the managerial and clerical perception towards the overall HRD climate in the J & K Bank Ltd.

The overall survey results of Table 1.1 indicates that the mean values and percentage of mean score range between 1.68 (33.5%) and 3.76 (75.2%) in case of clerks. The table 1.2 reveals that the mean values and percentage of mean score range between 1.92 (38.4%) and 3.92 (78.4%) in case of managers of the organization under study. It is imperative to note that higher mean value or higher percentage of mean score linked across the HRD variables indicate that HRD climate is perceived to be superior and effective and the lower values or lower percentage of mean scores across managers and clerical staff have poor opinion on the effectiveness of HRD climate. In Table 1.1 there was a stability but inconsistency in the uniformity among clerks SD (0.97 against 1.53) and in Table 1.2 almost same SD (0.68 against 1.28) among managers.

**TABLE 1.1: PERCEPTIONS OF CLERKS TOWARDS OVERALL HRD CLIMATE IN JAMMU AND KASHMIR BANK LTD**

Statements	Mean score(X) (N=50)	SD(Standard deviation)	% Of mean score
1	3.26	1.06	65.2
2	2.58	1.19	51.6
3	2.56	0.90	51.2
4	2.62	1.21	51.4
5	3.08	1.22	61.6
6	2.86	1.10	57.2
7	2.86	1.26	57.2
8	2.76	1.28	55.2
9	1.7	0.88	34.0
10	2.92	1.19	58.4
11	2.44	0.95	48.8
12	2.4	1.03	48.0
13	2.88	1.09	57.6
14	2.5	0.95	50.0
15	3.76	1.23	75.2
16	2.66	1.17	53.2
17	2.14	0.96	42.8
18	2.82	1.16	56.0
19	2.86	0.90	57.2
20	2.92	1.20	58.4
21	3.22	1.11	64.4
22	3.52	1.01	70.4
23	2.82	1.20	56.4
24	1.84	0.95	36.8
25	2.9	1.18	58.0
26	2.76	1.15	55.2
27	1.68	0.68	33.6
28	2.46	1.07	49.2
29	2.66	1.08	53.2
30	3.16	1.14	63.2
31	3.2	1.16	64.0
32	2.24	0.79	44.8
33	1.7	0.86	34.0
34	3.24	0.95	64.8
35	3.56	1.19	71.2
36	2.6	1.16	52.0
37	2.87	1.03	57.2
38	1.98	0.86	39.6
Total	2.70	0.19	54.0

**NOTES**

1. Scoring scale: Not at all true= 5, Rarely true = 4, Sometime true =3, Mostly true=2 and always true = 1.
2. Higher mean scores indicates to more favorable perception towards overall HRD climate and lower mean value indicate vice versa.
3. Includes clerks of different experiences.
4. Number of respondents 50.
5. The details of statement 1-38 are clear in Questionnaire.

**TABLE 1.2 PERCEPTIONS OF MANAGERS TOWARDS OVERALL HRD CLIMATE IN JAMMU AND KASHMIR BANK LTD**

Statements	Mean score (X) (N=80)	SD (Standard deviation)	% of mean score
1	3.92	1.24	78.4
2	3.11	1.53	62.2
3	3.35	1.38	67.0
4	3.00	1.47	60.0
5	3.6	1.28	72.0
6	3.32	1.30	66.4
7	3.03	1.37	60.6
8	2.72	1.27	54.4
9	2.01	1.13	40.2
10	2.93	1.28	58.6
11	3.38	1.28	67.6
12	2.82	1.31	56.4
13	3.15	1.23	63.0
14	3.18	1.33	63.6
15	3.76	1.21	76.2
16	3.13	1.20	62.6
17	2.76	1.39	55.2
18	3.01	1.20	60.2
19	3.53	1.34	70.6
20	3.5	1.35	70.0
21	3.36	1.34	67.2
22	2.6	1.41	52.0
23	2.56	1.26	51.2
24	1.92	1.31	38.4
25	3.18	1.48	63.6
26	2.95	1.34	59.0
27	1.98	0.97	39.6
28	2.87	1.21	57.4
29	2.93	1.22	58.6
30	3.55	1.33	71.0
31	3.62	1.08	72.4
32	2.5	1.16	50.0
33	2.45	1.38	49.0
34	2.6	1.17	52.0
35	3.43	1.22	68.6
36	3.37	1.29	67.4
37	2.17	1.26	63.4
38	2.38	1.28	47.6
Total	3.02	0.10	60.4

**NOTES**

1. Scoring scale: Not at all true= 5, Rarely true = 4, Sometime true =3, Mostly true=2 and Always true = 1.
2. Higher mean scores indicates to more favorable perception towards overall HRD climate and lower mean value indicate vice versa
3. Includes managers of difference scales.
4. Number of respondents 80.
5. The details of statement 1-38 are clear in Questionnaire.

**FINDINGS/CONCLUSION**

The main finding of this research supports that HRD climate level in the J & K Bank limited has been found to be reasonably good with respect to managerial staff's belief in HRD climate having 3.02 (60.4%) mean score on this dimension. However, comparing the same with the responses and interviews held with clerks, it appears there belief towards HRD climate is less with mean score 2.7 (54%).

The present piece of work on HRD climate reveals that the mean values across the HRD variables among managers ranges between 1.92 (38.4%) and 3.92 (78.4%) while as the mean value across the clerks is 1.68 (33.5%) and 3.76 (75.2%). Thus, in other words higher mean score indicate to more favorable perception about the effectiveness of HRD system practices and lower mean values indicate the vice versa. It is evident from the above findings that managers are more satisfied with the existing HRD practices than the clerks.

**SUGGESTIONS AND POLICY IMPLICATION FOR MANAGEMENT PRACTICES**

Based on the above observations, it is suggested that the top management of J & K Bank Limited may advance the existing policies in enhancing the physical, mental and emotional potentialities and capabilities of individuals for creating and maintaining a productive HRD climate. The existing ills of J & K Bank Limited may be attributed to the above mentioned factors. Therefore, their need to be taken into account and their consequent resolution. The real challenge before sample study organization is to innovate continuously, teach employee to link strategically, recognize patterns, and anticipate problems and to handle them.



**LIMITATIONS OF THE CURRENT RESEARCH AND DIRECTIONS FOR FUTURE RESEARCH IN HRD CLIMATE**

The scope of this research was confined to Jammu & Kashmir Ltd to know the employees satisfaction towards the existing HRD climate. Hence the state public sector and private sector organization were excluded from the scope of this research. The reason for the said exclusion is due to the fact that no other organizations other than the selected one in the state of Jammu & Kashmir do follow the HRD practices seriously. Due to paucity of time and lack of other resources, no other private or public sector from any other state was taken for the study purposes. Therefore, future research is required which would explore the comparative evaluation of managers and staff employees perception towards the satisfaction with the HRD practices in public and private sector organization.

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**POVERTY REDUCTION: A PREDICATE OF HUMAN CAPACITY DEVELOPMENT IN NIGERIA****ONYEAGHALA, OBIOMA, H.****SR. LECTURER****DEPARTMENT OF BUSINESS ADMINISTRATION****FEDERAL UNIVERSITY****WUKARI****KAPPE, MAMMAN, P.****SR. LECTURER****DEPARTMENT OF BUSINESS ADMINISTRATION****FEDERAL UNIVERSITY****WUKARI****DIBAL, HYELADI STANLEY****GRADUATE ASSISTANT****DEPARTMENT OF BUSINESS ADMINISTRATION****FEDERAL UNIVERSITY****WUKARI****ABSTRACT**

*The Millennium Development Goals (MDGs) is the response to the development challenges of all nations. It is the United Nations plan for the prosperity and wellbeing of individuals and groups all over the globe, their welfare, health, empowerment, education, political power and physical security. This paper discusses human capital development as a strategic process that offers immense benefit for poverty reduction. The variables impacted in this study are; human capacity development as the independent variable and poverty reduction as the dependent variable. The study was carried out by the review of literature. It presents a critical analysis of the options and techniques that needed to be embraced to develop human capital as a culture and to effectively reduce poverty. It posits that the future of Nigerians, especially the youths, would be bleak if the issue of human capacity development is not adequately addressed. As a modest contribution to achieving the Millennium Development Goals through a provision of capacity development, it concludes by emphasizing the need for repositioning the strategic people resource through training and development on a continuous basis to zero the bottom-line:- reducing poverty. It recommends that if human capacity is continuously developed and properly harnessed, value will be added to human capital, empowering people and thus reducing the incidence of poverty.*

**KEYWORDS**

Human Capacity, Absolute Poverty, Relative Poverty, Subjective Poverty, Stimulus-Behaviour-Model.

**INTRODUCTION**

igeria is the most populous black nation in the world with a population size of about one hundred and forty million people (www.population.gov.ng). Nigeria is blessed with stupendous natural and human resources, and is one of the beneficiaries of the Millennium Development Goals. Yet the incidence of poverty is high in Nigeria and the welfare of the people which is of paramount importance in realizing the Millennium Development Goals is in question. According to Ndoko (2007), the percentage of Nigerians living under \$1, a day from 1984-2003 was 70%. 54% of Nigerians were living in absolute poverty in 2004 and this figure is projected to increase to 60.9% in 2013 (Kale, 2010). Poverty reduction is one of the most difficult challenges facing Nigeria and its people, and the greatest obstacle to pursuit of sustainable socio economic growth (National Planning Commission, 2005). Lack of human capacity in Nigeria has been identified as one of the major processors of poverty- an obstacle to prosperity.

The Nigeria government seems to have formulated lofty policies and made tremendous efforts to reduce the incidence of poverty in the past, but this effort seems not to have yielded positively in providing the necessary capacity.

Lack of human capacity seems to exacerbated joblessness, poverty, and economic dependence, inability to provide the basic needs of life for self and family, lack of access to land and credit, and inability to save or own assets and reduction in employee productivity.

Too often we tend to overlook the main goals of life which is to ensure survival, to enable everyone realize his full potential for well-being, and value the things that are important.

In Nigeria, there is absolute pursuits of wealth and growth, undermining better nutrition and health care, security against crime and physical violence, better working conditions, access to knowledge and information, closeness of family life and community life, longevity and decent standard of living. There is weakness in our social indicators; access to drugs, physicians, food, good drinking water and others. We undermine investment in human capacity building which is one of the agents for poverty reduction; this tends to make poverty therefore pandemic in Nigeria.

Inadequate or better to say, lack of human capacity has compounded the problems in the productive sector. Drucker (1981) confirms this when he said "no developing country except Brazil has market potential today for integrated industry to provide even the minimum employment needed and that very few of them have enough of the scarcest resources.

Nigeria seems to lack managerial, entrepreneurial and technical experts to build, organize and run integrated industries of the needed scale". This startling paradox has therefore threatened Nigerian's ability to meet one of the Millennium Development Goals of poverty reduction.

**THEORETICAL AND CONCEPTUAL FRAMEWORK**

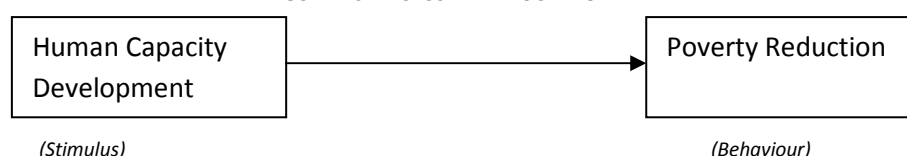
The theoretical frame work of this study is rooted on the operant conditioning theory advanced by Skinner, Nord, Luthans and White (Pfeffer 1982) in Jaja and Zeb-Obipi(1999). According to these theorists, behavior is a function of its consequences. Operant conditioning theory focused on learned, reinforced nature of pathological behaviors as a treatment modality on changing undesired work behavior. Substantial evidence in literature of operant conditioning reveals that behavior that is desired can be achieved by doing something to provide a reward or in taking away some aversive or noxious stimulus (Pfeffer 1982) in Jaja and Zeb-Obipi(1999). Pfeffer ibid, defines rein forcers as something that when administered after the behavior, increases its subsequent behavior or likelihood of occurrence. In operant conditioning, stimulus serves as a cue to emit the behavior, i.e. behavior is a function of stimulus. Hence the Stimulus- Behaviour-Model.

The Stimulus- Behavior- Model can be explained using the formula:

$B = F(S) \dots \dots \dots \text{Equation (I)}$

Where; Behavior= B, Function= F, and Stimulus= S,

FIGURE I: STIMULUS-BEHAVIOUR MODEL



Source: Researchers' Presentation, 2013.

The Stimulus-Behavior Model in equation 1 and figure 1 shows the relationship between human capacity development (stimulus), and poverty reduction (behavior). This work is therefore in line with the operant conditioning theory which proposes that behavior is a function of its consequences.

#### POVERTY

Poverty defies precise definition due to its multi-dimensional nature, Dike (2009) affirms this when he argued that "poverty has narrow and broad definition, partly because it is physical matter, and partly because poverty is relative". He asserted further that it is physical because one can note its effects on those afflicted by it, and is relative because a poor person in one country may not be perceived as such in another country.

According to World Bank, rural poverty report, (2001), poverty is a living condition in which an entity is faced with malnutrition, illiteracy, low life expectancy, insecurity, powerlessness and low self esteem. It implies economic, social, political, cultural and environmental deprivation. The Copenhagen declaration on poverty (1995), argued that poverty has various dimensions and manifestation, including lack of income and productive resources sufficient enough to ensure sustainable livelihood, hunger and malnutrition, ill-health, limited or lack of basic service, increased, mobility and mortality from illness, homelessness and inadequate housing, unsafe environment, social discrimination and exclusion. Poverty is explained to mean "more than being impoverished and more than lacking financial means". It is an "overall condition of inadequacy, lack of security and destitution and efficiency of economic, political and social resources (www.journalofpoverty.org/jppurp/joppierp.htm).

Poverty is characterized by lack of participation in decision making in civil, social and cultural life. It is also a condition in which an individual or a group suffers from one form of deprivation or the other. These include, low income, lack of basic necessities of life such as good-water, clothing, food, good health and shelter. Denial of the right to love and social insecurity, lack of access to education and communication, discrimination based on whatever social status; exposure to hazardous environments; denial of the expression of basic human rights and etc. Yet Odey (2008), viewed poverty as an all inclusive hydra headed problematic of unacceptable human deprivation of general welfare, denial of opportunities, choice and expectation.

Nweje and Ojowu (2002) defined three categories of poverty as; absolute poverty, relative poverty; and subjective poverty. These scholars argued that families or groups are said to be absolutely poor when "they have inadequate resources particularly real income to obtain the types of diets needed, to enjoy some fixed minimum standard of living determined by a given society, which society considers as some essential amount of goods and services. These essential goods and services include water, food, clothing, housing, healthcare, sanitation and education.

Relative poverty on the other hand implies a situation in which an individual or household has goods and services which are lower than those of other persons or households in the society. On the other hand, subjective poverty is expressed in a range on nonmaterial and intangible qualities based on respondents feeling of their standard of living. From the foregoing, and looking at the incidence of poverty in Nigeria, we can quickly conclude that absolute poverty is prevalent in Nigeria.

Olusegun Obasanjo, former Nigerian President, in keeping with his campaign promises, of poverty alleviation, announced a poverty alleviation programme (PAP). The scheme was designed to offer micro-credit to semi-skilled and unskilled Nigerian as part of government plans to reduce poverty. This programme later transformed into National Poverty eradication programme (NAPP). The Obasanjo government initiated other economic rejuvenation programmes such as privatization and encouragement of foreign investments in the country which will open up employment opportunities thus, help in poverty reduction, and the universal basic education, which was initiated to improve the number of enrollment of pupils in the primary schools with the believe that education and poverty has correlation. The administration of late president Umaru Musa Yar'adua set the target of making Nigeria to become one of the top 20 economics in the World by the year 2020. He had a well articulated programme termed "Seven point agenda". The seven point agenda was meant to cause development by pursuing energy emergency, agriculture and food, security of life and property, human capital development, compulsory education for children and transport revolution. The regime also reiterated its desire to run a government with the rule of law and due process as its guiding principles.

All the economic transformation and poverty reduction programmes initiated by Obasanjo and Yar'adua never yielded expected results, as most Nigerians are still trapped in the quagmire of poverty (Wuam and Sunday, 2001).

According to Aboyade (nd), the inability of orthodox development economics to help in solving the problems of poverty in the underdeveloped countries may be traced to a mistaken diagnosis of the problems of underdevelopment. In low income societies investment in human capital is discouraged, because a poor country is characterized by very little demand for such investment.

#### HUMAN CAPACITY DEVELOPMENT

The human resource is the people that constitute the workforce. It is the essential element and the building blocks that give life and energy to an organization, converting other resources into productive use for the benefit of man. This veritable resource cannot of course carry out the transformation or conversion process to achieve quality product and quality delivery, and add more value to the system without its proper training and development. This is the issue of capacity building- a central process in achieving effective performance (Inyang, 2001).

Human capacity development is the long-term investment in the workforce or the human capital in the organization, in the form of training and development to enhance the creative potentials of employees. It is a re-engineering process that is aimed at achieving corporate excellence.

UNDPs human development report (1998), conceptualized human development as a process of expanding human choice by enabling people to enjoy long, healthy and creative lives.

In this context, the human development report encourages countries to evolve a process of expanding choices and developing capabilities of the people in all economic, social and cultural activities for a wealthier, healthier, more knowledge and meaningful life (Akawa in Ogiji 2007).

Obikaonu (2002) views human capacity development as a way to fulfill the potentials of people by enlarging their capabilities and this necessarily implies the empowerment of people, and enabling them to participate actively in their own development. It is also a means through which the skills, knowledge, productivity and inventiveness of people are enhanced.

Herbison in Nwachukwu (2007) sees human capital development as the process of increasing the knowledge, the skills and the capacity of all the people in the society. In economic terms, he states "it is the accumulation of human capital and its effective investment in the development of an economy. In other words, human capacity development deals with the activities undertaken to prepare people to perform duties as they assume positions of importance in the society for the rapid economic development that has taken place in the advanced countries than any other factors. Nwachukwu (2007) emphasized that the importance of quality human capacity in the social, political and economic development of any nation can hardly be overstated. "No nation is known to have attained sustained high level of economic growth and development without enough supply of qualified manpower", Nwachukwu maintained. According to him, of all the factors that unlock the forces of economic growth and development, human capital is the most vital, for without it, all the other factors have to wait. This may have informed Kusnet (1999) to say that "the major capital stock of an industrially advanced country is not its physical equipment; it is the body of knowledge amassed from tested findings and discoveries of empirical science and the capacity and training of its population to use their knowledge. Ngusha (2010) says economic practitioners and policy makers have the onerous task to restructure and redirect material resources, human mentality and psyche towards set goals and objectives.

The essence of any development program is to enhance the welfare of workers by maximizing their skills and the quality and quantity of their employment opportunity and, by so doing, add to the country's strength. This is to say that any development programme is aimed at human capital development and utilization. Thus, the manpower programme of any nation is intricately interwoven with her economic and social development. National Population Commission (2004) see human development agenda, as the contract between the individual and his government, which recognize his rights and responsibilities and promises to deliver to him the basic necessities for a decent human existence. As Adelman (1966) puts it, "when machines and equipment have been put together to facilitate a process, the productive capacity is enforceable" when there is shortage of personnel to execute plans. Adelman *ibid*, insist that there is shortage of technical staff to do critical maintenance and repair works. He says that in private firms, the demand for engineering and technical staff far exceeds the supply and that most delays in construction are often linked to inadequate executive capacity. He cited example that in projects and the construction industry generally, engineers, skilled artisans and technicians are required, but the number of indigenous skills available in these activities is very limited. In the construction of roads and bridges, Nigerians dominate the lower class of labour like artisans grades of manpower, while expatriates dominate the engineering corps and form a substantial proportion of the technical officers. Hence, most people would agree with Harbison when he stated that a country which is unable to develop its human resources, cannot build anything else whether it to be a modern political system, a sense of national unity, or a prosperous economy. According to him where there is disagreement is where the emphasis should be placed, widespread literacy, high-level manpower, or middle level manpower or the appropriate mix. It is therefore argued that the supply of high level manpower, usually leads to dramatic qualitative change in the optimal pattern of production (Adelman 1966). Yet, another reason for giving priority to high-level manpower development is the fact that its development prevents mass underemployment of the lower classes of labour. It is generally agreed therefore that manpower training and development is a sine qua-non for economic development of any nation.

United Nations Report on the World social situation (1997) asserts that there are three component indicators of an individuals or population human capital:

1. Innate ability: -this is the capacity developed from birth or nature.
2. Qualification and knowledge acquired through formal education.
3. Competence and expertise acquired through training

#### ROLE OF EDUCATION

Education is fundamental to enhancing the quality of human life and ensuring social and economic progress. It is the key to creating, adapting and spreading knowledge (World Bank, World Development Report 1998). Education is a basic objective of development; it is essential for satisfying and rewarding life, and fundamental to the broader notion of expanded human capabilities that lie at the heart of the meaning of development. Education plays a key role in the ability of a developing country to absorb modern technology and develop the capacity for self sustaining growth and development (Toderro and Smith 2006). Education is a key factor for economic empowerment and development, this follows the fact that countries with large literate population had found it easier and quicker to industrialize and develop than countries with large illiterate population. This is exemplified in Table 1 and figure 1 (relationship between level of education and poverty).

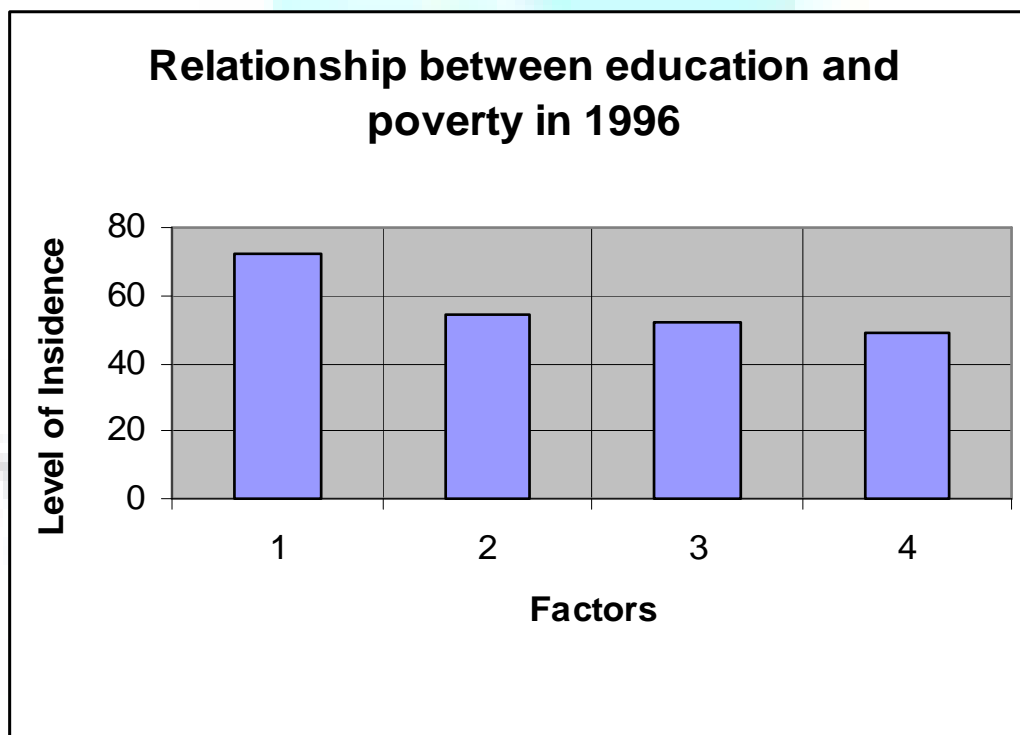
**TABLE I: RELATIONSHIP BETWEEN LEVEL OF EDUCATION AND POVERTY IN NIGERIA.**

Factor	1980	1985	1992	1996
None	30.2	51.3	46.4	72.6
Primary	21.3	40.6	43.3	54.4
Secondary	7.6	27.2	30.3	52.0
Post Secondary	24.3	24.4	25.8	49.2

Source: National Population Commission 2004, with modification.

In table I above, the incidence of poverty in Nigeria declined with increase in level of education over the years.

**FIGURE II: RELATIONSHIP BETWEEN LEVEL OF EDUCATION AND POVERTY IN 1996**



Source: Reserachers' Presentation, 2013.

#### Key:

1. Represents No Education
2. Represents Primary Education
3. Represents Secondary Education
3. Represents Post Secondary Education

Level of incidence is in percentages



### 1. COMPETENCE AND EXPERTISE ACQUIRED THROUGH TRAINING

Employee training is at the heart of employee utilization commitment, motivation and growth. Many employees have failed in organizations because their need in training was not identified and provided for as an indispensable part of management.

Training is defined as an organizational effort aimed at helping an employee to acquire basic skills required for the efficient execution of the activities or functions for which he is hired (Nwachukwu, 2007). A skill on the other hand is the ability to do something well (Oxford Advanced learners Dictionary). Skills are factors of production in a similar way to physical capital. Skills are acquired through training and can be attained and used at varying levels of competence, skills can relate to specific tasks or circumstances or be generic to a range of job situation. Generic skills such as literacy and numeracy are particularly important as precursors to the acquisition of other skills, through participation in further learning. Other less tangible generic skills, such as confidence and self presentation are sometimes grouped as employment skills. A perfect measure of an individual's human capacity would capture each skill acquired by an individual and show level of competence within that skill. Skill can be measured in three inter-related ways according to Leitch (2005).

1. Level of competence (e.g relative ability)
2. Achievement of competence (e.g a qualification)
3. How competence is used (e.g occupation)

### CONDITIONS REQUIRING TRAINING

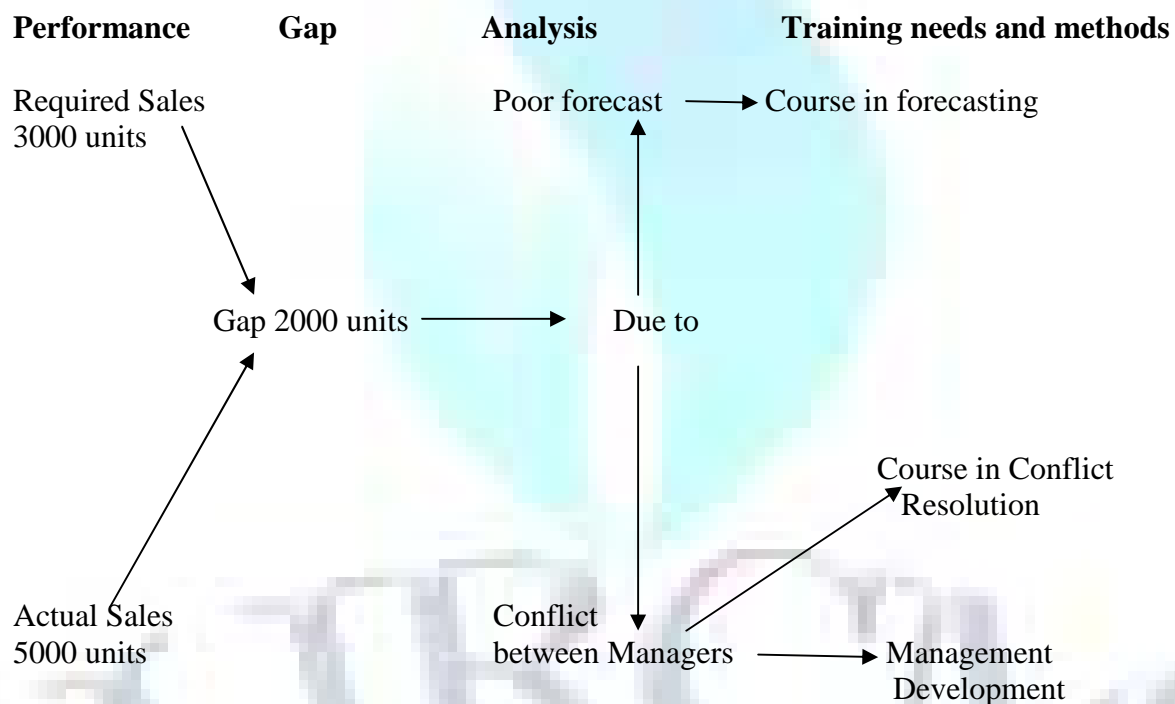
There are certain conditions which manifest in the organization and therefore necessitate training:

- 1) Lack of necessary skills (inefficiency or incompetence)
- 2) Lack of interest in one's job
- 3) Negative attitude to work
- 4) Low productivity
- 5) Tardiness
- 6) Excessive complaints
- 7) High rejects or low quality output
- 8) High incidence of accidents
- 9) Insubordination

### HOW TO IDENTIFY TRAINING NEEDS

Before any training programme is undertaken, the need for training has to be identified. The need for training increases as result of new technology, new products, variety of new customer and other factors such as a competitive strategy of competitors (Nwachukwu, 2007). To mount training, it requires systematic analysis. In this instance, problems encountered by different employees are identified, see figure II below.

FIGURE III: ANALYSIS OF TRAINING NEEDS



Source: Weihrich and Koontz (2005)

According to Gilbert (1967), the best common sense approach to identify areas of training is to use the formula:

$$D = M - I$$

Where

D= inefficiency in the employee

M= complete list of behaviour necessary for the job mastering

I= all knowledge of behaviour necessary for the job which the employee already possess.

By identifying the behaviour or traits required to perform a job and finding out what employee lacks, training can then be guaranteed in areas of deficiency.

### METHODS AND TECHNIQUES OF TRAINING

Jenkins and Stanley (1950) in Jaja and Zeb-Obipi(1999) observed that the method of reinforcement administered will depend on the characteristic of behavior that is being conditioned. Therefore training methods and techniques will depend largely on the training needs and conditions of the trainee. The most popular training methods in use according to Nwachukwu (2007) and Inyang (2008) are:

- (1) **On-the job Training:** Here the trainee is given detailed orientation and taught how to approach task in the unit or department he is posted.
- (2) **Off-the Job training:** This techniques is often used to expose employees to new methods or ideas or new skills. After such candidate is trained in a stimulated work place, they are then handed over to the operating supervisors in the organization for formal on the job training.



- (3) **Classroom training methods (conventional methods):** These methods are most useful when philosophy, concepts, attitude, theories and problem solving abilities must be learned. There are several specific techniques commonly used for training in the classroom settings, lecture, conferences, case study, role-playing and background instruction.
- (4) **Apprenticeship:** This method is a way of developing skills for craftsmen where the trainees are placed under a supervisor for a specific number of years, at the end of which they are evaluated and placed.
- (5) **Coaching:** In this method, employees are attached to a supervisor who coaches them on specific concepts.
- (6) **Assisting:** This method develop subordinates aspiring for management positions. The employee is assigned to a higher officer where he is exposed to different management functions.
- (7) **Special assignment:** Here management trainees are often assigned to special projects such as membership of task force, team or committee.
- (8) **Demonstration and example:** This involves describing and displaying something through the use of examples or experiments. It involves step by step explanation by a trainer or a supervisor to a learner of why and how a job is done.
- (9) **Simulation:** This is a situation or event that takes place in the appearance of form of reality, but is in fact, an imitation of reality. In reference to training, a simulation is any kind of equipment or technique that duplicates as nearly as possible the actual conditions encountered in the real work situation.
- (10) **Job rotation:** This training method applies to changing an individual from one job to another either for short or long period of training purposes. It widens the trainees experience within the work environment.
- (11) **Vestibule:** This technique comprises a school or workshop usually set-up in a company or in an industrial plant to introduce new workers into the work setting by means of a few weeks of practice for a specific job. An attempt is made here to try to duplicate the actual material, equipment and condition that will later be encountered in the real work situation.
- (12) **Tuition and programme:** This is a form of training under which employees are reimbursed for certain expenses incurred while attending outside academic programmes, usually on a tertiary level on their own times.
- (13) **Special training programmes:** Here management personnel are allowed to attend well organized seminars, workshops or conferences where scholarly papers are presented by experts and discussion are centered on them. The programme may be conducted by tertiary institutions, middle or upper management personnel in particular to become better qualified in their present job for promotion. Government training agencies like the administrative staff College of Nigeria (ASCON), Centre for Management Development (CMD), Industrial Training Fund (ITF) and other professional institutes are in the vanguard of offering opportunities for employee as well as provide facilities for skill development through planned training programmes.

To encourage and provide skills development, the National University Commission (NUC) has directed tertiary institutions in Nigeria to establish entrepreneurship programmes in order to meet the new millennium development goals of poverty reduction and employment generation. The objectives of this programme are:

1. To enable students acquire skills and effectively set-up their own businesses.
2. To manage their own businesses successfully.
3. To gainfully employ others.

## MILLENNIUM DEVELOPMENT GOALS

An eight point agenda referred to as the Millennium Development Goals (MDGs) were declared by the United Nation on September 1990 and ratified by 189 nations, including Nigeria (Ngusha2010). The United Nations in its 8<sup>th</sup> plenary on September, 8, 2000 set the year 2015 as the target date for the attainment of the Millennium Development Goals (MDGs).

The eight Millennium Development Goals which forms a blue print agreed by all the worlds' countries and all the worlds leading development institutions are as follows: To eradicate extreme poverty and hunger, achieve universal primary education, promote gender equality and empower women, reduce child mortality, improve maternal health, combat HIV/AIDS, malaria and other diseases, ensuring environment sustainability and encourage a global partnership for development. MDGs serve as market of the most basic challenges ahead of world's poorest countries (Akinroye, 2000). Eradicating extreme poverty and hunger is regarded as the most important goals of human development and to achieve the objectives of the MDGs, developing nations try to harness their resources and directing them to productive uses. In Nigeria, the percentage of the population living under \$1, a day in 1980 was 27% (NEEDS, 2005) and this figure has risen sharply since then. The target of MDGs is to half the proportion of people who live on less than \$1 per day between 1990-2015, and who suffer from hunger. In line with this objective, the Obasanjo Administration in the year 2004 designed a home grown poverty reduction programme called the National Economic Empowerment and Development Strategy (NEEDS). NEEDS is a programme or planned action initiated by the Federal Government to address the challenges and ameliorate the endemic problem of poverty in Nigeria. The NEEDS and its State arm: - SEEDS collectively, are expected to create new jobs over the period, reduce poverty and lay the foundation for sustainable development (National Population Commission, 2004).

## FINDINGS

Findings from our literature review indicate that absolute poverty is pandemic and prevalent in Nigeria in the face of abundant natural and human resources. The study identified human capacity development as a critical transformation factor. Inyang,(2001), in support of this outcome said "as a veritable resource, man cannot carry out the transformation or conversion process to achieve quality product and quality delivery, or add more value to the system without proper training and development of the human factor". According to the United Nations (1997) the major indicators of an individual or population human resources acquired through formal education, and training, are strategic capacity development processes that can engender empowerment.

Nwachukwu (2007) and Kusnet (1999) identified the vital role played by human capital, while Nwachukwu emphasized the importance of quality human capacity in the social, political and economic development of any nation, noting that no nation is known to have attained sustained high level of economic growth and development without enough supply of qualified manpower, Kusnet says that "the major capital stock of an industrially advanced country is not its physical equipment; it is the body of knowledge amassed from tested findings and discoveries of empirical science and the capacity and training of its population to use their knowledge. Buttressing that same finding, Ngusha (2010) says economic practitioners and policy makers have the onerous task to restructure and redirect material resources, human mentality and psyche towards set goals and objectives. Other findings from literature review indicate that the problems of poverty in the underdeveloped countries may be traced to a mistaken diagnosis of the problems of underdevelopment. In consonance with this, Aboyade (nd) says "in low income society's investment in human capital is discouraged, because a poor country is characterized by very little demand for such investment".

## CONCLUSION

In the light of these findings, the following conclusions were drawn; the human resource is the essential element and the building blocks that give life and energy to any society. When the human capital is sustainably developed, it engenders empowerment which nevertheless will chart a course; enabling Nigerians meet one of the Millennium development goals of poverty reduction. This will help to build a better future for Nigerians and instill hope in them that the welfare of her citizens is of paramount importance.

## RECOMMENDATIONS

Based on the findings of the research, we proffer the following recommendations:

Poverty is an obstacle to prosperity and a pathological condition which necessitates management, one of the ways of managing this pathological state (poverty), is by positively reinforcing those afflicted through human capacity development. Therefore the Nigerian government should recognize the critical importance of developing high quality human capital in an increasing technology-driven world economy of today.

Since human capacity is the major capital stock of a country and of course the most potent resource available to man, if continuously developed; properly harnessed, energized, maintained and substantial, would empower her citizens, help achieve poverty reduction and add more value to the development of the society.

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## A STUDY ON LEADERSHIP STYLES OF SELECTED ENGINEERING UNITS LOCATED IN GIDC, VITTHAL UDYOGNAGAR, GUJARAT

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### ABSTRACT

*The researcher decided to do the research on the leadership styles used by the engineering units who manufactures on their own or do job work of machinery spare part and material handling equipments and accessories of Vitthal Udyognagar. The researcher also aims to study on the information about the leadership styles used for various business situations like – Personnel, Technical, Financial, Marketing and Production matters which are the most important for running the business unit smoothly. The sample for this study includes 20 engineering units using convenient sampling. Respondent from each company comprises of owners-managers located mainly in Vitthal Udyognagar. The researcher prepared a structured questionnaire for leadership styles.*

### KEYWORDS

Engineering Industry, Leadership Styles.

### INTRODUCTION

Indian engineering industry has witnessed an unprecedented growth in the past few years as a result of increased investment in infrastructure development and industrial production. The engineering sector is the largest sector among the industrial segments in India and provides direct and indirect employment to skilled and unskilled workers.

Through this research work, the researcher tries to determine the leadership styles of owners-managers of the engineering units of Vitthal Udyognagar. Leadership is interpersonal relationship between the leader-manager and the followers. The behavior exhibited by a leader during supervision of subordinates is known as leadership style. There are many leadership styles, but the researcher has used five leadership styles for the research study viz., Benevolent Autocrat, Strict Autocrat, Prior Consultation, Democratic Style and Delegation Style.

### OBJECTIVES

To investigate the study on the leadership styles of owners-managers of selected engineering units of Vitthal Udyognagar, the specific objectives pursued were to:

1. To study various leadership styles in selected engineering units of Vitthal Udyognagar.
2. To identify the leadership style dominantly used in various business situations.
3. To make recommendations for the improvement of selected engineering units on the basis of an analysis of leadership styles.

### METHODOLOGY

#### SAMPLE UNITS

The sample for this study includes 20 engineering units viz., Akshar Engineering, Akvim Industries, BC Instruments India Pvt. Limited, Delta Engineering Works, Ganesh Engineering Company, Gaurang Enterprise, Hi-Speed Turbo Drives Pvt. Limited, Ironbuild Systems Pvt. Limited, Micro Tools, OM Engineering Works, Oswal Machinery Limited, Precision Foundry & Engineering Company, Raj Engineering Works, S & L Engineering Company, Sajan Engineering Works, Sant Engineers, Shakti Crane & Machinery Pvt. Limited, Sony Engineers, Steel Engineering Company and Zenith Engineering Works using convenient sampling.

#### DATA COLLECTION

The present study is based mainly on primary data and supported by secondary data. The questionnaire is one of the most widely used survey data-collection techniques. It refers to all techniques of data collection in which individuals are asked to respond to the same set of questions in a predetermined order. The primary data were collected from the owners- managers of engineering units of Vitthal Udyognagar through structured schedule and questionnaire. The secondary data were collected from thesis, dissertation, magazines, periodicals, journals and newspapers and websites related to the engineering industry and subject matter.

#### HYPOTHESES

##### 1. PERSONNEL MATTERS

$H_0$ : There is no significant difference between mean score of leadership styles regarding personnel matters within various situations.

##### 2. MARKETING MATTERS

$H_0$ : There is no significant difference between mean score of leadership styles regarding marketing matters within various situations.

##### 3. FINANCIAL MATTERS

$H_0$ : There is no significant difference between mean score of leadership styles regarding financial matters within various situations.

##### 4. TECHNICAL MATTERS

$H_0$ : There is no significant difference between mean score of leadership styles regarding technical matters within various situations.

##### 5. PRODUCTION MATTERS

$H_0$ : There is no significant difference between mean score of leadership styles regarding production matters within various situations.

The difference between mean score of leadership styles is significant or not is test at 5% level of significance with the help of "F" test.

### ANALYSIS BASED ON LEADERSHIP STYLES

The owner-manager of the industrial unit engaged in the processing, planning, organizing and controlling appears in the leader's position. This research study determines the leadership style of sampled engineering units and to know whether the leadership styles of owners-managers vary with the type of the decision making situations based on different criteria like personnel, financial, marketing, production and technical activities.

For this respondents were interviewed with a well structured questionnaire. For this research work, the researcher used five leadership styles like Benevolent Autocrat, Strict Autocrat, Prior Consultation, Democratic style and Delegation style. The respondents were asked to put a tick mark (V) among one of the five styles.

### 1. PERSONNEL MATTERS

Personnel management is the planning, organizing, compensation, integration and maintenance of people for the purpose of contributing to organizational, individual and societal goals. It is concerned with promoting and stimulating competent work force to make their fullest contribution to the concern. The problems and grievances of people at work can be solved more effectively through rationale personnel policies.

#### LEADERSHIP STYLES OF OWNERS-MANAGERS USED IN PERSONNEL MATTERS

Situation	Leadership Styles					Total
	Benevolent Autocrat (I)	Strict Autocrat (II)	Prior Consultation (III)	Democratic Style (IV)	Delegation Style (V)	
Style used for taking decision Regarding to pay any compensation to workers	8 (40)	6 (30)	0 (0)	6 (30)	0 (0)	20 (100)
Style used for taking decision Regarding to take disciplinary action against employees	8 (40)	7 (35)	1 (5)	4 (20)	0 (0)	20 (100)
Style used for taking decisions regarding to assign a different job to workers	4 (20)	0 (0)	7 (35)	6 (30)	3 (15)	20 (100)
Style used for taking decision Regarding to promote the workers	8 (40)	2 (10)	3 (15)	6 (30)	1 (5)	20 (100)
Style used for taking decision Regarding to punish the workers	8 (40)	4 (20)	2 (10)	5 (25)	1 (5)	20 (100)
Style used for taking decision Regarding to remove the workers	6 (30)	6 (30)	3 (15)	5 (25)	0 (0)	20 (100)
<b>Average</b>	7 (35)	4 (21)	3 (13)	5 (27)	1 (4)	20 (100)

Source: Data collected from sampled engineering units of Vitthal Udyog Nagar.

**Note:** Figures in the brackets indicate the percentage to total respondents.

From the above it is observed that in case of taking decision regarding to pay any compensation to workers, 40% of the sample owners-managers have used style – I, 30% have used style – II and remaining 30% respondents adopted style – IV. Looking to the situation of taking decision regarding to take disciplinary action against employees, 40% respondents (owners-managers) have used style – I, 35% have used style – II, 5% have used style – III and remaining 20% have used style – IV. In situation of taking decisions regarding to assign a different job to workers, 20% of the sampled owners-managers were with the opinion of style – I, 35% respondents used style – III, 30% responses were of style – IV and rest 15% have used style – V. For another situation for taking decision regarding to promote the workers, the responses received from sampled owners-managers were 40% for style – I, 10% for style – II, 15% for style – III, 30% for style – IV and 5% for style – V.

### 2. MARKETING MATTERS

Owners-managers face a host of decisions in handling marketing tasks. These range from major decisions such as what product features to design into a new product, how many salespeople to hire, or how much to spend on advertising, to minor decisions such as the wording or color for new packaging. Thus marketing can help immensely in identifying new product or service ideas which can help in sustaining the firm's operations.

#### LEADERSHIP STYLES OF OWNERS-MANAGERS USED IN MARKETING MATTERS

Situation	Leadership Styles					Total
	Benevolent Autocrat (I)	Strict Autocrat (II)	Prior Consultation (III)	Democratic Style (IV)	Delegation Style (V)	
Style preferred for taking decision relating remuneration to sales personnel	7 (37)	3 (16)	3 (16)	6 (32)	0 (0)	19* (100)
Style used for taking decision relating to volume of sales	4 (21)	7 (37)	2 (11)	5 (26)	1 (5)	19* (100)
Style selected for taking decision relating to mode of selling (cash or credit)	3 (16)	9 (47)	2 (11)	4 (21)	1 (5)	19* (100)
Style used for taking decision relating to method of sales promotion	2 (11)	3 (16)	4 (21)	9 (47)	1 (5)	19* (100)
Style adopted to increase brand image of the company	1 (5)	5 (26)	6 (32)	5 (26)	2 (11)	19* (100)
Style preferred for taking decision to introduce a new product in the market	1 (5)	2 (11)	4 (21)	10 (53)	2 (11)	19* (100)
Style used to increase the customer of the company	5 (26)	2 (11)	3 (16)	6 (32)	3 (16)	19* (100)
Style adopted for taking decision regarding to the competitors of the company	8 (42)	3 (16)	2 (11)	4 (21)	2 (11)	19* (100)
<b>Average</b>	4 (20)	4 (22)	3 (17)	6 (32)	2 (8)	19* (100)

Source: Data collected from sampled engineering units of Vitthal Udyog Nagar.

**Note:** (1) Figures in the brackets indicate the percentage to total respondents.

(2) \*Marketing matters are not applicable to one of the company.

The above table reported the leadership styles of marketing matters. It is revealed that in case of taking decision relating remuneration to sales personnel, 37% of the sample owners-managers have used style – I, 16% have used style – II and style – III each respectively and remaining 32% respondents adopted style – IV. Taking another situation of decision relating to volume of sales, 21% of the respondents have used style – I, 37% have used style – II, 11% have used style – III,



26% adopt style – IV and remaining only 5% adopts style – V. In situation of taking decisions regarding to mode of selling (cash or credit), 16% of the sampled owners-managers adopted style – I, 47% respondents used style – II, 11% responded to style – III, 21% respondents gave their opinion to style - IV and rest 5% have used style – V. For another situation for taking decision relating to method of sales promotion, the response of the sampled owners-managers were 11% for style – I, 16% for style – II, 21% for style – III, 47% for style – IV and 5% for style – V. In case of situation to increase brand image of the company, 5% respondents responded to style – I, 26% to style – II, 32% to style – III, 26% to style – IV and 11% to style – V. In case of taking decision to introduce a new product in the market, 5% sample owners-managers have adopted style – I, 11% have adopted style – II, 21% of them adopted style – III, 53% adopted style – IV and remaining 11% adopted style - V.

### 3. FINANCIAL MATTERS

Financial management means planning, organizing, directing and controlling the financial activities such as procurement and utilization of funds of the enterprise. Financial decisions are related to the raising of finance from various resources which will depend upon decision on type of source, period of financing, cost of financing and the returns thereby. Owners-managers have to make decisions with regards to cash management. Cash is required for many purposes like payment of wages and salaries, payment of electricity and water bills, payment to creditors, meeting current liabilities, purchase of raw materials and machinery, etc.

#### LEADERSHIP STYLES OF OWNERS-MANAGERS USED IN FINANCIAL MATTERS

Situation	Leadership Styles					Total
	Benevolent Autocrat (I)	Strict Autocrat (II)	Prior Consultation (III)	Democratic Style (IV)	Delegation Style (V)	
Style preferred to get a private loan for the company	10 (53)	1 (5)	4 (21)	3 (16)	1 (5)	19* (100)
Style selected for taking decision regarding to purchase a new machine of the company	5 (26)	2 (11)	8 (42)	3 (16)	1 (5)	19* (100)
Style preferred to give wages to the labour of the company	8 (42)	1 (5)	7 (37)	3 (16)	0 (0)	19* (100)
Style adopted to provide a fair compensation to employees	4 (21)	4 (21)	3 (16)	7 (37)	1 (5)	19* (100)
Style used regarding to provide fringe benefits and services	6 (32)	3 (16)	5 (26)	4 (21)	1 (5)	19* (100)
Style used to take decisions relating to pays for the overtime work	7 (37)	2 (11)	4 (21)	4 (21)	2 (11)	19* (100)
Style used for taking decisions Regarding to any other financial matter	6 (32)	3 (16)	6 (32)	2 (11)	2 (11)	19* (100)
Average	7 (35)	2 (12)	5 (28)	4 (20)	1 (6)	19* (100)

Source: Data collected from sampled engineering units of Vitthal Udyog Nagar.

Note: (1) Figures in the brackets indicate the percentage to total respondents. (2) \*Financial matters are not applicable to one of the company.

From the above table, it is observed that the most commonly style used by the owners-managers is style – I (benevolent autocrat). In case of getting a private loan for the company, 53% of the sample owners-managers have used style – I, 5% have used style – II, 21% used style – III, 16% have used style – IV and remaining 5% respondents adopted style – V. Looking to the situation of taking decision regarding to purchase a new machine of the company, 26% respondents (owners-managers) have used style – I, 11% have used style – II, 42% have used style – III, 16% have used style – IV and remaining 5% have used style – V. In situation of taking decisions to give wages to the labour of the company, 42% of the sampled owners-managers were with the opinion of style – I, 5% respondents used style – II, 37% responses were of style – III and rest 16% have used style – IV. For another situation to provide a fair compensation to employees, the responses received from sampled owners-managers were 21% for style – I, 21% for style – II, 16% for style – III, 37% for style – IV and 5% for style – V. In case of situation regarding to provide fringe benefits and services, 32% respondents responded to style – I, 16% to style – II, 26% to style – III, 21% to style – IV and 5% to style – V. In case of taking decision relating to pays for the overtime work, 37% sample owners-managers have adopted style – I, 11% have adopted style – II, 21% of them adopted style – III, 21% adopted style – IV and rest 11% have used style - V. Lastly the leadership styles used by the sample owners-managers for taking decisions regarding to any other financial matter are 32% for style – I, 16% for style – II, 32% for style – III and 11% for style – IV and style – V each respectively.

### 4. TECHNICAL MATTERS

Owners-managers need access to machinery and equipment in the workplace (either continually or occasionally) for tasks such as operation, maintenance, repair, installation, service or cleaning. Owners-managers must provide employees with safe access that is suitable for the work they perform in, on and around machinery and equipment. Care should be taken for stable work platform suited to the nature of the work that allows for good posture relative to the work performed, sure footing, safe environment which is a basic requirement.



## LEADERSHIP STYLES OF OWNERS-MANAGERS USED IN TECHNICAL MATTERS

Situation	Leadership Styles					Total
	Benevolent Autocrat (I)	Strict Autocrat (II)	Prior Consultation (III)	Democratic Style (IV)	Delegation Style (V)	
Style used for taking decision relating to employ new subordinates to operate the machine of the company	8 (40)	4 (20)	4 (20)	4 (20)	0 (0)	20 (100)
Style used for taking decision relating to the change of operating procedures	5 (25)	11 (55)	6 (30)	7 (35)	1 (5)	20 (100)
Style preferred for taking decision regarding to purchase new equipment	9 (45)	2 (10)	6 (30)	3 (15)	0 (0)	20 (100)
Style preferred for taking decision relating to purchase any new machinery for the production of the company	9 (45)	0 (0)	9 (45)	1 (5)	1 (5)	20 (100)
Style selected to hire a machine	6 (30)	1 (5)	3 (15)	8 (40)	2 (10)	20 (100)
Style used to improve the operating procedures	3 (15)	3 (15)	7 (35)	6 (30)	1 (5)	20 (100)
<b>Average</b>	7 (33)	2 (9)	6 (28)	5 (25)	1 (4)	20 (100)

Source: Data collected from sampled engineering units of Vitthal Udyog Nagar.

Note: (1) Figures in the brackets indicate the percentage to total respondents.

The above table disclosed the leadership styles of technical matters of the selected engineering units. It is revealed that in case of taking decision relating to employ new subordinates to operate the machine of the company, 40% of the sample owners-managers have used style – I, 20% have used style – II, style – III and style – IV each respectively. Taking another situation of decision relating to the change of operating procedures, 25% of the respondents have used style – I, 55% have used style – II, 30% have used style – III, 35% adopt style – IV and remaining only 5% adopts style – V. In situation of taking decisions regarding to purchase new equipment, 45% of the sampled owners-managers adopted style – I, 10% respondents used style – II, 30% responded to style – III and remaining 15% respondents gave their opinion to style – IV. For another situation for taking decision relating to purchase of any new machinery for the production of the company, the response of the sampled owners-managers were 45% for style – I, 45% for style – III, 5% for style – IV and 5% for style – V. In case of situation to hire a machine, 30% respondents responded to style – I, 5% to style – II, 15% to style – III, 40% to style – IV and 10% to style – V. In case of taking decision to improve the operating procedures, 15% sample owners-managers have adopted style – I, 15% have adopted style – II, 35% of them adopted style – III, 30% adopted style – IV and remaining 5% adopted style – V.

## 5. PRODUCTION MATTERS

Owners-managers responsible for the arrangement of all the factors of production, such as raw materials, laborers, machines, money and management required for production. The owners-managers has to undertake efficient designs, productive efficiency and reduction of the cost by simplification and standardization, compare actual results of production with the targeted production and ascertain how far the target has been attained, provide the best possible working conditions to the employees and organize a system of periodic meeting of executives and workers so as to bring about greater coordination and create a spirit of fullest cooperation among all.

## LEADERSHIP STYLES OF OWNERS-MANAGERS USED IN PRODUCTION MATTERS

Situation	Leadership Styles					Total
	Benevolent Autocrat (I)	Strict Autocrat (II)	Prior Consultation (III)	Democratic Style (IV)	Delegation Style (V)	
Style selected the method of wage payment to the labour of the company	9 (45)	2 (10)	3 (15)	5 (25)	1 (5)	20 (100)
Style used for taking decision relating to volume of output	5 (25)	4 (20)	2 (10)	8 (40)	1 (5)	20 (100)
Style adopted for taking decision regarding to purchase practices and amount of inventory of the company	8 (40)	6 (30)	4 (20)	2 (10)	0 (0)	20 (100)
Style preferred for taking decision relating to location of plant	10 (50)	3 (15)	2 (10)	2 (10)	3 (15)	20 (100)
Style selected for taking decision relating to method of production	7 (35)	4 (20)	3 (15)	3 (15)	3 (15)	20 (100)
Style used for taking decision for relating to acquire raw material for production of the company	8 (40)	3 (15)	5 (25)	2 (10)	2 (10)	20 (100)
<b>Average</b>	8 (39)	4 (18)	3 (16)	4 (18)	2 (8)	20 (100)

Source: Data collected from sampled engineering units of Vitthal Udyog Nagar.

Note: (1) Figures in the brackets indicate the percentage to total respondents.

From the above table, it is observed that the most dominant style used by the owners-managers is style – I (benevolent autocrat). In case of the style selected for the method of wage payment to the labors of the company, 45% of the sample owners-managers have used style – I, 10% have used style – II, 15% used style – III, 25% have used style – IV and remaining 5% respondents adopted style – V. Looking to the situation of taking decision relating to volume of output, 25% of the respondents (owners-managers) have used style – I, 20% have used style – II, 10% have used style – III, 40% have used style – IV and remaining 5% have used style – V. In situation of taking decisions regarding to purchase practices and amount of inventory of the company, 40% of the sampled owners-managers were with the opinion of style – I, 30% respondents used style – II, 20% responses were of style – III and rest 10% have used style – IV. For another situation of taking decision relating to location of plant, the responses received from sampled owners-managers were 50% for style – I, 15% for style – II, 10% for style – III, 10% for style – IV and 15% for style – V.

**TESTING OF HYPOTHESES****ANALYSES OF VARIANCE ACCORDING TO OWNERS-MANAGERS VIEWS ON VARIOUS SITUATIONS**

PARTICULARS/SITUATION	TABLE VALUE	CALCULATED VALUE (F)
Personnel Matters	2.76	9.386531
Marketing Matters	2.64	5.273529
Financial Matters	2.69	14.67635
Technical Matters	2.76	9.385179
Production Matters	2.76	11.66872

**1. PERSONNEL MATTERS**

The above table expresses the statistical analysis of respondents' views regarding the situations of personnel matters. The calculated value of F is 9.38 and the tabulated value is 2.76. Thus, the calculated value of F is higher than the table value. Therefore null hypothesis is rejected and alternate hypothesis is accepted. Hence there is a significant difference between mean score of leadership styles regarding personnel matters within various situations and the results are not as per the expectations.

**2. MARKETING MATTERS**

The above table expresses the statistical analysis of owners-managers views regarding marketing matters. The calculated value of F is 5.27 and the tabulated value is 2.64. Thus, the calculated value of F is higher than the table value. Therefore null hypothesis is rejected and alternate hypothesis is accepted. Hence there is a significant difference between mean score of leadership styles regarding marketing matters within various situations.

**3. FINANCIAL MATTERS**

The above table expresses the statistical analysis of owners-managers views regarding financial matters. The calculated value of F is 14.67 and the tabulated value is 2.69. Thus, the calculated value of F is higher than the table value. Therefore null hypothesis is rejected and alternate hypothesis is accepted. Hence there is a significant difference between mean score of leadership styles regarding financial matters within various situations.

**4. TECHNICAL MATTERS**

The above table expresses the statistical analysis of respondents' views regarding technical matters. The calculated value of F is 9.38 and the tabulated value is 2.76. Thus, the calculated value of F is higher than the table value. Therefore null hypothesis is rejected and alternate hypothesis is accepted. Hence there is a significant difference between mean score of leadership styles regarding technical matters within various situations.

**5. PRODUCTION MATTERS**

The above table expresses the statistical analysis of respondents' views regarding production matters. The calculated value of F is 11.66 and the tabulated value is 2.76. Thus, the calculated value of F is higher than the table value. Therefore null hypothesis is rejected and alternate hypothesis is accepted. Hence there is a significant difference between mean score of leadership styles regarding production matters within various situations.

**FINDINGS**

Through this research work, the researcher tries to determine the leadership styles of owners-managers of the Engineering Units of Vithal Udyog Nagar. Leadership is interpersonal relationship between the leader-manager and the followers. The behavior exhibited by a leader during supervision of subordinates is known as leadership style. There are many leadership styles, but the researcher has used five leadership styles for the research study viz., Benevolent Autocrat, Strict Autocrat, Prior Consultation, Democratic Style and Delegation Style.

It has also been found that the owners-managers of the selected engineering of Vithal Udyog Nagar adopt different styles depending on the situations. It is also noticed that the popular leadership style is style I, i.e. benevolent autocrat style.

In personnel matters, about 35% of the owners-managers have adopted style I. Thus, maximum numbers of the sample size have adopted the autocratic style. The calculated and tabulated values of ANOVA are 9.38 and 2.76 which shows the acceptance of alternative hypothesis. It means that there is a significant difference between mean score of leadership styles regarding personnel matters within various situations.

In marketing matters, about 32% of the sample size has used style IV. Thus, maximum numbers of owners-managers are adopting the democratic style. The calculated and tabulated values of ANOVA are 5.27 and 2.64 which shows the rejection of null hypothesis. It means that there is a significant difference between mean score of leadership styles regarding marketing matters within various situations.

In financial matters about 35% of the sample size has adopted style I. Thus, maximum numbers of the owners-managers are adopting benevolent autocratic style. The calculated and tabulated values of ANOVA are 14.67 and 2.69 which shows the rejection of null hypothesis. It means that there is a significant difference between mean score of leadership styles regarding financial matters within various situations.

In technical matters, 33% of the sample size has adopted style I. Thus, maximum numbers of owners-managers are adopting the benevolent autocratic style. The calculated and tabulated values of ANOVA are 9.38 and 2.76 which shows the rejection of null hypothesis and acceptance of alternative hypothesis. It means that there is a significant difference between mean score of leadership styles regarding technical matters within various situations.

In production matters, on an average about 39% of the sample owners-managers have adopted style I. Thus, maximum owners-managers are adopting the benevolent autocratic style. The calculated and tabulated values of ANOVA are 11.66 and 2.76 which shows the rejection of null hypothesis. It means that there is a significant difference between mean score of leadership styles regarding production issues within various situations.

Style I (Benevolent Autocrat) is used for more number of times in personnel, financial, technical and production matters among all the business matters. It shows that the owners-managers have followed the autocratic approach while taking decisions.

**SUGGESTIONS**

1. The owners-managers should adopt the appropriate leadership style which best suits the situation related to personnel, financial, marketing, technical and production.
2. The owners-managers should know where and how to respond through the way they go about their core business, in a way that benefits their business.
3. Based on the findings of the study, it is imperative to establish a sound system of benefits, promotion, and development in order to increase employees' organizational commitment. This suggestion also meets reasonable pay, a good benefits system, and systematic promotion are the necessary ways to maintain human resources.
4. Owners-managers should develop co-worker skills and self-confidence, creating self-managed teams, providing direct access to sensitive information, eliminating unnecessary controls, and building a strong culture to support empowerment.
5. Leaders should consult with subordinates if they lack essential information or if the subordinates may not share the leader's goals or accept an autocratic decision.
6. Owners-leaders should be aware of the nature and strength of the employees to define and design ways of satisfying them and to administer so as to get the desired responses.

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## ADOPTION OF THE TECHNOLOGY ACCEPTANCE MODEL TO DETERMINE THE FACTORS THAT DRIVE TO SHOP ONLINE

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### ABSTRACT

*As the number of internet users is very large and is still increasing, consequently for the organizations, researchers and other involved channels/persons the need has arisen to understand the users'/online customers' attitudes towards internet shopping and intention to shop on the internet. This review study has adopted the Technology Acceptance Model (TAM) as the basis to develop an extended framework to study the customer and applied it to the context of online shopping. The study shows that customers' attitudes toward online shopping and his/her intention to shop online are not only affected by usefulness, enjoyment, and ease of use, but also by some exogenous factors like trust in online shopping, previous online shopping experiences, product characteristics, situational factors, and consumer traits.*

### KEYWORDS

Internet, Online Shopping/Internet Shopping.

### INTRODUCTION

Despite the slowing penetration of regular Internet users, the number of consumers using the Internet to shop for consumer goods and services is still growing (Forrester Research, December 2001). Research from the GfK Group (2002) shows that the number of online shoppers in six key European markets has risen to 31.4 percent from 27.7 percent last year. This means that 59 million Europeans use the Internet regularly for shopping purposes. However, not only does the number of online shoppers grow, the volume of their purchases also increases over-proportionally. In the US, online sales are forecasted to exceed \$36 billion in 2002, and grow annually by 20.9 percent to reach \$81 billion in 2006. Europeans are spending more money online as well. For instance, Europe's largest discount carrier, easyJet Airline Co., sold \$80 million more tickets online in the six months ended March 31 than it did a year earlier (Reinhardt and Passariello, 2002), whereas combined revenues for Amazon.com's European operations grew at more than 70 percent annually in each of the past three quarters, topping \$218 million. While these figures show that a large number of consumers in the US and Europe frequently use the Internet for shopping purposes, it is not clear what drives them to shop online and whether these numbers could be even increased if more attractive online stores were developed. This raises the issue of examining what factors affect consumers to shop online. Therefore, a framework is needed to structure the complex system of effects of these different factors, and develop an in-depth understanding of consumers' attitudes toward Internet shopping and their intentions to shop online. In this study, a framework based on previous research is built up on consumer adoption of new self-service technologies and Internet shopping systems (Dabholkar and Bagozzi, 2002; O'Cass and Fenech, 2002; Childers et al., 2001; Davis, 1993). This research suggests that consumers' attitude toward Internet shopping first depends on the direct effects of relevant online shopping features (Davis, 1993). Online shopping features can be either consumers' perceptions of functional and utilitarian dimensions, like "ease of use" and "usefulness", or their perceptions of emotional and hedonic dimensions like "enjoyment" (Menon and Kahn, 2002; Childers et al., 2001; Mathwick et al., 2001). By including both utilitarian and hedonic dimensions, aspects from the information systems or technology literature, as well as the consumer behavior literature are integrated in the framework. In addition to these relevant online shopping features, also exogenous factors are considered that moderate the relationships between the core constructs of the framework. Relevant exogenous factors in this context are "consumer traits" (Burke, 2002; Dabholkar and Bagozzi, 2002; Brown et al., 2001; Eastin and LaRose, 2000), "situational factors" (Wolfenbarger and Gilly, 2001; Avery, 1996), "product characteristics" (Grewal et al., 2002; Elliot and Fowell, 2000), "previous online shopping experiences" (Shim et al., 2001; Eastlick and Lotz, 1999), and "trust in online shopping" (Yoon, 2002; Lee and Turban, 2001). By incorporating these exogenous factors next to the basic determinants of consumers' attitude and intention to use a technology, the framework is applicable in the online shopping context. Together, these effects and influences on consumers' attitude toward online shopping provide a framework for understanding consumers' intentions to shop on the Internet. An important note to the proposed framework is that throughout this paper Internet shopping or online shopping is defined as the use of online stores by consumers up until the transactional stage of purchasing and logistics.

The outline of the paper is as follows. In the next section, a framework containing all constructs that affect consumers' attitude and intentions to shop on the Internet is introduced. Second, the basic determinants of consumers' attitude and intentions: "usefulness", "ease of use" and "enjoyment" are examined. Third, since it has been argued that "consumer traits" moderate the relationship between the three basic determinants and attitude, and "situational factors", "product characteristics", "previous online shopping experiences", and "trust in online shopping" moderate the relationship between consumers' attitude and intentions, an examination of the influence of these factors is presented. Fourth, the differences, similarities, advantages, and disadvantages of online shopping and traditional shopping features are investigated.

### FRAMEWORK FOR CONSUMERS' INTENTIONS TO SHOP ON THE INTERNET

For developing an in-depth understanding of consumers' attitudes toward online shopping and their intentions to shop on the Internet, a framework based on previous research on consumer adoption of new technologies and services is built up. As noted earlier, in this framework "online shopping" is defined as the use of online stores by consumers up until the transactional stage of purchasing and logistics. The core constructs of the framework are adapted from the Technology Acceptance Model (TAM) by Davis (1989), an influential research model in the information systems field. Although this model is specifically tailored to understand the adoption of computer-based technologies on the job or in the workplace, it has proven to be suitable as a theoretical foundation for the adoption of e-commerce as well (Chen et al., 2002; Moon and Kim, 2001; Lederer et al., 2000). Therefore, the TAM constructs are used as a basis for the research framework.

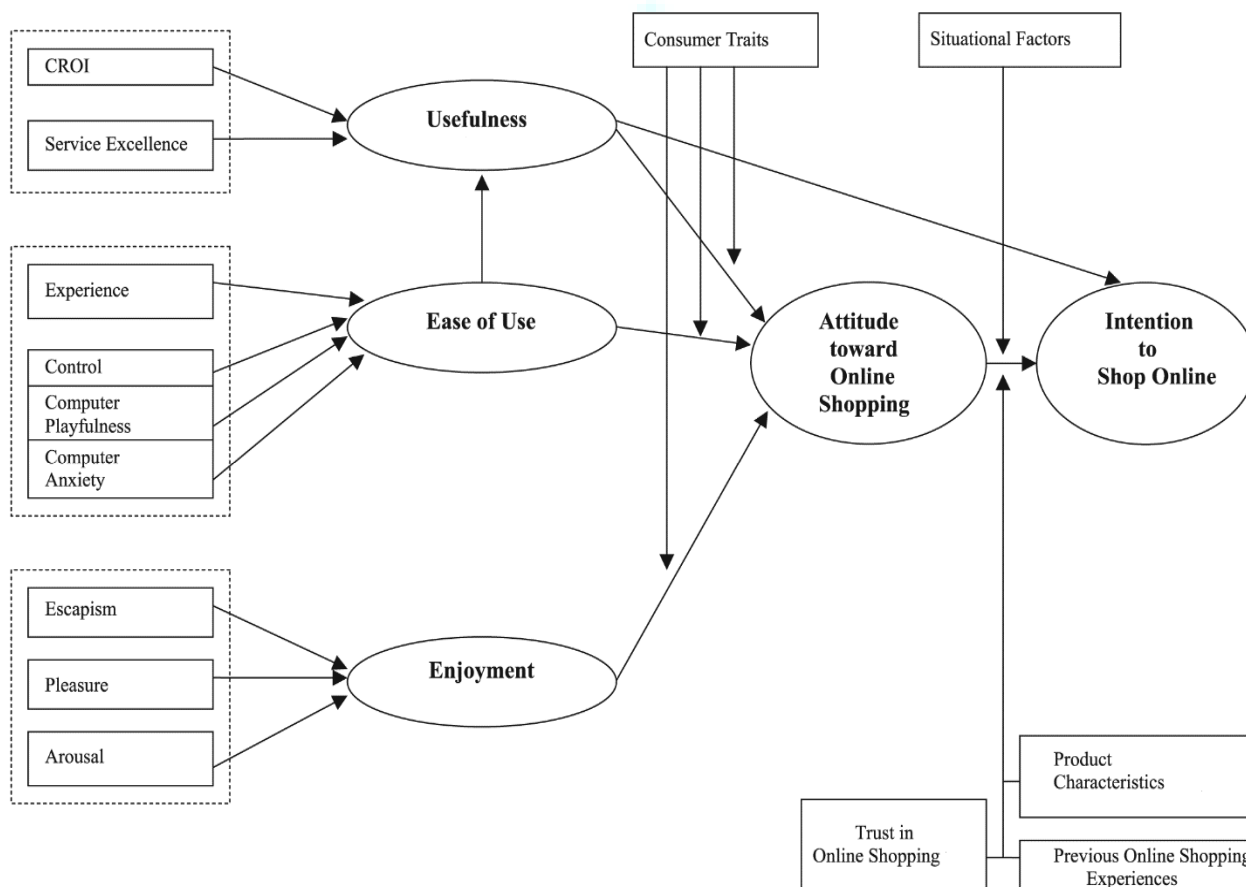
In TAM, behavioral intention to use a new technology is determined by the individual's attitude toward using this technology. To this, TAM originally identifies two, conceptually independent, determinants of a person's attitude toward using a new technology. The first determinant is "usefulness", and refers to the degree to which a person believes using the new technology will improve his/her performance or productivity. TAM also identifies a second determinant, "ease of use", referring to the extent to which a person believes that using the new technology will be free of effort. While "usefulness" refers to consumers' perceptions regarding the outcome of the experience, "ease of use" refers to their perceptions regarding the process leading to the final outcome.

A more recent addition to the technology acceptance model is the "enjoyment" construct, or the extent to which the activity of using the new technology is perceived to provide reinforcement in its own right, apart from any performance consequences that may be anticipated (Davis et al., 1992). Thus, within the TAM framework, both utilitarian and hedonic aspects are considered to act as determinants of consumers' attitude toward using a new technology. Understanding the determinants of consumers' attitude, it is argued that this attitude has a strong, direct, and positive effect on consumers' intentions to actually use the new technology or system (Bobbitt and Dabholkar, 2001; Davis, 1993).



Although TAM has proven to be a viable model for examining consumer acceptance of new technologies and systems, it is necessary, however, for the purpose of defining more specific drivers of consumer acceptance of new Internet technology, to extend this model by incorporating additional factors in the research framework. The major reason for this is that these exogenous variables improve the viability and predictive nature of TAM, and enable its application in the environment of online shopping. For instance, Venkatesh (2000) already suggested integrating additional factors like “control” (computer self-efficacy), “intrinsic motivation” (computer playfulness), and “emotion” (computer anxiety) into the existing technology acceptance model. These factors are proposed to act as significant determinants for “ease of use”, one of the basic constructs of TAM. Dabholkar and Bagozzi (2002) add the influences of two other exogenous factors, e.g. “consumer traits” and “situational influences” to the TAM framework, resulting in an attitudinal model of technology-based self-service. Also, O’Cass and Fenech (2002) have extended TAM by adding seven key consumer characteristics: “opinion leadership”, “buying impulsiveness”, “satisfaction with Web sites”, “Web shopping compatibility”, “shopping orientation”, “Internet self-efficacy”, and “Web security”. For the purpose of this paper, besides “ease of use”, “usefulness”, and “enjoyment”, five exogenous factors into the framework for understanding consumers’ intentions to use the Internet as a shopping medium are integrated: “consumer traits”, “situational factors”, “product characteristics”, “previous online shopping experiences”, and the “trust in online shopping”.

### THE EXTENDED FRAMEWORK OF TECHNOLOGY ACCEPTANCE MODEL



After introducing the basic determinants and all relevant exogenous factors of the research framework in this section, the next section of this paper elaborates on each factor separately, relating to their respective influence on consumers’ attitude and intentions to shop on the Internet. Focusing first on the influences of the three basic constructs adapted from TAM, and then move on to discuss the effects of the exogenous factors incorporated in the framework.

### BASIC DETERMINANTS OF ATTITUDE AND INTENTIONS TOWARD ONLINE SHOPPING

Motivations of consumers to engage in online shopping include both utilitarian and hedonic dimensions. Whereas some Internet shoppers can be described as “problem solvers”, others can be termed seeking for “fun, fantasy, arousal, sensory stimulation, and enjoyment” (Hirschman and Holbrook, 1982). The problem solvers merely shop online in order to acquire a specific product or service, in which case shopping is considered to be “an errand” or “work” (Babin et al., 1994). Their main concern is to purchase products in an efficient and timely manner to achieve their goals with a minimum of irritation. In contrast, the second category sees online shopping as “enjoyment” and seeks for the potential entertainment resulting from the fun and play arising from the Internet shopping experience. They appreciate the online shopping experience for its own sake, apart from any other consequence like, for example, an online purchase that may result (Holbrook, 1994). This dual characterization of consumers’ motivations for online shopping is consistent with the framework: whereas “usefulness” and “ease of use” reflect the utilitarian aspects of online shopping, “enjoyment” embodies the hedonic aspect. The next three paragraphs elaborate on the discussion that both utilitarian and hedonic factors ultimately affect consumers’ attitude toward shopping on the Internet.

#### Usefulness

“Usefulness” is defined as the individual’s perception that using the new technology will enhance or improve her/his performance (Davis, 1989, 1993). Applying this definition to the research context, as the new technology the shopping on the Internet is classified, and as the individual’s performance the outcome of the online shopping experience. Then, “usefulness” refers to consumers’ perceptions that using the Internet as a shopping medium enhances the outcome of their shopping experience. These perceptions influence consumers’ attitude toward online shopping and their intention to shop on the Internet. TAM posits a weak direct link between “usefulness” and attitude, and a strong direct link between “usefulness” and intention (Davis et al., 1989). This was explained as originating from consumers intending to use a technology because it was useful, even though they did not have a positive affect toward using. Apart from this, “usefulness” is also linked with “ease of use” to determine consumers’ attitude toward online shopping. According to TAM, “usefulness” is influenced by “ease of use”, because the easier a technology is to use, the more useful it can be (Venkatesh, 2000; Dabholkar, 1996; Davis et al., 1989).

In the designed framework, two latent dimensions of the “usefulness” construct are included: “consumer return on investment (CROI)”, and “service excellence” (Mathwick et al., 2001). Both dimensions are extrinsic value-based perceptions and serve as performance indicators for shopping on the Internet. “CROI” is the perceived return on cognitive, behavioral, or financial investments made by the consumer. By investing in a computer and learning to shop on the Internet, the



consumer expects a desired result, such as an online search or Web purchase, in return from shopping on the Internet. If this return meets their expectations, consumers' "usefulness" of the Internet as a shopping medium will be positive. "Service excellence" is the consumer's appreciation of delivered promises and performed functions. Service excellence operates as an ideal, a standard against which judgments are ultimately formed (Holbrook, 1994). If online shopping meets this ideal by enabling the consumer to accomplish the shopping task he or she has set out to perform, then consumers will judge the Internet shopping performance positively (Mathwick et al., 2002). This leads to positive perceptions regarding the usefulness of online shopping.

#### **Ease of use**

"Ease of use" is defined as the individual's perception that using the new technology will be free of effort (Davis, 1989, 1993). Applying this to the research context, "ease of use" is the consumer's perception that shopping on the Internet will involve a minimum of effort. Whereas "usefulness" referred to consumers' perceptions regarding the outcome of the online shopping experience, "ease of use" refers to their perceptions regarding the process leading to the final online shopping outcome. In a simplified manner, it can be stated that "usefulness" is how effective shopping on the Internet is in helping consumers to accomplish their task, and "ease of use" is how easy the Internet as a shopping medium is to use. According to TAM, "ease of use" has a dual effect, direct as well as indirect, on consumers' intention to shop online. The indirect effect on intention is through "usefulness", as already explained in the previous section. The direct effect is explained by the fact that in behavioral decision making consumers attempt to minimize effort in their behaviors, as is also the case with consumers' perceptions regarding the "ease of use": the perception that Internet shopping will be free of effort (Venkatesh, 2000). The easier and more effortless a technology is, the more likely consumers intend to use this technology.

Understanding that "ease of use" affects consumers' attitude and intention toward online shopping, it is important to identify the latent dimensions of this construct in the Internet setting. According to TAM, "ease of use" is particularly of influence in the early stages of user experience with a technology or system (Davis, 1989, 1993). Following this, Venkatesh (2000, p. 343) stated: "With increasing direct experience with the target system, individuals adjust their system-specific ease of use to reflect their interaction with the system". Implying that if consumers get more experienced with Internet, they will adjust their perceptions regarding the "ease of use" of the Internet as a shopping medium in a positive direction. Besides "experience" with the technology or system, also three other latent dimensions of the "ease of use" construct are incorporated in the designed framework: "control", "computer playfulness", and "computer anxiety" (Venkatesh, 2000). "Control" relates to an individual's perception of the availability of knowledge, resources, and opportunities required to perform a specific behavior, in this study's case of online shopping. "Computer playfulness" is the degree of cognitive spontaneity in computer interactions. Playful individuals may tend to underestimate the difficulty of the means or process of online shopping, because they quite simply enjoy the process and do not perceive it as being effortful compared to those who are less playful (Venkatesh, 2000). "Computer anxiety" is defined as an individual's apprehension or even fear when she/he is faced with the possibility of using computers. This influences consumers' perceptions regarding the "ease of use" of the Internet as a shopping medium in a negative way, since using a computer is one of the necessary requirements for online shopping.

In addition to these four latent dimensions, "site characteristics" like search functions, download speed, and navigation, also play a role in shaping "ease of use" (Zeithaml et al., 2002). But since these site characteristics merely influence the "ease of use" of a particular Web site or online store, and not the Internet as a shopping medium in general, these site characteristics are not elaborated for the purpose of this paper.

#### **Enjoyment**

Next to the evidence for the critical role of extrinsic motivation for technology use (Hirschman and Holbrook, 1982; Babin et al., 1994), there is a significant body of theoretical and empirical evidence regarding the importance of the role of intrinsic motivation (Davis et al., 1992; Venkatesh and Speier, 1999, 2000). Intrinsic motivation for Internet shopping is captured by the "enjoyment" construct in the framework designed in this paper. Intrinsic value or "enjoyment" derives from the appreciation of an experience for its own sake, apart from any other consequence that may result (Holbrook, 1994). Applying it to this research context, "enjoyment" results from the fun and playfulness of the online shopping experience, rather than from shopping task completion. The purchase of goods may be incidental to the experience of online shopping. Thus, "enjoyment" reflects consumers' perceptions regarding the potential entertainment of Internet shopping. Childers et al. (2001) found "enjoyment" to be a consistent and strong predictor of attitude toward online shopping. If consumers enjoy their online shopping experience, they have a more positive attitude toward online shopping, and are more likely to adopt the Internet as a shopping medium.

In the framework designed here, three latent dimensions of "enjoyment" construct are identified, including "escapism", "pleasure", and "arousal" (Menon and Kahn, 2002; Mathwick et al., 2001). "Escapism" is reflected in the enjoyment that comes from engaging in activities that are absorbing, to the point of offering an escape from the demands of the day-to-day world. "Pleasure" is the degree to which a person feels good, joyful, happy, or satisfied in online shopping, whereas "arousal" is the degree to which a person feels stimulated, active or alert during the online shopping experience. A pleasant or arousing experience will have carry-over effects on the next experience encountered (Menon and Kahn, 2002). If consumers are exposed initially to pleasing and arousing stimuli during their Internet shopping experience, they are then more likely to engage in subsequent shopping behavior: they will browse more, engage in more unplanned purchasing, and seek out more stimulating products and categories.

### **EXOGENOUS FACTORS**

TAM is criticized for ignoring the social influence on technology acceptance (Chen et al., 2002; Moon and Kim, 2001). Although "ease of use", "usefulness", and "enjoyment" are believed to be fundamental in determining the acceptance and use of various corporate information technologies (Davis, 1989, 1993), these beliefs, however, may not explain consumers' behavior toward newly emerging technologies, such as Internet shopping. Factors contributing to the acceptance of a new IT are likely to vary with the technology, target users, and context (Moon and Kim, 2001). Thus, for this specific online shopping context, additional explanatory factors are needed beyond the usefulness, ease of use, and enjoyment constructs. Therefore, a total of five exogenous factors are incorporated in the designed framework for understanding consumers' attitude and intention toward online shopping: "consumer traits", "situational factors", "product characteristics", "previous online shopping experiences", and "trust in online shopping". These exogenous factors are key drivers in moving consumers to ultimately adopt the Internet as a shopping medium. The different ways in which consumers' intention to shop online is influenced by these exogenous factors are discussed below.

#### **Consumer traits**

Consumer traits that are of interest in understanding why consumers shop on the Internet include demographic factors and personality characteristics. Four relevant demographic factors – age, gender, education, and income – (Burke, 2002) have a significant moderating effect on the relationship between the three basic determinants "ease of use", "usefulness", and "enjoyment" and consumers' attitude toward online shopping. The influence of age is noticeable through the fact that compared to older consumers, younger adults, especially those under age 25, are more interested in using new technologies, like the Internet, to find out about new products, search for product information, and compare and evaluate alternatives (Wood, 2002). A reason for this is that older consumers may perceive the benefits of Internet shopping to be less than the cost of investing in the skill needed to do it effectively, and therefore avoid shopping on the Internet (Ratchford et al., 2001). Next to the higher interest in using new technologies, consumers younger than age 25 are the group most interested in having fun while shopping. They respond more favorably than older shoppers to features that make online shopping entertaining. When it comes to gender, men express a greater interest in using various types of technology in the shopping process. They are more positive about using the Internet as a shopping medium, whereas female shoppers prefer using catalogs to shop at home. But the female consumers that do prefer to shop on the Internet, shop more frequently online than their male counterparts (Burke, 2002; Li et al., 1999). Education also plays a moderating role in the relationship between the three basic determinants and consumers' attitude toward online shopping. Higher educated consumers are more comfortable using non-store channels, like the Internet to shop (Burke, 2002). A reason for this is that education is often positively correlated with an individual's level of Internet literacy (Li et al., 1999). A final demographic factor of interest is income. Consumers with higher household incomes (above \$75,000 annually) intend to shop more online compared to lower income consumers. A reason for this is that higher household incomes are often positively correlated with possession of computers, Internet access and higher education levels of consumers (Lohse et al., 2000).

Next to these demographic factors, personality characteristics also have a moderating effect on the relationship between "ease of use", "usefulness", and "enjoyment" and consumers' attitude toward shopping on the Internet. In the context of this research, relevant personality traits are "expertise" (Ratchford et al., 2001; Alba and Hutchinson, 1987), "self-efficacy" (Eastin and LaRose, 2000; Marakas et al., 1998; Bandura, 1994), and "need for interaction" (Dabholkar and Bagozzi, 2002; Dabholkar, 1996). "Expertise" is defined as an individual's level of knowledge or skill. In order to shop on the Internet, a considerable amount of knowledge or skill is required. Aside from the basic knowledge of computer use, consumers also have to learn the skills needed to obtain the desired information on the Internet. Because learning to shop on the Internet is costly and time-consuming for those who are computer illiterate to start with, consumers weigh the costs and benefits before deciding whether to invest in learning the required skills. Since learning-by-doing is an important component of acquiring such skills, those who have the most experience at shopping on the Internet are likely to be the most skilled (Ratchford et al., 2001). Once consumers have the required level of knowledge and skills to shop on the Internet, this will attenuate the relationship between "ease of use" and "usefulness" and their attitude toward online shopping, because these factors are then of less influence to them in forming a positive attitude toward shopping on the Internet.

A personality characteristic that is closely related to expertise is self-efficacy. "Self-efficacy" refers to individuals' beliefs that they have the ability and the resources to successfully perform a specific task (Bandura, 1994). Since online shopping requires basic knowledge of computer use as well as knowledge about the Internet, a distinction has been made in this context between "computer self-efficacy" and "Internet self-efficacy". Marakas et al. (1998) define general "computer self-efficacy" as an individual's judgment of efficacy across multiple computer application domains, whereas "Internet self-efficacy" is a person's judgment of his or her ability to apply Internet skills in a more encompassing mode, such as finding information or troubleshooting search problems (Eastin and LaRose, 2000). Thus, consumers with low self-efficacy are uncertain and less comfortable shopping on the Internet, and therefore need simple procedures that require little knowledge and guide them through the online shopping process. This indicates that, in case of low self-efficacy, the level of "ease of use" of Internet as a shopping medium must be high in order to achieve a positive attitude toward online shopping. On the other hand, high degrees of computer self-efficacy and Internet self-efficacy proved to have an attenuating effect on the relationship between "usefulness" and attitude toward using the Internet (Eastin and LaRose, 2000). A reason for this attenuating effect is that self-efficacy judgments are positively related to outcome expectations (Oliver and Shapiro, 1993). The stronger a person's self-efficacy beliefs, the more likely he or she tries to achieve the desired outcome. In addition to this, it is explained by the fact that consumers are more likely to attempt and persist in behaviors that they feel capable of performing (Eastin and LaRose, 2000).

A final personality characteristic that is of relevance in the context of online shopping is the "need for interaction" with a service employee or salesperson (Dabholkar and Bagozzi, 2002). This "need for interaction" is defined as the importance of human interaction to the consumer in service encounters (Dabholkar, 1996). In online shopping, the human interaction with a service employee or salesperson is replaced by help-buttons and search features. Therefore, consumers with a high "need for interaction" will avoid shopping on the Internet, whereas consumers with a low "need for interaction" will seek such options (Dabholkar and Bagozzi, 2002). This implicates that the consumer characteristic "need for interaction" has a strengthening effect on the relationship between the three basic determinants and consumers' attitude toward Internet shopping. Owing to the lack of physical contact with service employees and sales persons in an online shopping environment, these relationships need to be stronger in order for consumers with a high need for interaction to have a positive attitude toward shopping online.

#### **Situational factors**

In order to fully understand consumers' motivations to engage in online shopping, situational factors have to be taken into account as well. A wide variety of situational aspects can moderate the relationship between attitude and consumers' intention to shop on the Internet, but for the purpose of this paper only the most relevant are discussed: "time pressure", "lack of mobility", "geographical distance", "need for special items" and attractiveness of alternatives". To most consumers important attributes of online shopping are convenience and accessibility (Wolfenbarger and Gilly, 2001): because consumers can shop on the Internet in the comfort of their home environment, it saves time and effort, and they are able to shop any time of the day or night. Especially for consumers that, owing to their extended working hours, only have a small amount of free time, online shopping is an excellent opportunity. Thus, the situational factor "time pressure" has an attenuating impact on the relationship between attitude and consumers' intention to shop online. Because the Internet is time saving and accessible 24 hours a day, this becomes the main drive for online shopping and attitude toward Internet shopping is less important. A second situational factor is "lack of mobility" (Avery, 1996). Consumers who are not able to shop in traditional stores owing to an illness or other immobilizing factors, have the ability to shop on the Internet to fulfill their shopping goals. Furthermore, for consumers who have to travel large distances to stores that provide them with the articles needed, shopping on the Internet is a viable alternative to overcome this "geographical distance". A fourth situational factor that attenuates the relationship between attitude and consumers' intention to shop online is the "need for special items" (Wolfenbarger and Gilly, 2001). In case consumers need to acquire tailored products, like special sized clothing or large sized shoes, that are not available in conventional stores, shopping on the Internet is an option for them to purchase these special items anyhow. Finally, the last situational factor that moderates the relationship between attitude and intention is "attractiveness of alternatives". In case consumers are drawn by the attractiveness of a certain store in their neighborhood that, for example, sells the same products as the online store, the relationship between attitude and intention will be attenuated. The reason for this is that the consumer, although he might have a positive attitude toward online shopping, is led by the strong attractiveness of the brick-and-mortar alternative. Therefore, he will choose to shop offline, despite his positive attitude toward shopping on the Internet.

#### **Product characteristics**

Consumers' decisions whether or not to shop online are also influenced by the type of product or service under consideration. Some product categories are more suitable for online shopping than other categories. The lack of physical contact and assistance in shopping on the Internet is one factor that influences this suitability. Another factor is the need to feel, touch, smell, or try the product, which is not possible when shopping online. Following this, clearly standardized and familiar products such as books, videotapes, CDs, groceries, and flowers, have a higher potential to be considered when shopping on the Internet, especially since quality uncertainty in such products is virtually absent, and no physical assistance or pre-trial is needed (Grewal et al., 2002; Reibstein, 1999). On the other hand, personal-care products like perfume and lotion, or products that require personal knowledge or experience like computers and cars, are less likely to be considered while shopping online (Elliot and Fowell, 2000). Thus, if personal interaction with a salesperson is required for the product under consideration, consumers' intention to shop on the Internet is low. Furthermore, if consumers need to pre-trial the product under consideration, or have the necessity to feel, touch or smell the product, then their intention to shop online is low as well. However, in case of standardized and familiar goods, or certain sensitivity products that require a level of privacy and anonymity, consumers' intention to shop on the Internet is high (Grewal et al., 2002).

#### **Previous online shopping experiences**

Intention to shop online is also influenced by consumers' Internet shopping history (Shim et al., 2001). It is demonstrated by past research findings that prior online shopping experiences have a direct impact on Internet shopping intentions (Eastlick and Lotz, 1999; Weber and Roehl, 1999). Helsen (1964) suggests that an individual's response to a judgmental task is based on three aspects:

- (1) Sum of the individual's past experiences.
- (2) The context or background.
- (3) The stimulus.

To the extent that minimal context or system-specific information is given, the individual will make system-specific evaluations based on prior experiences with the system. In the online shopping context, consumers evaluate their Internet shopping experiences in terms of perceptions regarding product information, form of payment, delivery terms, service offered, risk involved, privacy, security, personalization, visual appeal, navigation, entertainment and enjoyment (Burke, 2002; Parasuraman and Zinkhan, 2002; Mathwick et al., 2001). In case prior online shopping experiences resulted in satisfactory outcomes and were evaluated positively, this leads consumers to continue to shop on the Internet in the future (Shim et al., 2001). Such past experiences decrease consumers' perceived risk levels associated with online shopping. However, if these past experiences are judged negatively, consumers are reluctant to engage in online shopping in future occasions. This illustrates the importance of turning existing Internet shoppers into repeat shoppers by providing them with satisfying online shopping experiences (Weber and Roehl, 1999).

**Trust in online shopping**

Lack of trust is one of the most frequently cited reasons for consumers not shopping on the Internet (Lee and Turban, 2001). Since this shopping medium is relatively new and most of them have only little experience with it, shopping on the Internet provides a challenge to many consumers. Rotter (1971) has found that in novel situations, people rely on their general disposition to trust. The most salient source of trust in a retail setting is the salesperson, where consumer trust is dependent on the salesperson's expertise, likeability, and similarity to the customer (Doney and Cannon, 1997). However, with online shopping this physical salesperson is replaced by help buttons and search features, thus removing the basis of consumer trust in the shopping experience (Lohse and Spiller, 1998). Furthermore, online shopping also contains a level of risk. Consumers cannot physically check the quality of a product or monitor the safety and security of sending sensitive personal and financial information while shopping on the Internet (Lee and Turban, 2001). This condition creates a sense of powerlessness among online shoppers. Therefore trust has an important moderating effect on the relationship between consumers' attitude toward Internet shopping and intention to shop online.

The complexity of examining consumer trust in Internet shopping and its determinants lies in the fact that online shopping involves trust not simply between the Web shop and the consumer (interpersonal trust), but also between the consumer and the computer system, i.e. the Internet (institutional trust) (McKnight and Chervany, 2001-2002). Next to this, contextual factors like security and privacy have an impact on consumer trust in shopping on the Internet (Lee and Turban, 2001). A high level of security and privacy in the online shopping experience has a positive effect on consumer trust, owing to the lowered risk involved with exchanging information. In general, the level of trust, interpersonal as well as institutional, is positively related to consumers' attitude and intention to shop on the Internet. Violation of consumers' trust in online shopping, in terms of privacy invasion or misuse of personal information, negatively influences attitude toward online shopping and leads to reluctant behavior among consumers to shop on the Internet in future occasions.

**CONCLUSION**

In the review analysis, by taking TAM as the basis to develop a new framework to understand the factors that derive a customer to internet shopping. It is found that not only the basic components of TAM model i.e. ease of use, enjoyment and usefulness affects the consumers' attitudes towards online shopping and intention to shop online, but some exogenous factors like trust in online shopping, previous online shopping experiences, product characteristics, situational factors, and consumer traits also affects them as well.

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## TO ASSESS THE EFFECT OF INTELLECTUAL CAPITAL ON ORGANIZATIONAL PERFORMANCE IN THE MANUFACTURING SECTOR

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### ABSTRACT

*The main purpose of the research is to verify the effect of intellectual capital on organizational performance in manufacturing companies. The research adopted convenience sampling which took samples from the empirical studies of the Taiwan, china, and Spanish and Portuguese companies. The variables studied were individual capital, internal capital/structure and external capital/structure as the independent. The performance was in terms of market share, profitability, customer loyalty, long term suppliers as the dependent variables. The result shows that intellectual capital has a positive and significant effect on the organizational performance in manufacturing companies.*

### KEYWORDS

Intellectual capital, individual capital, internal structure, external structure organizational performance.

### 1.0 INTRODUCTION

#### 1.1 BACKGROUND OF THE STUDY

Health and growth in today's economy are primarily driven by intangible (intellectual) assets. The rise of new economy has highlighted the fact that the value created depends far less on their physical assets than on their intangible ones. These assets, often described as intellectual capital, are being recognized as the foundation of individual, organizational and national competitiveness in the twenty-first century (Wigg, 1997; Bounfour and Edvinsson, 2005). As noticed by Pike et al. (2002:659), "as the business society is developed, the key step in value creation has ascended an intellectual staircase".

Intellectual capital has been identified as a set of intangibles (resources, capabilities and competences) that drives the organizational performance and value creation (Roos and Roos, 1997; Bontis, 1998; Bontis et al., 2000). This suggests causal relationships between intellectual capital and organizational value creation (Marr and Roos, 2005). However, intangible assets seldom affect performance directly. Instead, they work indirectly through relationships of cause and effect (Kaplan and Norton, 2004).

From the management point of view it is essential to recognize that none of the elements of that set of intangibles is per se sufficient for a successful performance. These key elements need to be combined to generate value. In this context, intellectual capital is a phenomenon of interactions, transformations and complementarities, meaning that a resource's productivity may improve through the investments in other resources.

Despite the tremendous theoretical improvement during the last years, intellectual capital phenomenon requires theory and research methodology that enhances the integration of theory construction and theory testing. Research in intellectual capital is actually, at critical cross-roads with increased emphasis on developing theoretical concepts and testing relationships guided by such concepts. It is vital to consolidate some findings, namely arrive at a set of operational measures that meet minimal criteria of measurement.

Some authors (Churchill, 1979; Venkatraman, 1989; Straub, 1989) claim that the linkage between theoretical definitions and their corresponding measures have been generally weak, despite "the process of construct development and measurement is at the core of theory construction" (Venkatraman, 1989:944). Linking theory construction (exploratory) to theory testing (confirmatory) is a sine qua non condition for the management theory development (Hughes et al., 1986) and comparing findings in different settings is an important tool that serves that purpose.

Previous studies (Bontis, 1998; Bontis et al., 2000) demonstrate that intellectual capital is positively and significantly associated with organizational performance. The purpose of our study is: (i) to validate a set of operational measures, which compared with other studies, may result in a measurement instrument for financial sector; (ii) to examine interrelationships among intellectual capital components and organizational performance and; (iii) to study interaction effects among intellectual capital components and organizational performance.

#### 1.2 STATEMENT OF THE PROBLEM

Corporate success in the 21st century depends on four elements, namely abundant natural resources, sufficient funding, advanced technologies, and competent human resources (Lester C. Thurow, 1992). The era dominated by knowledge-based economy and Internet, nevertheless, led to the emergence of knowledge-intensive organizations, which in turn eroded the competitiveness of organizations that rely on a massive amount of natural resources and funding. The fact that a growing number of organizations have shifted their attention to knowledge integration and intellectual capital management shows many companies have come to realize that knowledge in the information-dominated era will eventually replace labor, capital, land and the other tangible assets as a major source of corporate competitiveness (Durcker, 1993; Jun-Long Hong, 2002).

As the awareness of "intellectual capital management" has been raised in recent years, intellectual capital is considered a magical weapon that enables an organization to increase/nurture intangible assets and subsequently build a sustainable competitiveness advantage (Barney and Wright, 1998; Jun-Long Hong, 2002). Intellectual capital affects the performance of the organization and this has led the study of the effect of intellectual capital on organizational performance. This study is summarized in the three purposes of the study as, to determine whether the individual competence affects organizational performance, to verify whether the internal structure affects organizational performance and to investigate whether external structure affects organizational performance.

#### 1.3 OBJECTIVES OF THE STUDY

##### 1.3.1 General objective

To investigate whether the intellectual competencies appropriately implemented affects organizational performance.

##### 1.3.2 Specific objectives

1. To determine whether the individual competence appropriately implemented affects organizational performance.
2. To verify whether the internal structure appropriately implemented affects organizational performance.
3. To verify whether the external structure appropriately implemented affects organizational performance in a positive and significant manner.

#### 1.4 RESEARCH QUESTIONS

1. Does individual competence affect the organizational performance?
2. Does internal structure affect organizational performance?
3. Does external structure affect organizational performance?

#### 1.5 JUSTIFICATION OF THE STUDY

The purpose of this study was to assess the intellectual capital on organizations performance in the manufacturing sector. This study aimed to investigate how managers and employees of organizations use intellectual capital in their work, understand the significance of intellectual capital on organizations performance and reveal if there are any specific aspects of organizations that benefit from intellectual competence of workers.



### 1.6 SCOPE OF THE STUDY

This study was library research in which in depth theoretical and empirical literature review was done to assess intellectual capital in organizations. The analysis was based on previously conducted research from books, published scholarly works, relevant journal articles and internet sources.

### 1.7 LIMITATION OF THE STUDY

This study presented two major limitations:

- The data collected for this study was secondary data as documented in books, journals, academic papers, newspaper articles and the internet.
- Secondly, it is a content analysis and therefore an empirical study will be required to attest to the accuracy of the findings.
- Third, the empirical study were conducted in European countries thus there is need to replicate the same in the African states to see if it can yield same results.

### 1.8 SIGNIFICANCE OF THE STUDY

The study provides potential information on understanding the effect of intellectual capital to the organization and the ultimate outcome on performance.

## 2.0 REVIEWING THE LITERATURE

### 2.1 INTRODUCTION

Literature review is the revisiting of the other scholar's work related with the area of study in order to establish the benchmark and link to assist the current research in propelling his/her study to a successive conclusion.

### 2.2 SYSTEMS THEORY

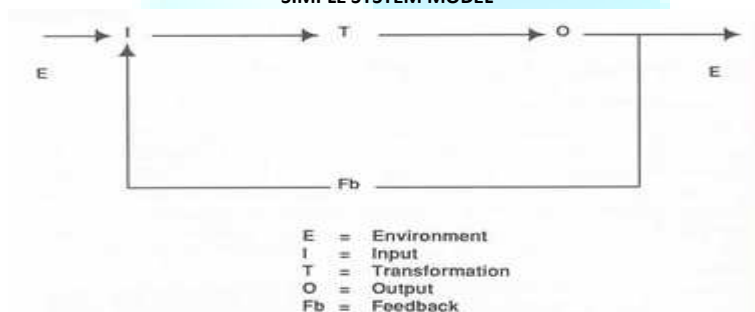
A system is composed of regularly interacting or interrelating groups of activities. For example, in noting the influence in organizational psychology as the field evolved from "an individually oriented industrial psychology to a systems and developmentally oriented organizational psychology", it was recognized that organizations are complex social systems; separating the parts from the whole reduces the overall effectiveness of organizations. This is different from conventional models that center on individuals, structures, departments and units separate in part from the whole, instead of recognizing the interdependence between groups of individuals, structures and processes that enable an organization to function. Laszlo explains that the new systems view of organized complexity went "one step beyond the Newtonian view of organized simplicity" which reduced the parts from the whole, or understood the whole without relation to the parts. The relationship between organizations and their environments became recognized as the foremost source of complexity and interdependence. In most cases, the whole has properties that cannot be known from analysis of the constituent elements in isolation. Béla H. Bánáthy, who argued — along with the founders of the systems society — that "the benefit of humankind" is the purpose of science, has made significant and far-reaching contributions to the area of systems theory. For the Primer Group at ISSS, Bánáthy defines a perspective that iterates this view: In the most general sense, system means a configuration of parts connected and joined together by a web of relationships.

### 2.3 COMPLEX ADAPTIVE SYSTEMS

Complex adaptive systems are special cases of complex systems. They are complex in that they are diverse and composed of multiple, interconnected elements; they are adaptive in that they have the capacity to change and learn from experience. The term complex adaptive system was coined at the interdisciplinary Santa Fe Institute (SFI), by John H. Holland, Murray Gell-Mann and others. An alternative conception of complex adaptive (and learning) systems, methodologically at the interface between natural and social science, has been presented by Kristo Ivanov in terms of hyper systems. This concept intends to offer a theoretical basis for understanding and implementing participation of "users", decisions makers, designers and affected actors, in the development or maintenance of self-learning systems.

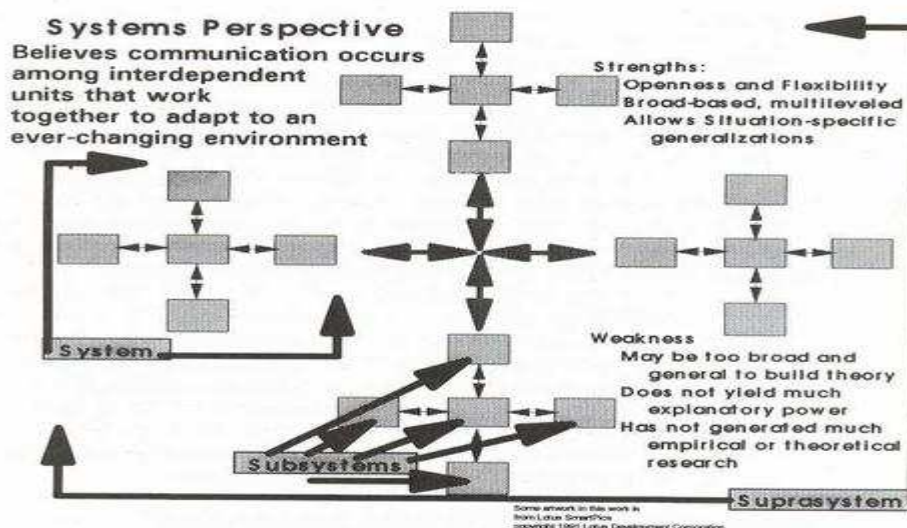
#### 2.3.1 Conceptual model

SIMPLE SYSTEM MODEL



Source: Littlejohn (1999)

ELABORATED SYSTEM PERSPECTIVE MODEL

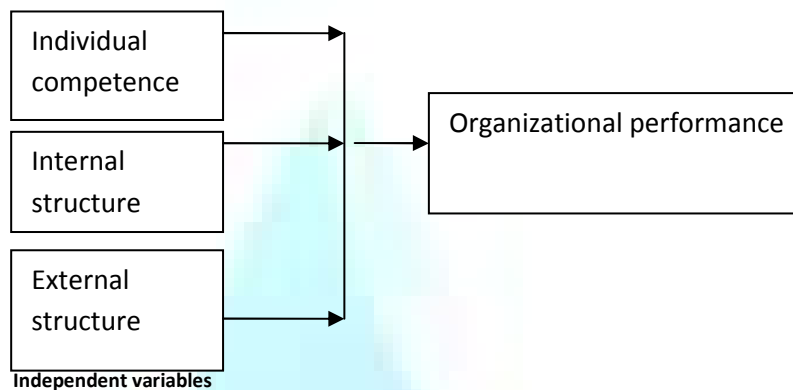


Source: Infante (1997)

## 2.4 AUTOPOIESIS THEORY

"Autopoiesis" (from Greek αὐτο- (auto-), meaning "self", and ποίησις (poiesis), meaning "creation, production") refers to a closed system capable of creating itself. The term was introduced in 1972 by Chilean biologists Humberto Maturana and Francisco Varela to define the self-maintaining chemistry of living cells. Since then the concept has been also applied to the fields of systems theory and sociology. An autopoietic machine is a machine organized (defined as a unity) as a network of processes of production (transformation and destruction) of components which: (i) through their interactions and transformations continuously regenerate and realize the network of processes (relations) that produced them; and (ii) constitute it (the machine) as a concrete unity in space in which they (the components) exist by specifying the topological domain of its realization as such a network. The space defined by an autopoietic system is self-contained and cannot be described by using dimensions that define another space. When we refer to our interactions with a concrete autopoietic system, however, we project this system on the space of our manipulations and make a description of this projection.

## 2.5 CONCEPTUAL FRAMEWORK



Source : author (2013)

With individual competence means an employee's ability to take actions under various situations which involves explicit knowledge, skills, experiences, value-related judgment, and social network. Internal structure being the sum of patents, concepts, patterns, computer and management systems. External structure being relationships with customers and suppliers, which involves the brand, reputation and trademarks.

## 2.6 INTELLECTUAL CAPITAL

There is no widely accepted definition of intellectual capital. However, the literature revision point out that intellectual capital is essentially related to "knowledge that can be converted into value" (Cabrita, M and Vaz, J (2006) "Intellectual Capital and Value Creation: at least three elements are common in almost all definitions: (i) intangibility; (ii) knowledge that creates value and; (iii) effect of collective practice. This means that are excluded all irrelevant intangibles that have no function over the firm's future potential and it is assumed that competitive advantage depends on how efficient the firm is in building, sharing, leveraging and using its knowledge.

The most important challenge for researchers is to prove that intellectual capital creates value (MERITUM, 2001). Our focus is on intellectual capital value drivers and the way its different components interact to generate value. Which component is most valuable may have different answers depending on internal and external organizational variables.

The literature presents a great number of classification schemes for intellectual capital. However, a convergent taxonomy emerged, categorizing intellectual capital onto three components: (i) human capital; (ii) structural capital and; (iii) relational capital.

### 2.6.1 Human capital

Human capital is the primary component of intellectual capital (Edvinsson and Malone, 1997; Stewart, 1997; Bontis, 1998; Choo and Bontis, 2002), because human interaction is the critical source of intangible value in the intellectual age (O'Donnell et al., 2003). A macroeconomic perspective recognizes human capital as the driver of national economic activity, competitiveness and prosperity (OECD, 1996). On individual level, human capital is defined as a combination of four elements: (i) genetic inheritances; (ii) education; (iii) experience and; (iv) attitudes about life and business (Hudson, 1993). The organizational perspective refers to human capital as "the source of innovation and strategic renewal" (Bontis, 1998). Gupta and Roos (2001) added that "core intellectual capital", comprising competence, intellectual agility and attitude, are the potential of synergies for the value creation.

Knowledge generation and transfer is an essential source of firm's sustainable competitive advantage, but it entirely depends on the individuals' willingness. As such, if the human capital can suggest the economic potential of individuals within a firm, it is also true that the outcomes are intimately connected to motivation. Although not a goal itself, motivation should serve to support the organization's goal. Thus, managing motivation, especially balancing intrinsic and extrinsic motivation is an important and hard-to-imitate competitive advantage (Osterloh and Frey, 2000).

### 2.6.2 Structural capital

Structural capital represents the organization's capabilities to meet its internal and external challenges. It includes infrastructures, information systems, routines, procedures and organizational culture. Structural capital is the skeleton and the glue of an organization because it provides the tools (management philosophy, processes, culture) for retaining, package and move knowledge. Manufacturing industry scenario has recently changed. Globalization, deregulation and internationalization create new business challenges. In the past, companies sought to improve their balance sheet and asset growth, increasing profitability. But, since the Basle Accord, the emphasis is on assets productivity, capital efficiency and revenue growth. Information and communication technology has been largely used in a variety of ways to reduce costs, increase efficiency and accelerate innovation, drivers of today's manufacturing performance.

### 2.6.3 Relational/External capital

Relational capital is the knowledge embedded in the relationships with any stakeholder that influences the organization's life. The literature defends that relationships with stakeholders are the necessary condition for building, maintaining and renewing resources, structures and processes over time, because through external relationships firms can access critical and complementary resources. Recently, some authors (Prahalad and Ramaswamy, 2000) suggest that customers become a new source of competence for the organization because they renew the overall competence of the organization and rejuvenate the knowledge base preventing it from the obsolescence in a turbulent environment (Gibbert et al., 2001).

Relational capital can be measured as a function of longevity (Bontis, 2002), while marketing relationship literature argues that long lasting relationships are a source of competitive advantage (Håkansson and Snehota, 1995). There is evidence of how employees' satisfaction, motivation and commitment have positive influence in customer satisfaction, loyalty and retention, leading to higher firm's productivity (Kaplan and Norton, 1996, 2004). www.ejkm.com ©Academic Conferences Ltd 12 Maria do Rosário Cabrita and Jorge Landeiro Vaz.

## 2.7 ORGANIZATIONAL PERFORMANCE

Organizational performance is a recurrent theme in various domains of management, becoming an important concept in strategic management because performance improvement is the time test of any strategy (Schendel and Hofer, 1979). Based on the perspective of organizational effectiveness, Venkatraman and Ramanujam (1986) circumscribed the concept of organizational performance. According to the authors organizational performance is a subset of organizational effectiveness. The narrowest conception of organizational performance considers the use of financial indicators (e.g., sales growth, return on investment and return on equity) while the broader concept of organizational performance includes emphasis on indicators of operational performance (i.e.,

non-financial market share, customer loyalty, brand image, tire with long suppliers, etc). We consider in our study both aspects of performance (i.e., financial and operational indicators).

## 2.8 VALUE CREATION

Intellectual capital refers to the intellectual assets from a strategic and global perspective (Viedma, 2002). We argue that, from a strategic perspective, intellectual capital is used to create and apply knowledge to enhance firm value. Value creation is at the heart of strategic management and the rationale of intellectual capital is its ability to create value. Thus, intellectual capital and strategy are intricately woven. In this sense, a perspective based on the intellectual capital provides a more holistic view of the firm and its value, driving and nurturing the strategy. Nevertheless, given the uniqueness of each firm's configuration of knowledge characteristics and the idiosyncrasies of the firm's history, it does suggest that there are a variety of routes to success.

Intellectual capital is a matter of creating and sup-orting connectivity between all sets of expertise, experience and competences inside and outside the organization. The "value platform" model explains in an illustrative way the importance of a balanced intersection between the three dimensions. The contribution of this model is to show that: (i) the organizational value is created in the interaction of the three dimensions and; (ii) the intersection area increases, as the three dimensions interact.

## 2.9 INDIVIDUAL CAPITAL

### 2.9.1 Individual experience

In Bontis' (2001) point of view, intellectual experience helps to sustainable competitive advantage. This capital acts follows the principles of "economy of abundance"; that is to say using this capital not only doesn't diminish its value, but also adds on it. Generally speaking, the individual experience is like the muscles of a body; it goes dead when not being used (Cohen *et al.*, 1993). Chaharbaghi and Cripps (2006) point out to the idea that individual experience is the major sustainable motion power of the organizational performance that reflects the real value of the organization better than anything else. Kujansivu and Lönnqvist (2007) in an article titled "Research on Value of Efficiency of Individual experience" explain that the individual experience is critically important for competitiveness of the companies, regardless of the type of the industry; it is even more important for knowledge based companies, as their resources are mostly intangible.

Lu *et al.* (2009) in their "Ability & Efficiency of Individual experience in Taiwan's Semi-Conductor Manufacturing Companies" discuss the importance of adding on the company value through managing individual experience in intensively competitive environment. Using non-parametrical boundary methods of data development analysis they concluded that performance of the individual experience must be regarded as the key element of achieving broader innovations and gaining competitive advantages.

### 2.9.2 Social network

Chang *et al.* (2008) in their "The Effect of Alliance Experience and Intellectual Capital on the Value Creation of International Strategic Alliances" used an example of US companies to study the effects of social network and experience of unity, and the counteraction of these two on creating international strategic unity values. They concluded that the companies with higher levels of social network gain larger wealth interests. There is also a positive and significant counteraction between social network and experience of unity. Muammer and Sitki (2008) in their "Impact of social network on Exportation Performance: Research on the Turkish Automotive Supplier Industry" stress that the social network in a concept indicating that nonfinancial capital creates value more than financial capital. Therefore, business companies can create more value through developing employee social networking. The authors, aiming to determine the effects of accumulating social network of the companies on the export performance of Turkish automobile parts industry, studied 107 companies active in this field and concluded that accumulating social net work has a remarkable effect on export performance of the companies. Their research specifically indicated that export performance of the business companies enjoying larger social network in terms of supplier, customers, and clients, improve better that the other companies. Numerous evidences show that there is a positive relationship between the social network and performance of the companies.

### 2.9.3 Individual skills

Bontis (1998) and Bontis *et al.* (2000) researches in Malaysia show that there is a positive correlation between the individual skills and performance of the industries. Individual skills, regardless of the nature of the industry, affect the performance of the company.

Drucker (1999) in his study in the Spanish manufacturing industries found that most of the manufacturing companies that have employed the skilled work force had better performance than those that had semi-skilled and non-skilled employees. John Kenneth Galbraith in 1969 (Feiwal, 1975; Nick, 1998), in their study on the performance of the manufacturing companies in the Portuguese state, concluded that most of the companies with skilled workforce were performing better in the market than the companies with unskilled workforce. Roos and Roos (1997) in their study on productivity and competitiveness on the global market found out that the organizations that employed skilled workers had an edge over the companies with unskilled workforce.

### 2.9.4 Structural capital

Structural capital is important, because the market value and price of the company stocks do not depend only on the tangible properties; they rather depend on intangible properties such as the sum of patents, concepts, computer and management systems, relationship with customers and suppliers which involve the brand, reputation and trademarks.

### 2.9.5 Sum of patents

For example Lev (2001) findings show that about 80% of the companies' market value is affected by the market value of their sum of patents. Kujansivu and Lönnqvist (2005) evaluated the concepts of the 11 sizable industries in Finland. The results showed that the welfare companies have benefited from their concepts more than the others. Chen (2005) measured the patterns in Malaysian banks. This research showed that "Hong Kong Bank" despite of having less physical capital than "May Bank", acted as the most efficient local bank due to enjoying a bigger coefficient of patterns. Appuhami (2007) evaluated the effects of the computer and management systems on Thailand's stock market. The results showed that there is a significant relationship between the companies' computer and management systems and growth of their stocks. Chin *et al.* (2005) studied the relationship between the policies, market value, and financial performance of Taiwan's stock brokers, and applying the regression model showed that increasing policies of the companies improves the financial performance and increases their market value.

Findings are indicative of the importance of trademarks approaches as means of confronting new challenges in the public sector. The experience achieved through case studies provides a practical support. This study provides a ground to understand how Spanish public organizations measure and manage their trademarks. In this sense, the first step is defining and promoting strategic goals of the organization and identifying important intangibles related to these goals. After that, a series of indexes is defined and developed for each intangible. State director's deal with intangible concepts; yet, there is no orderly method for identifying, measuring, and presenting such concepts.

## RESEARCH DESIGN AND METHODOLOGY

### 3.0 INTRODUCTION

The chapter discusses the research methods adopted when conducting the study. Why the design was applicable.

### 3.1 RESEARCH DESIGN

The research team adopted qualitative research in investigating the effect of performance management systems, employee motivation and job design on employee commitment to the organization. Qualitative research is concerned with offering specialized techniques for obtaining in depth responses about what people think, do and feel (Mugenda, 2006). It enables researchers to gain insights into attitudes, beliefs, motives and behaviors of the target population and gain an overall better understanding of the underlying processes. The research is based on an initial literature review followed by in depth data collection.

### 3.2 RESEARCH SAMPLE

The research team used purposive sampling where the aim was to find data whose experience and context enables them to give informative and knowledgeable insights on the topic of the research.



A few empirical studies on the related topics (effect of motivation on performance, impact of job enrichment, rotation and enlargement on employee satisfaction) were chosen as the research sample having the same outcome as employee commitment.

## RESEARCH FINDINGS AND RESULTS

### 4.0 INTRODUCTION

Chapter four is about the information collected from the study in various books, journals, news papers, articles, etc. it is the findings of the study, trying to answer questions that relates to the objectives raised in chapter one.

From the findings in the empirical study, the following information was evident:

#### 4.1 RELATIONSHIP BETWEEN INTELLECTUAL EXPERIENCE AND PERFORMANCE

Bontis' (2001) pointed out that, intellectual experience helps to sustainable competitive advantage. Chaharbaghi and Cripps (2006) in their study concluded that individual experience is the major sustainable motion power of the organizational performance that reflects the real value of the organization better than anything else. Kujansivu and Lönnqvist (2007) in an article titled "Research on Value of Efficiency of Individual experience" explained that the individual experience is critically important for competitiveness of the companies, regardless of the type of the industry; it is even more important for knowledge based companies, as their resources are mostly intangible.

Lu *et al.* (2009) in their "Ability & Efficiency of Individual experience in Taiwan's Semi-Conductor Manufacturing Companies" found out that the importance of adding on the company value through managing individual experience is to intensify competitive advantage.

#### 4.2 RELATIONSHIP BETWEEN EXTERNAL STRUCTURE AND PERFORMANCE

Pew *et al.* (2007) studied the relationship between the relationship with customers and financial performance in Singapore's stock market based on three financial indexes (interest of each share, shareholders' return rate, and annual return rate). The results showed that there is a positive relationship between the good relationship with customers and the financial performance. There is also a significant difference between the coefficients of relationship with suppliers in different industries. Yalama and Coskun (2007) studies show that the efficiency of the value-added intellectual capital has an effect of 61.3% on profitability of banking companies in Istanbul stock market. Also, Kamath and Bharathi (2008) showed that amongst all the elements of intellectual capital, human capital has a major effect on profitability, efficiency, and value of pharmaceutical companies in India. Chen *et al.* (2004) showed that there is a relationship between brand, and the business performance of the companies. Using multi-variable regression, Wang (2008) proved that there is a positive relationship between the external structures and the market value of American electronic companies. Yolanda (2010) conducted a research titled "trademarks models in Spanish public sector" in 2010, aiming to help public organizations in the process of developing their capability of identifying, measuring, and managing their intangible properties.

#### 4.3 RELATIONSHIP BETWEEN SOCIAL NETWORK AND PERFORMANCE

From the empirical literature study, Chang *et al.* (2008) in their "The Effect of Alliance Experience and Intellectual Capital on the Value Creation of International Strategic Alliances," concluded that the companies with higher levels of social network gain larger wealth interests. Muammer and Sitki (2008) in their "Impact of social network on Exportation Performance: Research on the Turkish Automotive Supplier Industry" stressed that the social network in a concept indicated that nonfinancial capital creates value more than financial capital. Therefore, business companies can create more value through developing employee social networking.

#### 4.4 RELATIONSHIP BETWEEN INDIVIDUAL SKILLS AND PERFORMANCE

From the empirical literature, Bontis (1998) and Bontis *et al.* (2000) researches in Malaysia showed that there is a positive correlation between the individual skills and performance of the industries. Individual skills, regardless of the nature of the industry, affect the performance of the company. Also Drucker (1999) in his study in the Spanish manufacturing industries concluded that most of the manufacturing companies that have employed the skilled work force had better performance than those that had semi-skilled and non-skilled employees. John Kenneth Galbraith in 1969 (Feiwal, 1975; Nick, 1998), in their study on the performance of the manufacturing companies in the Portuguese state, concluded that most of the companies with skilled workforce were performing better in the market than the companies with unskilled workforce. Roos and Roos (1997) in their study on productivity and competitiveness on the global market found out that the organizations that employed skilled workers had an edge over the companies with unskilled workforce.

#### 4.5 RELATIONSHIP BETWEEN STRUCTURAL CAPITAL AND PERFORMANCE

Structural capital is important, because the market value and price of the company stocks do not depend only on the tangible properties; they rather depend on intangible properties such as the sum of patents, concepts, computer and management systems, relationship with customers and suppliers which involve the brand, reputation and trademarks.

#### 4.6 RELATIONSHIP BETWEEN SUM OF PATENTS AND PERFORMANCE

From the empirical review, Lev (2001) findings showed that about 80% of the companies' market value is affected by the market value of their sum of patents. Kujansivu and Lönnqvist (2005) evaluated the concepts of the 11 sizable industries in Finland. The results showed that the welfare companies have benefited from their concepts more than the others. Chen (2005) measured the patterns in Malaysian banks. The result showed that "Hong Kong Bank" despite of having less physical capital than "May Bank", acted as the most efficient local bank due to enjoying a bigger coefficient of patterns. Appuhami (2007) evaluated the effects of the computer and management systems on Thailand's stock market. The results showed that there is a significant relationship between the companies' computer and management systems and growth of their stocks. Chin *et al.* (2005) studied the relationship between the policies, market value, and financial performance of Taiwan's stock brokers, and applying the regression model showed that increasing policies of the companies improves the financial performance and increases their market value.

#### 4.7 RELATIONSHIP BETWEEN EXTERNAL CAPITAL AND PERFORMANCE

From the empirical review, Pew *et al.* (2007) studied the relationship between the relationship with customers and financial performance in Singapore's stock market based on three financial indexes (interest of each share, shareholders' return rate, and annual return rate). The results showed that there is a positive relationship between the good relationship with customers and the financial performance. There was also a significant difference between the coefficients of relationship with suppliers in different industries. Yalama and Coskun (2007) studies showed that the efficiency of the value-added external capital has an effect of 61.3% on profitability of banking companies in Istanbul stock market. Also, Kamath and Bharathi (2008) in their study showed that amongst all the elements of intellectual capital, human capital has a major effect on profitability, efficiency, and value of pharmaceutical companies in India. Chen *et al.* (2004) showed that there is a relationship between brand, and the business performance of the companies. Using multi-variable regression, Wang (2008) proved that there is a positive relationship between the external structures and the market value of American electronic companies. Yolanda (2010) conducted a research titled "trademarks models in Spanish public sector" in 2010, aiming to help public organizations in the process of developing their capability of identifying, measuring, and managing their intangible properties. The findings are indicative of the importance of trademarks approaches as means of confronting new challenges in the public sector.

## 5. CONCLUSION

The finding from the empirical literature reviewed, showed that the intellectual capital are of paramount importance in the organizational performance in the manufacturing sector. The information obtained in the study showed that there is positive relationship between individual capitals which includes: employee's ability to take actions under various situations which involves explicit knowledge, skills, experiences, value-related judgment, and social network.

The study also pointed out that there is positive relationship between internal capital/competence with organizational performance in the manufacturing sector. The elements in the external competence considered were: sum of patents, concepts, patterns, computer and management systems. The result showed that the organizations that put into consideration these factors yield better performance than those that do not.

The other variable that was investigated was external capital/external structure which consisted of relationships with customers, suppliers, brand, reputation and trademarks. The findings indicated that the organizations that embrace good customers and suppliers relationship happened to perform better than those

that did not. The organizations with outstanding brands, good reputation in the market place performed better than the rest and the institutions with well established trademarks performed better than those that have not got recognition in the market. In conclusion therefore we may confidently say that organizations in order to gain competitive edge over their competitors, they must embrace intellectual capital in order to survive in the current turbulent market.

## 6. RECOMMENDATIONS

Since the reviewed literature was from European countries, the replica of the study should be done in African nations particularly in Kenya. The management should embrace intellectual competence in order to improve the organizational performance in the market.

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## THE ANALYSIS AND DERIVATION OF A NEW FRAMEWORK TO INVEST IN GOLD

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**ABSTRACT**

*This paper focuses on the saving opportunities to common men. As a common man is having less money, he prefers to have a saving account with bank to put/invest his savings. Generally the saving schemes of banks are having a fixed rate or any defined rate of interest, and the people are getting returns on their savings based on these interest rates. In this paper it is studied that: Are these schemes justifying their relativity with the increasing inflation? And it is found that they do not. People can earn more profits if they invest their savings in commodities other than these savings products of Banks. So gold is taken as the central element and the investment of a particular amount say ₹1,000.00 is studied with respect to gold as well as saving scheme of bank over the period of 10 years, and it is found that the gold is much better investment option as compared to a fixed rate saving account. Now the price of gold is so high that a poor and even a normal person cannot invest in it. Therefore to make gold an opportunity to invest for everyone, a saving bank account scheme named 'Sona Bachat Bank' is designed in this paper. This scheme allows a person to invest any small amount in gold and provides returns to the investors not on the basis of any defined rate of interest but on the basis of gold prices. This scheme makes a perfect relationship between a person's returns and the fluctuating inflation. So it is a comparative study which is the basis of an innovation of a new saving scheme i.e. "Sona Bachat Bank".*

**KEYWORDS**

Saving Schemes, Interest Rates, Inflation, Gold Prices.

**INTRODUCTION**

From the beginning, all around the world, households have saved money as insurance against emergencies, for religious and social obligations, for investment and for future consumption. The perception of gold has gradually shifted from that of a commodity to that of money of the highest quality. Gold has the international currency code XAU, is traded by banks mostly at their currency desk (and not the commodity desk), and continues to be held as a reserve by global central banks. This confirms the monetary importance of gold.

The importance the poor attach to savings is also demonstrated by the many ingenious ways they find to save. But these informal mechanisms fail to meet the needs of the poor in a convenient, cost-effective and secure manner. It is clear that poor people want, need and do indeed save. But it is also evident that poor people are facing an extremely risky environment when they save in the informal sector. Thus, it is clear that when discussing the risk to poor people's savings, this has to be evaluated on a relative basis, i.e. to check the saving scheme's relativity to the risk factor. Consider that a risk free framework is provided to the investors.

The term "risk-free" is the mother of all oxymoron's. There has never been anything like a risk-free investment, nor there ever such a thing. Risk can never be eliminated – it can only be transferred or minimized.

Many researchers found the gold as safe heaven and the hedge against inflation. "Hedge is defined as an asset that is negatively correlated (uncorrelated) with another asset or portfolio on average". "Safe haven is defined as an asset that is negatively correlated (uncorrelated) with another asset or portfolio in certain periods only, e.g. in times of falling stock markets, recession etc. In their study Kelechi Adibe and Fan Fei (2009) found that "Gold is the safe haven on the financial market", "gold goes up when everything else going down" and they also described gold as an inflation hedge. Evidence of the potential for gold to act as a safe haven asset was also presented by Baur and Lucey (2009). Their results show that gold tends to hold its value if stock markets experience extreme negative returns in Germany, the UK and the US. McCown and Zimmerman (2006) examine a number of characteristics of gold as a financial asset. They find evidence of the inflation-hedging ability of gold. Their analysis also suggests that gold shows the characteristics of a "zero beta asset", bearing no market risk, while they find the returns on gold over a 33 year period (1970-2003) are just slightly higher than the mean return on Treasury Bills. Capie, Mills and Wood (2005) analyze the role of gold as a hedge against the dollar, finding evidence of the exchange-rate hedging potential of gold. Other examples of studies that examine the financial characteristics of gold include Faugere and Van Erbach (2006), Lucey et al (2006) and Sherman (1982). Kolluri (1981), Laurent (1994) and Ghosh et al (2002), Gorton and Rouwenhorst (2006), Ranson and Wainwright (2005) have all argued that gold could still be a good long-run inflation hedge. The other most crucial aspect is the 'returns' on the savings/investment made. Any scheme is said to be perfect if it is designed in relation to the fluctuating inflation, because this relativity will provide security against increasing inflation.

**OBJECTIVES OF THE STUDY**

- 1) To compare the returns on savings of ₹ 1,000, on the basis of 'half yearly gold prices' to that of a 'bank saving account' over a period of 10 years (2003 – 2012).
- 2) To derive a new saving scheme based on the more effective alternative found in first objective of this study.
- 3) To compare the 'new scheme' derived in the second objective to the 'less effective alternative' found in the first objective of this study by taking ₹ 1,000 as savings over a period of 10 years (2003 – 2012).

**ASSUMPTIONS**

The studies are made in Indian context assuming that the investor has invested ₹ 1000.00 for 10 years (from January 2003 to December 2012) and the suggested scheme is implemented in the Banking Sector in India.

**ACCOMPLISHMENT OF FIRST OBJECTIVE**

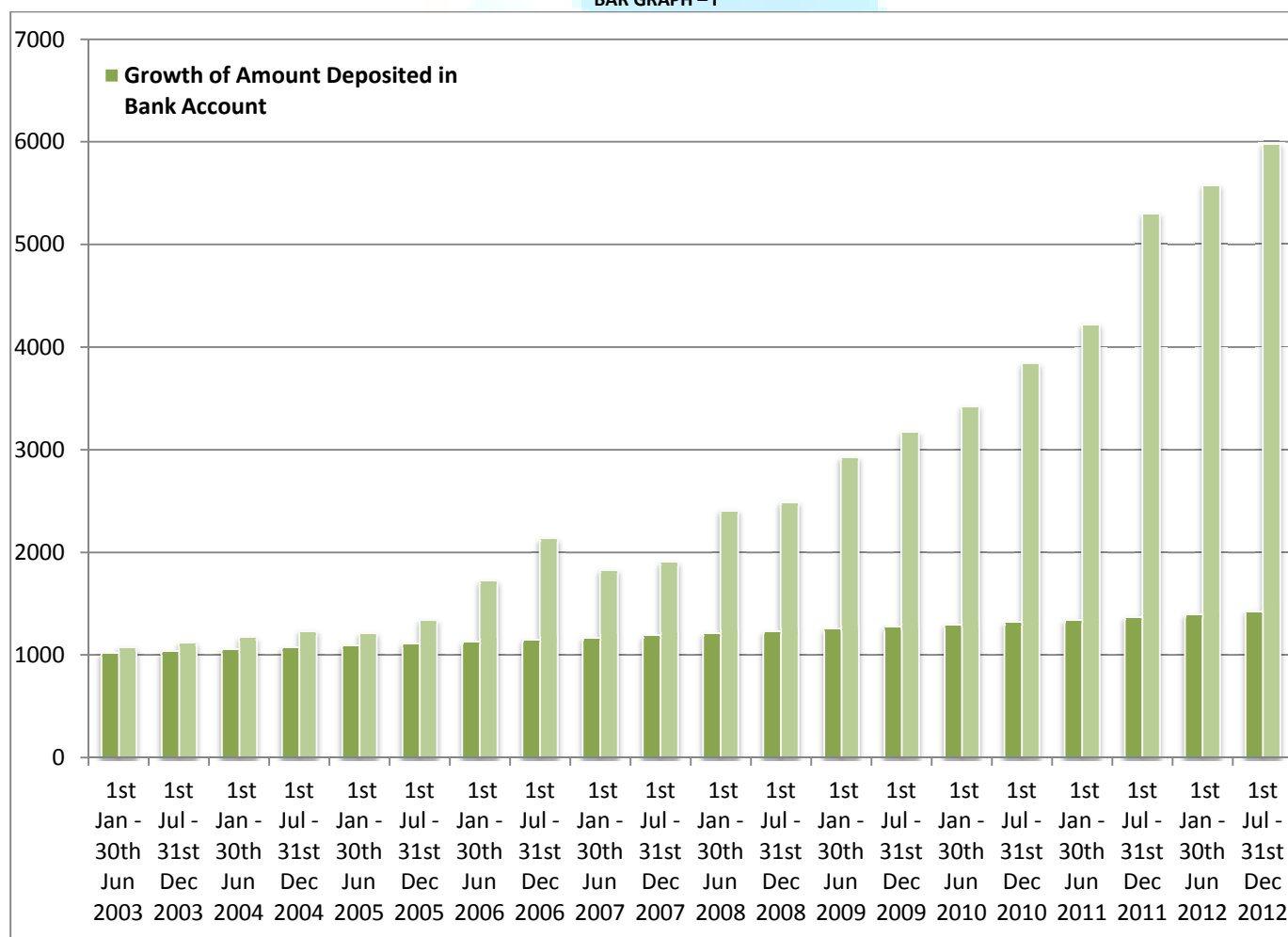
The comparative study between investment of ₹ 1000 over a period of 10 years in a bank's saving account and in gold depicts that the earnings in saving bank account is 42.52% i.e. ₹ 425.23 and earnings in gold investment is 497.67% i.e. ₹ 4976.71 and the total available amount after 10 years to the investor in bank is ₹ 1425.23 whereas in gold investment the total available amount after 10 years is ₹ 5976.71. It is shown in the table given below.

## CASE STUDY – I: COMPARATIVE GROWTH OF ₹ 1000.00 BY (1) DEPOSIT IN SAVINGS BANK ACCOUNT AND (2) INVESTMENT IN GOLD DURING LAST 10 YEARS (HALF YEARLY BASIS)

Period	Growth as per Applicable Rate of Interest in Banks in India					Growth as per investment in Gold during the applicable period					
	Principal Amount available during half year	Applicable ROI per Annum	Growth of Amount Deposited in Bank	Interest Amount	Simple Interest – Bank	Average Gold Price per Gram (Dec. 2002 ₹ 495.65)	Principal Amount available during half year	%age Increase in Gold Price	Growth of Amount Invested in Gold	Interest	Simple Increase in Gold Price
1st Jan - 30th Jun 2003	1000.00	*3.50	1017.50	17.50	17.50	532.67	1000.00	7.47	1074.70	74.70	74.70
1st Jul - 31st Dec 2003	1017.50	3.50	1035.31	17.81	17.50	555.30	1074.70	4.25	1120.37	45.67	42.50
1st Jan - 30th Jun 2004	1035.31	3.50	1053.42	18.12	17.50	580.75	1120.37	4.58	1171.69	51.31	45.80
1st Jul - 31st Dec 2004	1053.42	3.50	1071.86	18.43	17.50	611.33	1171.69	5.27	1233.44	61.75	52.70
1st Jan - 30th Jun 2005	1071.86	3.50	1090.62	18.76	17.50	599.57	1233.44	-1.92	1209.75	-23.68	-19.20
1st Jul - 31st Dec 2005	1090.62	3.50	1109.70	19.09	17.50	663.17	1209.75	10.61	1338.11	128.35	106.10
1st Jan - 30th Jun 2006	1109.70	3.50	1129.12	19.42	17.50	853.96	1338.11	28.77	1723.08	384.97	287.70
1st Jul - 31st Dec 2006	1129.12	3.50	1148.88	19.76	17.50	1057.55	1723.08	23.84	2133.87	410.78	238.40
1st Jan - 30th Jun 2007	1148.88	3.50	1168.99	20.11	17.50	904.28	2133.87	-14.49	1824.67	-309.20	-144.90
1st Jul - 31st Dec 2007	1168.99	3.50	1189.44	20.46	17.50	943.59	1824.67	4.35	1904.04	79.37	43.50
1st Jan - 30th Jun 2008	1189.44	3.50	1210.26	20.82	17.50	1193.27	1904.04	26.46	2407.85	503.81	264.60
1st Jul - 31st Dec 2008	1210.26	3.50	1231.44	21.18	17.50	1234.13	2407.85	3.42	2490.20	82.35	34.20
1st Jan - 30th Jun 2009	1231.44	3.50	1252.99	21.55	17.50	1449.81	2490.20	17.48	2925.49	435.29	174.80
1st Jul - 31st Dec 2009	1252.99	3.50	1274.92	21.93	17.50	1573.23	2925.49	8.51	3174.45	248.96	85.10
1st Jan - 30th Jun 2010	1274.92	3.50	1297.23	22.31	17.50	1695.56	3174.45	7.78	3421.42	246.97	77.80
1st Jul - 31st Dec 2010	1297.23	3.50	1319.93	22.70	17.50	1901.93	3421.42	12.17	3837.80	416.39	121.70
1st Jan - 30th Jun 2011	1319.93	3.50	1343.03	23.10	17.50	2090.73	3837.80	9.93	4218.90	381.09	99.30
1st Jul - 31st Dec 2011	1343.03	**4.00	1369.89	26.86	20.00	2628.03	4218.90	25.7	5303.15	1084.26	257.00
1st Jan - 30th Jun 2012	1369.89	4.00	1397.29	27.40	20.00	2765.05	5303.15	5.21	5579.45	276.29	52.10
1st Jul - 31st Dec 2012	1397.29	4.00	1425.23	27.95	20.00	2962.05	5579.45	7.12	5976.71	397.26	71.20

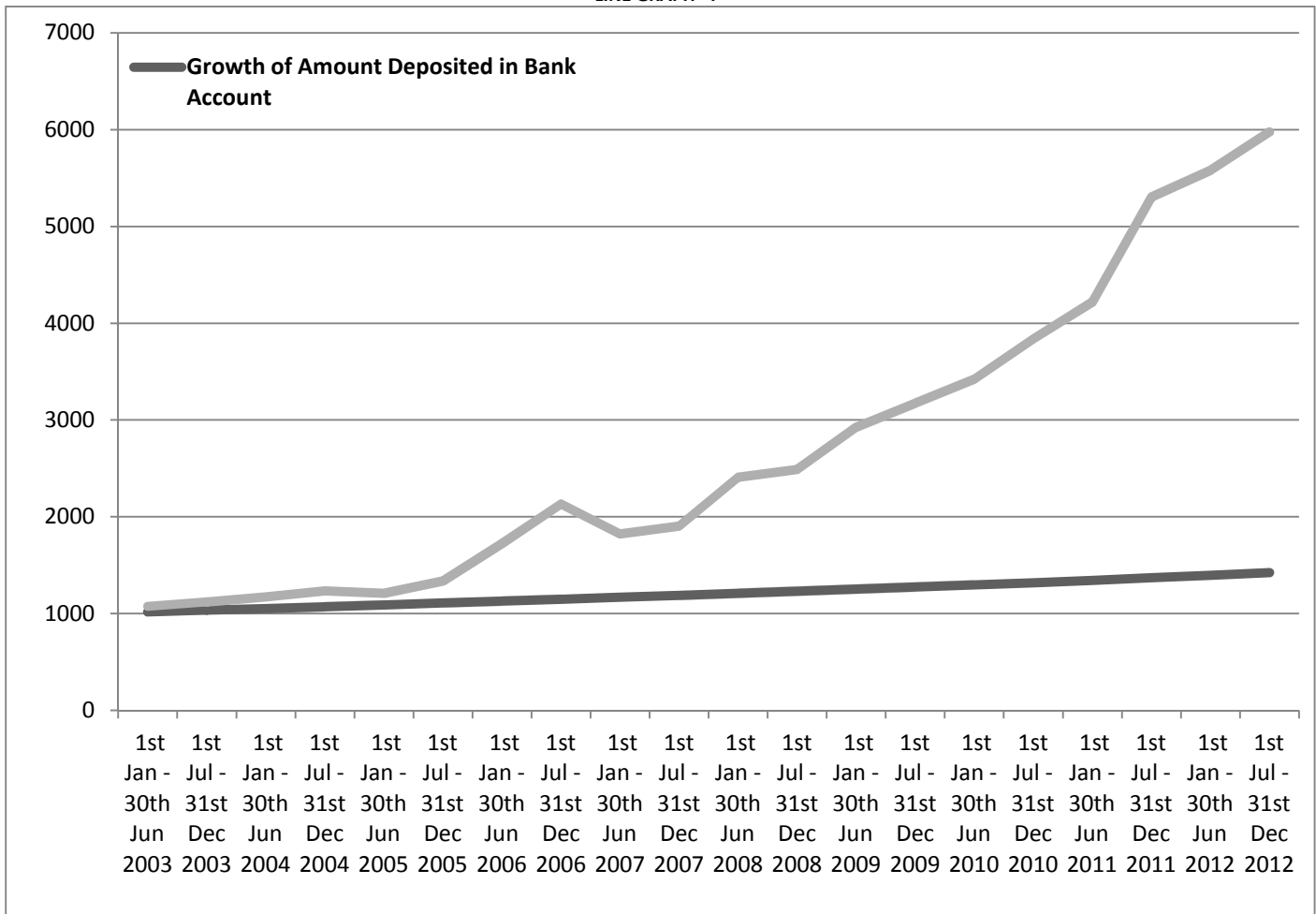
- The Rate of Interest at 3.5 % has been fixed by RBI from March 2003, though we have taken it from January 2003 for calculation purpose.
- \*\*The RBI has enhanced the rate of interest from 3.5 % to 4.00 % w.e.f. 03.05.2011, though we have taken it from July 2011 for the purpose of calculation.
- The RBI has further deregulated the rate of interest on SB deposit but all the nationalized banks are paying @ 4.00 % as usual.
- The Histogram of growth of ₹ 1000.00 with bank in SB account and investment of ₹ 1000.00 in Gold is given below in the form of Bar Graph - I and Line Graph - I for the purpose of clarity. Half yearly return (income) on ₹ 1000.00 by (1) deposit in SB account with Bank and (2) investment in Gold over a period of 10 years is given in Line Graph - II

BAR GRAPH – I



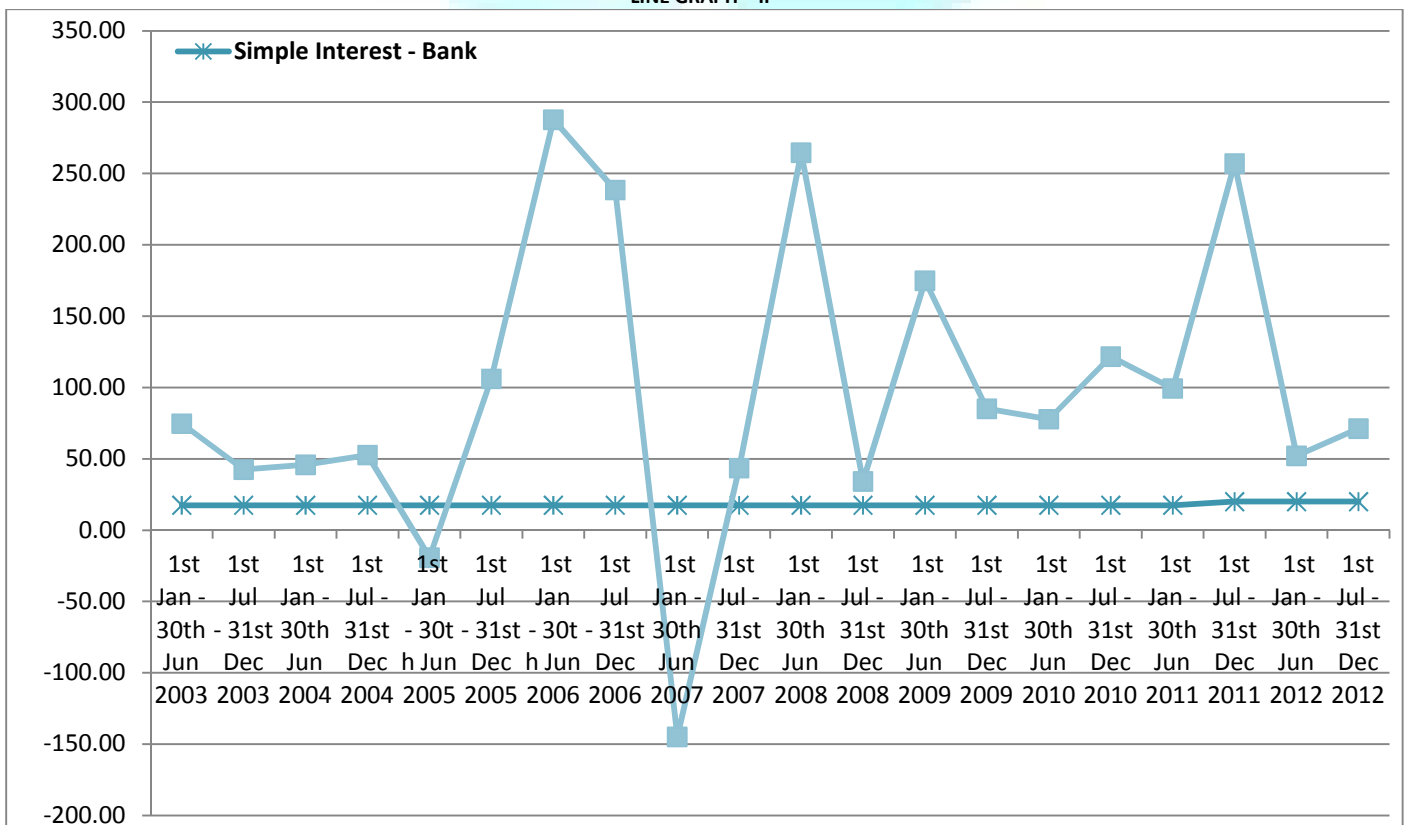
Graphical representation of comparative growth of ₹ 1000.00 by (1) deposit in SB account with the Bank and (2) investment in Gold over a period of 10 years (1<sup>st</sup> januray 2003 to 31<sup>st</sup> december 2012)

LINE GRAPH - I



Graphical representation of comparative growth of ₹ 1000.00 by (1) deposit in SB account with the Bank and (2) investment in Gold over a period of 10 years (1<sup>st</sup> januray 2003 to 31<sup>st</sup> december 2012)

LINE GRAPH - II



Graphical representation of comparative half yearly return (income) on ₹ 1000.00 by (1) deposit in SB account with the Bank and (2) investment in Gold over a period of 10 years (1<sup>st</sup> januray 2003 to 31<sup>st</sup> december 2012)

**ACCOMPLISHMENT OF SECOND OBJECTIVE**

The studies in first objective clearly depicts that the Returns on Investment in gold is more than 10 times higher than the return in saving account with bank. But a common man having low savings is not in a position to invest in gold so as to harvest the higher returns on his savings, and he is forced to invest in low earning schemes.

It is necessary to derive a saving scheme linked with the price of gold i.e. more effective alternative found in first objective of this study.

Accordingly a new scheme is hereby designed and termed as 'Sona Bachat Bank'

DESIGN OF NEW SCHEME			
S No.	Particulars	Description	
1	Scheme Name	SONA BACHAT BANK	
2	Mission	The Scheme aims at providing adequate opportunity to all sections of society, mainly to the lower income group who can afford small savings only & have lack of financial knowledge to deploy their savings to derive maximum return	
3	Eligibility	Any citizen of India who has attained the age of majority is eligible to open the account under the scheme. The account in the name of minor may be opened under guardianship as per applicable norms. Joint accounts are permissible under the scheme. Non Resident Indians are not eligible under the scheme.	
4	Procedure	The scheme is operational as Savings Bank Account.	
5	Mode of deposit	The account is eligible for all type of transactions in Banking Operations. The account may be operated by the customer as per his convenience	
6	Calculation of Return	(I) Saving Account in operation for six months is eligible for return. The account is not eligible for return in case it is closed during the currency of six months (II) Minimum monthly balance of ₹ 1000.00 during the period covered for calculation of return with cap of maximum average deposit for six months up to ₹5 lac and / or maximum deposit of ₹ 10 lac on any month. The deposit amount beyond the prescribed limit will not be reckoned for calculation of return on investment. (III) Minimum available balance on any day in the account during the month will be treated as the balance of the month eligible for return	
7	Rate of Interest	Nil	
8	Area of Operation	The scheme is operational in all Banks.	
9	Return on Investment	(I) No assured return. The Return is linked with the 'Average of daily gold price' during last six months. (II) RBI will declare the price of gold on daily basis which will be the base price for banks. The return on savings bank account will be calculated on six month average percentage Increase / decrease in gold price.	
10	Bank service charges	10% of half yearly average increase in gold price in percentage term, subject to minimum 1% of deposit amount in case the average increase in gold price is very low or nil or negative	
11	Periodicity of Return	Return will be paid on half yearly basis through credit to the concerned account on the next working day of completion of half year. The half year for the purpose is reckoned as 1 <sup>st</sup> January to 30 <sup>th</sup> June and 1 <sup>st</sup> July to 31 <sup>st</sup> December	
12	Method of Calculation of Return	Return will be calculated on the basis of daily average price of the gold during the six month period. Increase in daily average gold price during six month over the daily average gold price of previous six months in percentage basis (net of bank service charges) will be the rate of return for the period.	
		Example - I	
		Base price of Gold as on30.06 2012 (Average price of previous half year)	₹ 30000.00
		Average daily price of Gold during the applicable period of 6 months ( 01.07.2012 to 31.12.2012	₹ 33000.00
		Total increase in gold price	₹ 3000.00
		Percentage increase in gold price over base price	10 %
		Less Service charges of Bank (10% of percentage increase in gold price)	10 % of 10 % = 1 %
		Account eligible for return on eligible deposit	9 %
		Example II	
		Base price of Gold as on30.06 2012	₹ 30000.00
		Average daily price of Gold during the applicable period of 6 months ( 01.07.2012 to 31.12.2012	₹ 30000.00
		Total increase in gold price	₹ 0.00
		Percentage increase in gold price over base price	0 %
		Less Service charges to be claimed by the bank(10% of percentage increase in gold price, subject to minimum of 1% of deposit amount)	1 % (Minimum)
		Account eligible for return on eligible deposit	- 1 % (To be recovered from the customer's account)
13	Statutory Requirements	(I)Gold price is required to be declared by RBI at the close of every working day at 4 PM. (II) Bank is required to maintain gold stock not less than equal to the total deposit of previous day in “SONA BACHAT BANK” on daily basis. It is clarified here that the bank should have gold equal to the amount of deposit in the scheme on any day. Physical purchase of gold is not essential. The booking of gold stock with RBI is sufficient. (III) Bank is required to maintain the daily price of gold declared by RBI in the System and link it for calculation of return on the scheme. (IV) The scheme will be made operative from the first day of the six month period to be considered for return on deposits. (V) The RBI will give the average notional price of gold for the previous half year to be considered as base price for the first half year.	
14	KYC & Other terms & Conditions	As applicable on the existing Savings Bank Account Scheme	

**ACCOMPLISHMENT OF THIRD OBJECTIVE**

Now the less effective saving opportunity found in objective no. 1 i.e. Bank Saving Account is to be compared with the new scheme designed in our objective no. 2. The comparative study reveals that investment of ₹ 1000 in saving scheme with bank has given returns of 42.52% over a period of 10 years, whereas the

returns as per new scheme "Sona Bachat Bank" 420.62%. In simple terms the total available amount with the investor after 10 years with bank saving scheme is ₹ 1425.23 whereas it is equal to ₹ 5206.22 as per the new scheme Sona Bachat Bank. The investor has earned this much amount inspite of the fact that the investor has paid (₹ 5976.71\* – 5206.22\*\*) ₹ 770.49 to the bank as service charges. By paying these service charges he has transferred the maintenance risk to the bank.

\* Total amount earned if the investor invests ₹ 1000 for a period of 10 years in gold directly by buying it.

\*\* Total amount earned if the investor invests ₹ 1000 for a period of 10 years in Sona Bachat Bank.

The comparison between the existing saving schemes with banks and the Sona Bachat Bank is shown in the table below.

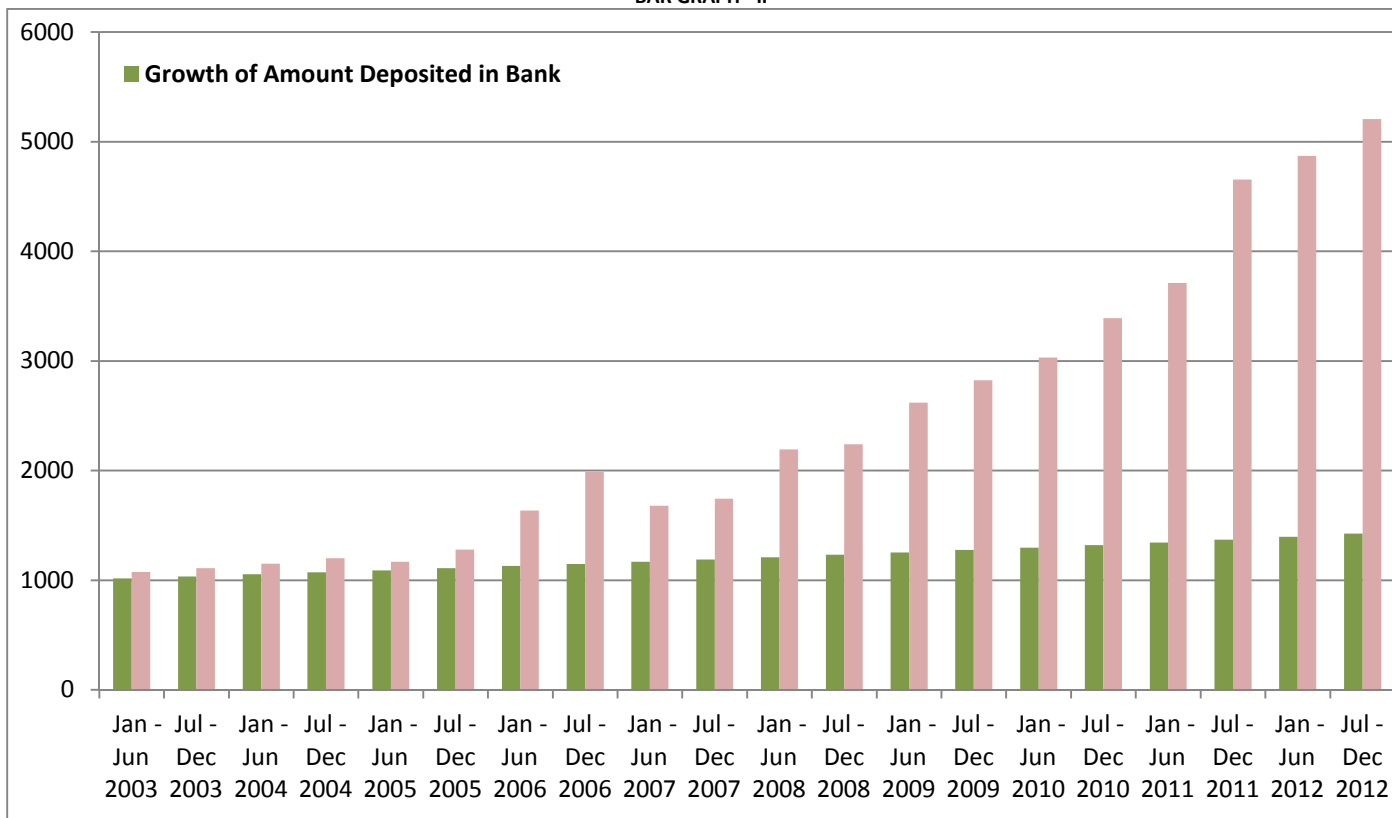
**CASE STUDY – II: COMPARATIVE GROWTH OF ₹ 1000.00 BY (1) DEPOSIT IN SAVINGS BANK ACCOUNT AND (2) DEPOSIT IN 'SONA BACHAT BANK' DURING LAST 10 YEARS (HALF YEARLY BASIS)**

Period	Growth as per Savings Bank Account with bank					Growth as per new scheme during the applicable period								
	Principal Amount available during half year	Applicable ROI per Annum	Growth of amount deposited in Bank	Interest Amount	Simple Interest - Bank	Average Gold Price per Gram (Dec. 2002 ₹ 495.65)	Principal Amount available during half year	%age Increase in Gold Price	Growth of investment in Gold	Bank Charges	Interest	Net Principal Amount available after Bank Charges	%age Increase in Gold Price	Growth of investment in suggested scheme
Jan - Jun 2003	1000.00	3.50	1017.50	17.50	17.50	532.67	1000.00	7.47	1074.70	10.00	74.70	1000.00	7.47	1074.70
Jul - Dec 2003	1017.50	3.50	1035.31	17.81	17.50	555.30	1074.70	4.25	1120.37	10.00	45.67	1064.70	4.25	1109.95
Jan - Jun 2004	1035.31	3.50	1053.42	18.12	17.50	580.75	1120.37	4.58	1171.69	10.00	51.31	1099.95	4.58	1150.33
Jul - Dec 2004	1053.42	3.50	1071.86	18.43	17.50	611.33	1171.69	5.27	1233.44	10.00	61.75	1140.33	5.27	1200.42
Jan - Jun 2005	1071.86	3.50	1090.62	18.76	17.50	599.57	1233.44	-1.92	1209.75	10.00	-23.68	1190.42	-1.92	1167.57
Jul - Dec 2005	1090.62	3.50	1109.70	19.09	17.50	663.17	1209.75	10.61	1338.11	10.61	128.35	1157.57	10.61	1280.38
Jan - Jun 2006	1109.70	3.50	1129.12	19.42	17.50	853.96	1338.11	28.77	1723.08	28.77	384.97	1269.77	28.77	1635.09
Jul - Dec 2006	1129.12	3.50	1148.88	19.76	17.50	1057.55	1723.08	23.84	2133.87	23.84	410.78	1606.32	23.84	1989.26
Jan - Jun 2007	1148.88	3.50	1168.99	20.11	17.50	904.28	2133.87	-14.49	1824.67	10.00	-309.20	1965.42	-14.49	1680.63
Jul - Dec 2007	1168.99	3.50	1189.44	20.46	17.50	943.59	1824.67	4.35	1904.04	10.00	79.37	1670.63	4.35	1743.31
Jan - Jun 2008	1189.44	3.50	1210.26	20.82	17.50	1193.27	1904.04	26.46	2407.85	26.46	503.81	1733.31	26.46	2191.94
Jul - Dec 2008	1210.26	3.50	1231.44	21.18	17.50	1234.13	2407.85	3.42	2490.20	10.00	82.35	2165.48	3.42	2239.54
Jan - Jun 2009	1231.44	3.50	1252.99	21.55	17.50	1449.81	2490.20	17.48	2925.49	17.48	435.29	2229.54	17.48	2619.26
Jul - Dec 2009	1252.99	3.50	1274.92	21.93	17.50	1573.23	2925.49	8.51	3174.45	10.00	248.96	2601.78	8.51	2823.20
Jan - Jun 2010	1274.92	3.50	1297.23	22.31	17.50	1695.56	3174.45	7.78	3421.42	10.00	246.97	2813.20	7.78	3032.06
Jul - Dec 2010	1297.23	3.50	1319.93	22.70	17.50	1901.93	3421.42	12.17	3837.80	12.17	416.39	3022.06	12.17	3389.85
Jan - Jun 2011	1319.93	3.50	1343.03	23.10	17.50	2090.73	3837.80	9.93	4218.90	10.00	381.09	3377.68	9.93	3713.08
Jul - Dec 2011	1343.03	4.00	1369.89	26.86	20.00	2628.03	4218.90	25.7	5303.15	25.77	1084.26	3703.08	25.7	4654.77
Jan - Jun 2012	1369.89	4.00	1397.29	27.40	20.00	2765.05	5303.15	5.21	5579.45	10.00	276.29	4629.00	5.21	4870.17
Jul - Dec 2012	1397.29	4.00	1425.23	27.95	20.00	2962.05	5579.45	7.12	5976.71	10.00	397.26	4860.17	7.12	5206.22

- The Rate of Interest at 3.5 % has been fixed by RBI from March 2003, though we have taken it from January 2003 for calculation purpose.
- \*\*The RBI has enhanced the rate of interest from 3.5 % to 4.00 % w.e.f. 03.05.2011, though we have taken it from July 2011 for the purpose of calculation.
- The RBI has further deregulated the rate of interest on SB deposit but all the nationalized banks are paying @ 4.00 % as usual.
- The deposit of ₹ 1000.00 in SB account has increased to ₹ 1425.23 during the tenure of 10 years, presuming that the depositor has not withdrawn the amount for a period of 10 years, i.e. increase of 42.52 %.
- The investment of ₹ 1000.00 in New Scheme has increased to ₹ 5206.22 during the tenure of 10 years i.e. increase of 420.62 %, as if the suggested scheme is operative in banks during the study period.
- The Histogram of deposit of ₹ 1000.00 with bank in SB account and investment of ₹ 1000.00 in Sona Bachat Bank is given in the form of Bar Graph – II and Line Graph – III separately on the next pages for the purpose of clarity.
- The comparative position of growth of ₹ 1000.00 in all the three schemes discussed in this paper namely: (1) Deposit in SB account with Bank, (2) Investment in Gold and (3) Investment in "Sona Bachat Bank" is given in the form of Line Graph – IV.

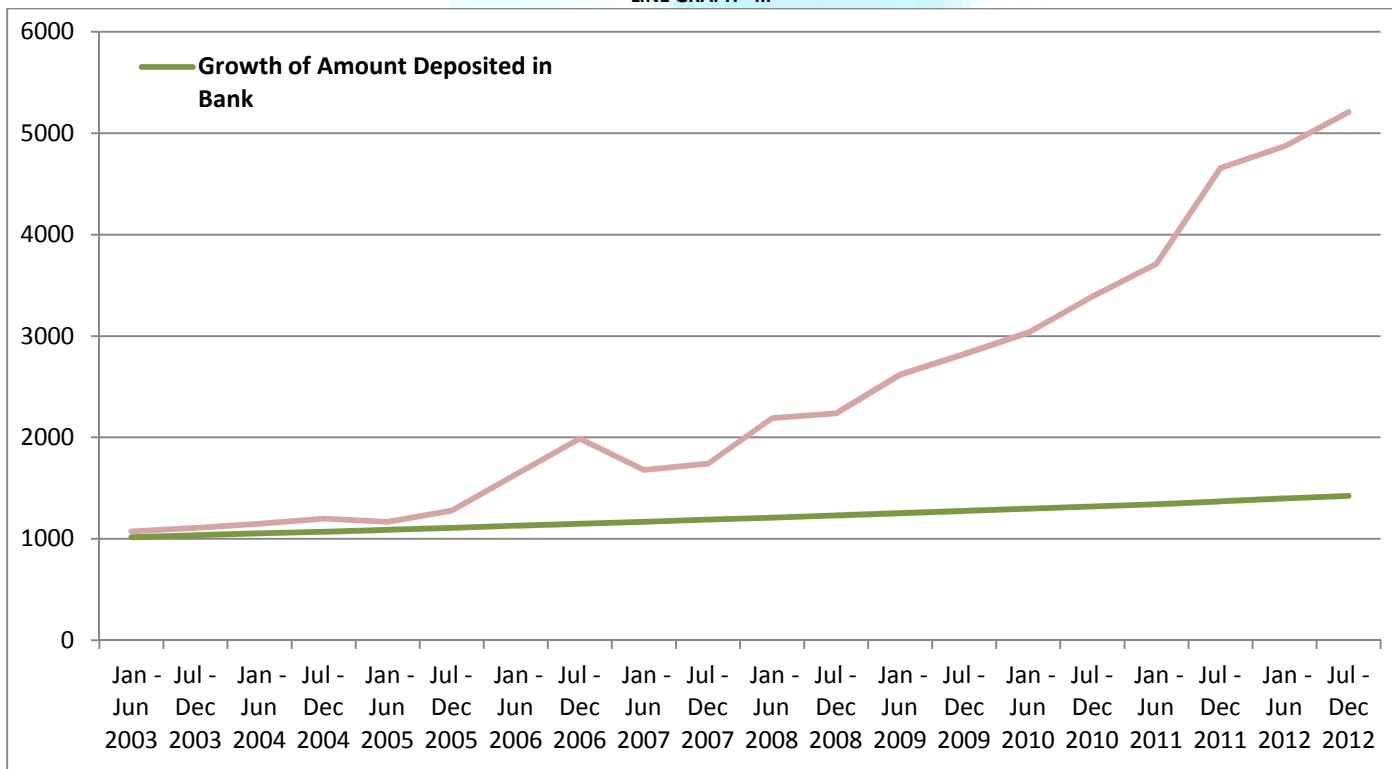


BAR GRAPH - II



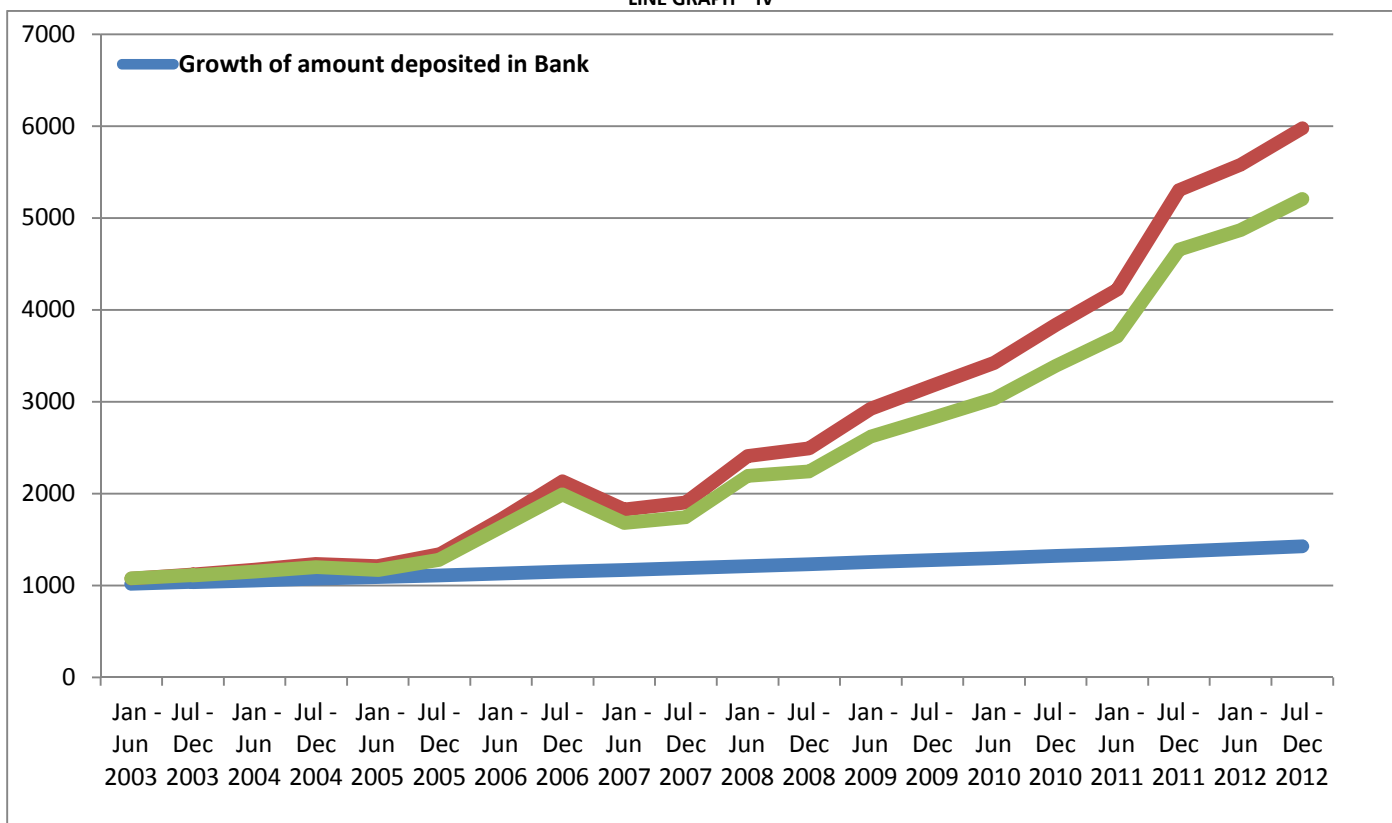
Graphical representation of comparative Growth of Rs. 1000.00 by (1) deposit in SB account with the Bank and (2) investment in 'Sona Bachat Bank' over a period of 10 years (1<sup>st</sup> January 2003 to 31<sup>st</sup> December 2012) as if the suggested scheme is in operation in Banks.

LINE GRAPH - III



Graphical representation of comparative Growth of Rs. 1000.00 by (1) deposit in SB account with the Bank and (2) investment in 'Sona Bachat Bank' over a period of 10 years (1<sup>st</sup> January 2003 to 31<sup>st</sup> December 2012) as if the suggested scheme is in operation in Banks.

LINE GRAPH – IV



Graphical representation of comparative Growth of Rs. 1000.00 by (1) deposit in SB account with the Bank and (2) investment in Gold and (3) Investment in 'Sona Bachat Bank' (Suggested Scheme) over a period of 10 years ( 1<sup>st</sup> januray 2003 to 31<sup>st</sup> december 2012) as if the suggested scheme is in operation in Banks.

## CONCLUSIONS

While making studies herein above it is observed that the investment of ₹ 1000.00 over a period of 10 years has appreciated to ₹ 1425.23 by investment in existing Savings account with Bank, appreciated to ₹ 5976.71 by investment in Gold and appreciated to ₹ 5206.22 by investment in suggested scheme with Bank. From the foregoing it reveals that the investor should invest in Gold but direct investment in gold requires large amount and the investor has to bear the risk of all type and will lose liquidity.

On the contrary by investing in the suggested scheme he can invest small amounts too in gold. On his investment ₹ 1000.00 in Sona Bachat Bank he will get less amount of ₹ 769.49 as compared to direct investment in gold but by doing so he has transferred all type of risk to the Bank without losing the liquidity and harvested the maximum return on the investment.

The suggested scheme is carrying all the positive points of existing Savings Bank account scheme with the Bank and yield on investment in Gold.

The suggested scheme may provide the better opportunities to the general public if implemented in the banking sector.

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**THE FINANCIAL STATEMENT ANALYSIS OF TAMIL NADU NEWSPRINT AND PAPERS LIMITED, KARUR****OMBEGA OGUTA KEPHAR****RESEARCH SCHOLAR****DEPARTMENT OF BUSINESS AND ECONOMICS****JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY****KENYA****ABSTRACT**

*In the study of the analysis of financial statements of Tamil Nadu Newsprint Papers Limited, the leading world paper-mill with high quality, premium, surface-sized and non-surfaced sized writing and printing papers. It focuses on the inside of the present and forecast the future prospects of the company's operations in the present competitive environment other than to meet the basic objectives of the company in the stakeholders point of view of providing adequate dividends and safeguarding the assets of the company. The Analysis is based on the historical data of the company for the period of five years from year ended march 2005 to march 2009 by employing comparative, common size and trend analysis techniques. The study discloses a trend that indicates impressive future given the company maintains and keeps on improving the its operation with the continues innovation to keep up with the dynamism in the present era of production.*

**KEYWORDS**

Analysis of profitability, financial position.

**INTRODUCTION**

Tamil Nadu Newsprint & Papers Limited came into being with the occurrence of technological and socio-economic transformations in the Asian countries in the 18th –19th century. Manufacturing industries are the chief wealth producing sectors of an economy as they employ a huge share of the labor force and produce materials required by sectors of strategic importance such as national infrastructure and defense.

Analysis of financial statement attempts to determine the significant and meaning of financial statement data so that a forecast can be made of the prospect of the future earnings, ability to service debt both current and long term and profitability of a sound management policy.

The focus of financial analysis is pinpointing of the strengths and weaknesses of the business undertaking by making comparison of various components and examining its content which will enable financial manager as a basis to plan future financial requirements. Its through this that the business is able to meet the basic objectives of profit maximization and wealth maximization of the stakeholders.

**NATURE OF STATEMENT OF STUDY**

Finance being the core base of every business firm which necessitates the firm to run its business effectively and this has led to the point of analyzing the financial statement of TNPL so that to be in position to discover its profitability and financial position and forecast the future capacity of the company.

**OBJECTIVES OF STUDY**

- 1) To judge the financial performance of the Company.
- 2) To make inter-period comparisons and also highlight the trend in performance efficiency and financial position with the help of the comparative financial statement.
- 3) To determine the future potential of the Company with the help of the trend analysis.
- 4) To measure the utilization of various assets during the periods.
- 5) To indicate the relationship of various items with some common items (expressed as a percentage of the common item).

**TOOL (TECHNIQUES) OF FINANCIAL STATEMENT ANALYSIS**

- ❖ Comparative statement;
- ❖ Common size statement;
- ❖ Trend analysis.

**SCOPE OF STUDY**

The scope of study is limited to Tamil Nadu News Print and Papers Limited, Karur. The report is expected to provide sufficient information about the financial statements of Tamil Nadu News Print and Papers Limited so that to evaluate the past performance, present financial position, liquidity situation and give the future prospects of its operations. The main purpose of analysis of the financial statements of Tamil Nadu News Print and Papers Limited is to determine the present profitability and financial position of the Company and decide about its future prospects in terms of earning capacity and its operational efficiency.

**LIMITATIONS OF THE STUDY**

The following are the limitations of financial statement analysis of TNPL:

- ❖ The study of analysis and interpretation is applicable only to Tamil Nadu News Print and Papers Limited.
- ❖ The analysis is based on the historical data. The past cannot be the index of the future and cannot be percent basis of the future estimation, forecasting, budgeting and planning.
- ❖ It deals only with the financial statement of the Company.
- ❖ Limitation of time study to only five years i.e. 2004-2005 to 2008-2009. That does not give a wider scope for the analysis.
- ❖ The accuracy and reliability of analysis depends on the reliability of the figures derived from the financial statements or books of account.

**METHODOLOGY OF STUDY**

The methodology that is employed in the study of analysis of TNPL financial statement is secondary data. The secondary data was mainly collected from Annual reports, Interim records, Company journals, News papers, Company web site and Manuscripts

**PERIOD OF STUDY**

This study covers a period of five financial years from 2004-2005 to 2008-2009 consecutively.

**ANALYSIS AND INTERPRETATIONS****COMPARATIVE INCOME STATEMENT FOR YEAR ENDED MARCH 2005 TO MARCH 2006**

Particulars	Years		Increase(+) Or Decrease(-)	
	2004-2005 (In Rs. Cr)	2005-2006 (In Rs. Cr)	Amount (In Rs. Cr)	Percentage (%)
<b>Income</b>				
Sales Turnover	771.11	886.97	115.86	15.03
Excise Duty	54.43	73.55	19.12	35.13
Net Sales	716.68	813.42	96.74	13.50
Other Income	11.93	13.86	1.93	16.18
Stock Adjustments	-14.1	-4.06	10.04	(71.21)
<b>Total Income</b>	<b>714.51</b>	<b>823.22</b>	<b>108.71</b>	<b>15.21</b>
<b>Expenditure</b>				
Raw Materials	245.38	278.86	33.48	13.64
Power & Fuel Cost	143.31	167.92	24.61	17.17
Employee Cost	53.51	51.6	-1.91	(3.57)
Other Manufacturing Expenses	40.61	41.33	0.72	1.77
Selling and Admin. Expenses	108.83	86.73	-22.1	(20.31)
Miscellaneous Expenses	5.59	7.45	1.86	33.27
<b>Total Expenses</b>	<b>597.23</b>	<b>633.89</b>	<b>36.66</b>	<b>6.14</b>
Operating Profit	105.35	175.47	70.12	66.56
<b>PBDIT</b>	<b>117.28</b>	<b>189.33</b>	<b>72.05</b>	<b>61.43</b>
Interest	16.21	20.29	4.08	25.17
<b>PBDT</b>	<b>101.07</b>	<b>169.04</b>	<b>67.97</b>	<b>67.25</b>
Depreciation	61.88	62.5	0.62	1.00
<b>Profit Before Tax</b>	<b>39.19</b>	<b>106.54</b>	<b>67.35</b>	<b>171.86</b>
Extra-ordinary items	-0.01	-2.35	-2.34	23,400.00
PBT (Post Extra-odd Items)	39.18	104.19	65.01	165.93
Tax	1.22	23.65	22.43	1,838.52
<b>Net Profit After Tax</b>	<b>37.95</b>	<b>80.55</b>	<b>42.6</b>	<b>112.25</b>

Source: Annual Reports of TNPL

**INTERPRETATION**

The comparative income statement of TNPL for the years 2004-2005 to 2005-2006 reveals that there was;

- ❖ An increase in the total income by 15.21%.
- ❖ An increase in total expenses by 6.14%.
- ❖ An increase in Net Profit after Tax by 112.25%.

This indicates that the profitability of the company was stable despite the increase in the total expenses.

**COMPARATIVE INCOME STATEMENT FOR YEAR ENDED MARCH 2006 TO MARCH 2007**

Particulars	Years		Increase(+) Or Decrease(-)	
	2005-2006 (In Rs. Cr)	2006-2007 (In Rs. Cr)	Amount(In Rs. Cr)	Percentage (%)
<b>Income</b>				
Sales Turnover	886.97	962.03	75.06	8.46
Excise Duty	73.55	65.64	-7.91	(10.75)
Net Sales	813.42	896.39	82.97	10.20
Other Income	13.86	13.57	-0.29	(2.09)
Stock Adjustments	-4.06	-5.28	-1.22	30.05
<b>Total Income</b>	<b>823.22</b>	<b>904.68</b>	<b>81.46</b>	<b>9.90</b>
<b>Expenditure</b>				
Raw Materials	278.86	293.79	14.93	5.35
Power & Fuel Cost	167.92	184.65	16.73	9.96
Employee Cost	51.6	63.78	12.18	23.60
Other Manufacturing Exp.	41.33	48.93	7.6	18.39
Selling and Admn. Exp.	86.73	88.2	1.47	1.69
Miscellaneous Expenses	7.45	10.77	3.32	44.56
<b>Total Expenses</b>	<b>633.89</b>	<b>690.12</b>	<b>56.23</b>	<b>8.87</b>
Operating Profit	175.47	200.99	25.52	14.54
<b>PBDIT</b>	<b>189.33</b>	<b>214.56</b>	<b>25.23</b>	<b>13.33</b>
Interest	20.29	20.52	0.23	1.13
<b>PBDT</b>	<b>169.04</b>	<b>194.04</b>	<b>25</b>	<b>14.79</b>
Depreciation	62.5	66.73	4.23	6.77
<b>Profit Before Tax</b>	<b>106.54</b>	<b>127.31</b>	<b>20.77</b>	<b>19.50</b>
Extra-ordinary items	-2.35	-3.02	-0.67	28.51
PBT (Post Extra-odd Items)	104.19	124.29	20.1	19.29
Tax	23.65	38.21	14.56	61.56
<b>Profit After Tax</b>	<b>80.55</b>	<b>86.06</b>	<b>5.51</b>	<b>6.84</b>

Source: Annual Reports of TNPL

**INTERPRETATION**

The comparative income statement of TNPL for the years 2005-2006 to 2006-2007 reveals that there was;

- ❖ An increase in the total income by 9.9%.
- ❖ An increase in the total expenses by 8.87%.
- ❖ An increase in the Net Profit after Tax by 6.84%.



This shows that the profitability position of the company was relatively good even though there was an increase in the total expenditure.

#### COMPARATIVE INCOME STATEMENT FOR YEAR ENDED MARCH 2007 TO MARCH 2008

Particulars	Years		Increase(+) Or Decrease(-)	
	2006-2007 (In Rs. Cr)	2007-2008 (In Rs. Cr)	Amount (In Rs. Cr)	Percentage (%)
<b>Income</b>				
Sales Turnover	962.03	1,069.39	107.36	11.16
Excise Duty	65.64	81.95	16.31	24.85
Net Sales	896.39	987.44	91.05	10.16
Other Income	13.57	13.53	-0.04	(0.29)
Stock Adjustments	-5.28	0.2	5.48	(103.79)
<b>Total Income</b>	<b>904.68</b>	<b>1,001.17</b>	<b>96.49</b>	<b>10.67</b>
<b>Expenditure</b>				
Raw Materials	293.79	328.91	35.12	11.95
Power & Fuel Cost	184.65	194.47	9.82	5.32
Employee Cost	63.78	68.11	4.33	6.79
Other Manufacturing Expenses	48.93	46.98	-1.95	(3.99)
Selling and Admin Expenses	88.2	87.22	-0.98	(1.11)
Miscellaneous Expenses	10.77	12.84	2.07	19.22
<b>Total Expenses</b>	<b>690.12</b>	<b>738.53</b>	<b>48.41</b>	<b>7.01</b>
Operating Profit	200.99	249.11	48.12	23.94
<b>PBDIT</b>	<b>214.56</b>	<b>262.64</b>	<b>48.08</b>	<b>22.41</b>
Interest	20.52	23.91	3.39	16.52
<b>PBDT</b>	<b>194.04</b>	<b>238.73</b>	<b>44.69</b>	<b>23.03</b>
Depreciation	66.73	75.54	8.81	13.20
<b>Profit Before Tax</b>	<b>127.31</b>	<b>163.19</b>	<b>35.88</b>	<b>28.18</b>
Extra-ordinary items	-3.02	1.05	4.07	(134.77)
PBT (Post Extra-odd Items)	124.29	164.24	39.95	32.14
Tax	38.21	51.44	13.23	34.62
<b>Profit After Tax</b>	<b>86.06</b>	<b>112.83</b>	<b>26.77</b>	<b>31.11</b>

Source: Annual Reports of TNPL

#### INTERPRETATION

The comparative income statement of TNPL for the years 2006-2007 to 2007-2008 reveals that there was;

- ❖ An increase in the total income by 10.67%
- ❖ An increase in the total expenses by 7.01%
- ❖ An increase in the Net Profit After Tax by 31.11%

This indicates that the overall profitability of the company was relatively good despite the increase in the expenditure.

#### COMPARATIVE INCOME STATEMENT FOR YEAR ENDED MARCH 2008 TO MARCH 2009

Particulars	Years		Increase (+) Or Decrease (-)	
	2007-2008 (In Rs. Cr)	2008-2009 (In Rs. Cr)	Amount (In Rs. Cr)	Percentage (%)
<b>Income</b>				
Sales Turnover	1,069.39	1,171.20	101.81	9.52
Excise Duty	81.95	53.11	-28.84	(35.19)
Net Sales	987.44	1,118.09	130.65	13.23
Other Income	13.53	4.86	-8.67	(64.08)
Stock Adjustments	0.2	5	4.80	2,400.00
<b>Total Income</b>	<b>1,001.17</b>	<b>1,127.95</b>	<b>126.78</b>	<b>12.66</b>
<b>Expenditure</b>				
Raw Materials	328.91	296.97	-31.94	(9.71)
Power & Fuel Cost	194.47	296.33	101.86	52.38
Employee Cost	68.11	81.41	13.30	19.53
Other Manufacturing Expenses	46.98	50.64	3.66	7.79
Selling and Admin Expenses	87.22	98.39	11.17	12.81
Miscellaneous Expenses	12.84	13.3	0.46	3.58
<b>Total Expenses</b>	<b>738.53</b>	<b>837.04</b>	<b>98.51</b>	<b>13.34</b>
Operating Profit	249.11	286.05	36.94	14.83
<b>PBDIT</b>	<b>262.64</b>	<b>290.91</b>	<b>28.27</b>	<b>10.76</b>
Interest	23.91	49.27	25.36	106.06
<b>PBDT</b>	<b>238.73</b>	<b>241.64</b>	<b>2.91</b>	<b>1.22</b>
Depreciation	75.54	100.8	25.26	33.44
<b>Profit Before Tax</b>	<b>163.19</b>	<b>140.84</b>	<b>-22.35</b>	<b>(13.70)</b>
Extra-ordinary items	1.05	9.95	8.90	847.62
PBT (Post Extra-odd Items)	164.24	150.79	-13.45	(8.19)
Tax	51.44	43.42	-8.02	(15.59)
<b>Profit After Tax</b>	<b>112.83</b>	<b>107.39</b>	<b>-5.44</b>	<b>(4.82)</b>

Source: Annual Reports of TNPL

#### INTERPRETATION

The comparative income statement of TNPL for the years 2007-2008 to 2008-2009 reveals that there was;

- ❖ An increase in the total income by 12.66%.
- ❖ An increase in total expenses by 13.34%.
- ❖ A decrease in Net Profit after Tax by 4.82%.

This indicates that during these periods the profitability position of the company was weak, attributed by the heavy expenditures incurred by the company.

## COMPARATIVE BALANCE SHEET FOR THE YEAR ENDED MARCH 2005 TO MARCH 2006

Particulars	Years		Increase (+) Or Decrease (-)	
	2004-2005 (In Rs. Cr)	2005-2006 (In Rs. Cr)	Amount (In Rs. Cr)	Percentage (%)
<b>Sources Of Funds</b>				
Equity Share Capital	69.36	69.38	0.02	0.03
Reserves	396.07	453.14	57.07	14.41
<b>Net worth</b>	<b>465.43</b>	<b>522.52</b>	<b>57.09</b>	<b>12.27</b>
Secured Loans	157.95	224.29	66.34	42.00
Unsecured Loans	92.08	83.84	-8.24	(8.95)
<b>Total Debt</b>	<b>250.03</b>	<b>308.13</b>	<b>58.1</b>	<b>23.24</b>
<b>Total Liabilities</b>	<b>715.46</b>	<b>830.65</b>	<b>115.19</b>	<b>16.10</b>
<b>Application Of Funds</b>				
Gross Block	1,383.44	1,432.35	48.91	3.54
Less: Accum. Depreciation	665.64	729.96	64.32	9.66
<b>Net Block</b>	<b>717.8</b>	<b>702.39</b>	<b>-15.41</b>	<b>(2.15)</b>
Capital Work in Progress	11.05	115.13	104.08	941.90
Investments	1.14	1.14	0	-
Inventories	124.69	121.55	-3.14	(2.52)
Sundry Debtors	118.38	127.77	9.39	7.93
Cash and Bank Balance	12.23	19.42	7.19	58.79
<b>Total Current Assets</b>	<b>255.3</b>	<b>268.74</b>	<b>13.44</b>	<b>5.26</b>
Loans and Advances	137.06	133.18	-3.88	(2.83)
Fixed Deposits	1.37	0.79	-0.58	(42.34)
<b>Total CA, Loans &amp; Advances</b>	<b>393.73</b>	<b>402.71</b>	<b>8.98</b>	<b>2.28</b>
Current Liabilities	364.95	326.27	-38.68	(10.60)
Provisions	43.51	64.59	21.08	48.45
<b>Total CL &amp; Provisions</b>	<b>408.46</b>	<b>390.86</b>	<b>-17.6</b>	<b>(4.31)</b>
<b>Net Current Assets</b>	<b>-14.73</b>	<b>11.85</b>	<b>26.58</b>	<b>(180.45)</b>
Miscellaneous Expenses	0.2	0.13	-0.07	(35.00)
<b>Total Assets</b>	<b>715.46</b>	<b>830.65</b>	<b>115.19</b>	<b>16.10</b>

Source: Annual Reports of TNPL

## INTERPRETATION

The comparative balance sheet of TNPL for the years 2004-2005 to 2005-2006 reveals that there was;

- ❖ A decrease in the net block (fixed assets) by 2.15%
- ❖ An increase in the Net current Assets by Rs. 26.58 crores which means that the rise in the total debt was meant to finance the current assets of the company
- ❖ An increase in the Net worth of the company by 12.27%, this shows that the company had employed a conservative dividend policy i.e. an increase in the amount of reserves by 14.41%.

Thus the financial position of the company was relatively good even though there was decrease in the Net Block of the company during the two financial years.

## COMPARATIVE BALANCE SHEET FOR THE YEARS MARCH 2006 TO MARCH 2007

Particulars	Years		Increase (+) Or Decrease (-)	
	2005-2006 (In Rs. Cr)	2006-2007 (In Rs. Cr)	Amount (In Rs. Cr)	Percentage (%)
<b>Sources Of Funds</b>				
Equity Share Capital	69.38	69.38	0	-
Reserves	453.14	507.12	53.98	11.91
<b>Net worth</b>	<b>522.52</b>	<b>576.5</b>	<b>53.98</b>	<b>10.33</b>
Secured Loans	224.29	495.86	271.57	121.08
Unsecured Loans	83.84	63.53	-20.31	(24.22)
<b>Total Debt</b>	<b>308.13</b>	<b>559.39</b>	<b>251.26</b>	<b>81.54</b>
<b>Total Liabilities</b>	<b>830.65</b>	<b>1,135.89</b>	<b>305.24</b>	<b>36.75</b>
<b>Application Of Funds</b>				
Gross Block	1,432.35	1,514.36	82.01	5.73
Less: Accum. Depreciation	729.96	795.94	65.98	9.04
<b>Net Block</b>	<b>702.39</b>	<b>718.42</b>	<b>16.03</b>	<b>2.28</b>
Capital Work in Progress	115.13	459.52	344.39	299.13
Investments	1.14	1.14	0	-
Inventories	121.55	156.38	34.83	28.65
Sundry Debtors	127.77	105.33	-22.44	(17.56)
Cash and Bank Balance	19.42	18.44	-0.98	(5.05)
<b>Total Current Assets</b>	<b>268.74</b>	<b>280.15</b>	<b>11.41</b>	<b>4.25</b>
Loans and Advances	133.18	95.86	-37.32	(28.02)
Fixed Deposits	0.79	0.56	-0.23	(29.11)
<b>Total CA, Loans &amp; Advances</b>	<b>402.71</b>	<b>376.57</b>	<b>-26.14</b>	<b>(6.49)</b>
Current Liabilities	326.27	370.06	43.79	13.42
Provisions	64.59	49.77	-14.82	(22.94)
<b>Total CL &amp; Provisions</b>	<b>390.86</b>	<b>419.83</b>	<b>28.97</b>	<b>7.41</b>
<b>Net Current Assets</b>	<b>11.85</b>	<b>-43.26</b>	<b>-55.11</b>	<b>(465.06)</b>
Miscellaneous Expenses	0.13	0.07	-0.06	(46.15)
<b>Total Assets</b>	<b>830.65</b>	<b>1135.89</b>	<b>305.24</b>	<b>36.75</b>

Source: Annual Reports of TNPL

**INTERPRETATION**

The comparative balance sheet of TNPL for the years 2005-2006 to 2006-2007 reveals that there was;

- ❖ There was an increase in the Net Block (Net Fixed Assets) by 2.28%, which indicates that there was more investment in the Assets.
- ❖ There was an increase in the Total debt by 81.54% which possibly was used to fund the Fixed Assets investment.
- ❖ There was a negative Net Current Assets of 465.06%.
- ❖ There was an increase in the Net Worth by 10.33%, which is due to an increase in the reserves (i.e. 11.91%).

This indicates that the financial position of the company was not all that good due to negative Net Current Assets even though the Company showed an increase in the net worth which might be utilized to fund the working capital of the company.

**COMPARATIVE BALANCE SHEET FOR THE YEARS MARCH 2007 TO MARCH 2008**

Particulars	Years		Increase (+) Or Decrease (-)	
	2006-2007 (In Rs. Cr)	2007-2008 (In Rs. Cr)	Amount (In Rs. Cr)	Percentage (%)
<b>Sources of Funds</b>				
Equity Share Capital	69.38	69.38	0	-
Reserves	507.12	570.63	63.51	12.52
Revaluation Reserves	0	0	0	-
<b>Net worth</b>	<b>576.5</b>	<b>640.01</b>	<b>63.51</b>	<b>11.02</b>
Secured Loans	495.86	488.06	-7.8	(1.57)
Unsecured Loans	63.53	64.38	0.85	1.34
<b>Total Debt</b>	<b>559.39</b>	<b>552.44</b>	<b>-6.95</b>	<b>(1.24)</b>
<b>Total Liabilities</b>	<b>1,135.89</b>	<b>1,192.45</b>	<b>56.56</b>	<b>4.98</b>
<b>Application Of Funds</b>				
Gross Block	1,514.36	1,860.91	346.55	22.88
Less: Accum. Depreciation	795.94	865	72.06	9.05
<b>Net Block</b>	<b>718.42</b>	<b>992.91</b>	<b>274.49</b>	<b>38.21</b>
Capital Work in Progress	459.52	290.7	-168.82	(36.74)
Investments	1.14	17.15	16.01	1,404.39
Inventories	156.38	147.26	-9.12	(5.83)
Sundry Debtors	105.33	98.56	-6.77	(6.43)
Cash and Bank Balance	18.44	22.63	4.19	22.72
Total Current Assets	280.15	268.45	-11.7	(4.18)
Loans and Advances	95.86	156.23	60.37	62.98
Fixed Deposits	0.56	0.41	-0.15	(26.79)
<b>Total CA, Loans &amp; Advances</b>	<b>376.57</b>	<b>425.09</b>	<b>48.52</b>	<b>12.88</b>
Current Liabilities	370.06	457.45	87.39	23.62
Provisions	49.77	75.97	26.2	52.64
<b>Total CL &amp; Provisions</b>	<b>419.83</b>	<b>533.42</b>	<b>113.59</b>	<b>27.06</b>
<b>Net Current Assets</b>	<b>-43.26</b>	<b>-108.33</b>	<b>-65.07</b>	<b>150.42</b>
Miscellaneous Expenses	0.07	0	-0.07	(100.00)
<b>Total Assets</b>	<b>1135.89</b>	<b>1192.45</b>	<b>56.56</b>	<b>4.98</b>

Source: Annual Reports of TNPL

**INTERPRETATION**

The comparative balance sheet of TNPL for the years 2006-2007 to 2007-2008 reveals that there was;

- ❖ There was an increase in the Net Block (Net Fixed Assets) by 38.21%, which indicates that there was additional investment in the Assets of the Company.
- ❖ There was a decrease in the Total Debt by 1.24%, which indicates that rate of borrowing has declined.
- ❖ There was a decrease in Net Current Assets by 150.42%, this indicates that liquidity financing of the Current Assets has reduced greatly.
- ❖ There was an increase in the Net worth of the Company by 11.02%, which was due to an increment in the reserves (i.e. 12.52) of the Company in the two financial years.

Thus it indicates that the financial position of the company was good though there was negative Net Current Assets of the company which might cause liquidity problem but it can be financed from company reserves.

## COMPARATIVE BALANCE SHEET FOR THE YEARS MARCH 2008 TO MARCH 2009

Particulars	Years		Increase (+) Decrease (-)	
	2007-2008 (In Rs. Cr)	2008-2009 (In Rs. Cr)	Amount (In Rs. Cr)	Percentage (%)
<b>Sources Of Funds</b>				
Equity Share Capital	69.38	69.38	0	-
Reserves	570.63	594.94	24.31	4.26
Revaluation Reserves	0	0	0	-
<b>Net worth</b>	<b>640.01</b>	<b>664.32</b>	<b>24.31</b>	<b>3.80</b>
Secured Loans	488.06	685.04	196.98	40.36
Unsecured Loans	64.38	121.41	57.03	88.58
<b>Total Debt</b>	<b>552.44</b>	<b>806.45</b>	<b>254.01</b>	<b>45.98</b>
<b>Total Liabilities</b>	<b>1,192.45</b>	<b>1,470.77</b>	<b>278.32</b>	<b>23.34</b>
<b>Application Of Funds</b>				
Gross Block	1,860.91	2,177.20	316.29	17.00
Less: Accum. Depreciation	868	955.94	87.94	10.13
<b>Net Block</b>	<b>992.91</b>	<b>1,221.26</b>	<b>228.35</b>	<b>23.00</b>
Capital Work in Progress	290.7	262.7	-28	(9.63)
Investments	17.15	1.14	-16.01	(93.35)
Inventories	147.26	196.39	49.13	33.36
Sundry Debtors	98.56	169.74	71.18	72.22
Cash and Bank Balance	22.63	17.57	-5.06	(22.36)
Total Current Assets	268.45	383.7	115.25	42.93
Loans and Advances	156.23	166.38	10.15	6.50
Fixed Deposits	0.41	0.1	-0.31	(75.61)
<b>Total CA, Loans &amp; Advances</b>	<b>425.09</b>	<b>550.18</b>	<b>125.09</b>	<b>29.43</b>
Current Liabilities	457.45	463.6	6.15	1.34
Provisions	75.97	100.91	24.94	32.83
<b>Total CL &amp; Provisions</b>	<b>533.42</b>	<b>564.51</b>	<b>31.09</b>	<b>5.83</b>
<b>Net Current Assets</b>	<b>-108.33</b>	<b>-14.33</b>	<b>94</b>	<b>(86.77)</b>
<b>Total Assets</b>	<b>1192.45</b>	<b>1470.77</b>	<b>278.32</b>	<b>23.34</b>

Source: Annual Reports of TNPL

## INTERPRETATION

The comparative balance sheet of TNPL for the years 2007-2008 to 2008-2009 reveals that there was;

- ❖ There was an increase in the Net Block (Net Fixed Assets) by 23% (Rs.228.35 crores), which indicates that there was additional investment in the Fixed assets.
- ❖ There was an increase in the Total Debt of the Company by 45.98%, which indicate an increase in the external borrowing to finance the operation of the company.
- ❖ There was improvement in the Net Current Assets by 86.77%.
- ❖ There was an increase in the Net worth by 3.8% which is attributed by the increase in the reserves of Company.

This indicates that the financial position of the company was promising, though there was an increase in external borrowing.

## COMMON SIZE INCOME STATEMENT FOR THE YEARS ENDED MAR. 2005 TO MAR. 2009

Particulars	Trend Percentage (%)				
	Mar '05	Mar '06	Mar '07	Mar '08	Mar '09
<b>Income</b>					
Net Sales	100.00	100.00	100.00	100.00	100.00
Other Income	1.66	1.70	1.51	1.37	0.43
Stock Adjustments	(1.97)	(0.50)	(0.59)	0.02	0.45
<b>Total Income</b>	<b>1.00</b>	<b>1.01</b>	<b>1.01</b>	<b>1.01</b>	<b>1.01</b>
<b>Expenditure</b>					
Raw Materials	34.24	34.28	32.77	33.31	26.56
Power & Fuel Cost	20.00	20.64	20.60	19.69	26.50
Employee Cost	7.47	6.34	7.12	6.90	7.28
Other Manufacturing Exp.	5.67	5.08	5.46	4.76	4.53
Selling and Admin. Exp.	0.15	0.11	0.10	0.09	0.09
Miscellaneous Expenses	0.78	0.92	1.20	1.30	1.19
<b>Total Expenses</b>	<b>83.33</b>	<b>77.93</b>	<b>76.99</b>	<b>74.79</b>	<b>74.86</b>
Operating Profit	14.70	21.57	22.42	25.23	25.58
<b>PBDIT</b>	<b>16.36</b>	<b>23.28</b>	<b>23.94</b>	<b>26.60</b>	<b>26.02</b>
Interest	2.26	2.49	2.29	2.42	4.41
<b>PBDT</b>	<b>14.10</b>	<b>20.78</b>	<b>21.65</b>	<b>24.18</b>	<b>21.61</b>
Depreciation	8.63	7.68	7.44	7.65	9.02
<b>Profit Before Tax</b>	<b>5.47</b>	<b>13.10</b>	<b>14.20</b>	<b>16.53</b>	<b>12.60</b>
Extra-ordinary items	(0.00)	(0.29)	(0.34)	0.11	0.89
PBT (Post Extra-odd Items)	5.47	12.81	13.87	16.63	13.49
Tax	0.17	2.91	4.26	5.21	3.88
<b>Net Profit After Tax</b>	<b>5.30</b>	<b>9.90</b>	<b>9.60</b>	<b>11.43</b>	<b>9.60</b>

Source: Annual Reports of TNPL

## INTERPRETATION

The common size statement of TNPL for the years 2004-2005 to 2008-2009 reveals that;

- ❖ There was a steady growth of the Total Income of the Company, though there was constant trend as expressed in the common item i.e. net sales.

- ❖ The Net Profit after Tax showed volatility throughout the period of study, despite growth in the total income of the Company.
  - ❖ The total expenses were on an increase throughout the period and yet it showed a diminishing trend after year 2004-2005.
- Thus it indicates that the profitability of the Company was not promising due to fluctuations in its Net profits after tax.

**COMMON SIZE BALANCE SHEET FOR THE YEARS ENDED MAR. 2005 TO MAR. 2009**

In Rs. Cr.

Particulars	Percentage				
	Mar '05	Mar '06	Mar '07	Mar '08	Mar '09
<b>Sources Of Funds</b>					
Equity Share Capital	9.69	8.35	6.11	5.82	4.72
Reserves	55.36	54.55	44.65	47.85	40.45
<b>Net worth</b>	<b>65.05</b>	<b>62.9</b>	<b>50.75</b>	<b>53.67</b>	<b>45.17</b>
Secured Loans	22.08	27	43.65	40.93	46.58
Unsecured Loans	12.87	10.09	5.59	5.4	8.25
Total Debt	34.95	37.1	49.25	46.33	54.83
<b>Total Liabilities</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Application Of Funds</b>					
Gross Block	193.36	172.44	133.32	156.06	148.03
Less: Accum. Depreciation	93.04	87.88	70.07	72.79	65
<b>Net Block</b>	<b>100.33</b>	<b>84.56</b>	<b>63.25</b>	<b>83.27</b>	<b>83.04</b>
Capital Work in Progress	1.54	13.86	40.45	24.38	17.86
Investments	0.16	0.14	0.1	1.44	0.08
Inventories	17.43	14.63	13.77	12.35	13.35
Sundry Debtors	16.55	15.38	9.27	8.27	11.54
Cash and Bank Balance	1.71	2.34	1.62	1.9	1.19
<b>Total Current Assets</b>	<b>35.68</b>	<b>32.35</b>	<b>24.66</b>	<b>22.51</b>	<b>26.09</b>
Loans and Advances	19.16	16.03	8.44	13.1	11.31
Fixed Deposits	0.19	0.1	0.05	0.03	0.01
Total CA, Loans & Advances	55.03	48.48	33.15	35.65	37.41
<b>Current Liabilities</b>	<b>51.01</b>	<b>39.28</b>	<b>32.58</b>	<b>38.36</b>	<b>31.52</b>
Provisions	6.08	7.78	4.38	6.37	6.86
Total CL & Provisions	57.09	47.05	36.96	44.73	38.38
<b>Net Current Assets</b>	<b>-2.06</b>	<b>1.43</b>	<b>-3.81</b>	<b>-9.08</b>	<b>-0.97</b>
Miscellaneous Expenses	0.03	0.02	0.01	-	-
<b>Total Assets</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: Annual Reports of TNPL

**INTERPRETATION**

The common size Balance Sheet of TNPL for the years between 2004 -2005 and 2008-2009 indicate that;

- 1) Net current Assets of 2005-2006 showed a positive figure of 1.43% as compared to the rest of the years which were negative.
  - 2) There was steady growth in the total debt of the Company which shows that the Company relied on the external source of funding its operations.
  - 3) There was a steady growth in the Net worth of the Company though it showed declining trend.
  - 4) There was new investment that was done in the year 2007-2008 of Rs. 17.15 crores despite constant investment of Rs. 1.14 crores in the rest of the years.
- The Company's liquidity position was not good though it showed positive performance in the year 2005-2006 because it relies heavily in external borrowing.

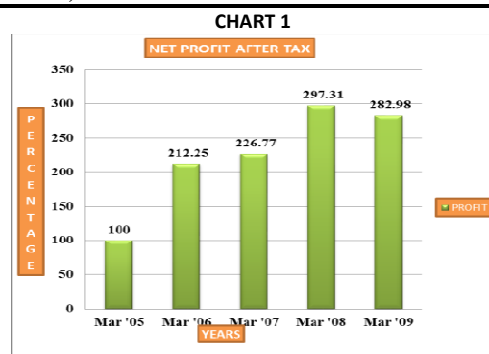
**TREND INCOME STATEMENT FOR YEARS MAR. 20005 TO MAR. 2009**

In Rs. Cr.

Particulars	Trend Percentage ( % )				
	Mar '05	Mar '06	Mar '07	Mar '08	Mar '09
<b>Income</b>					
Sales Turnover	100	115.03	124.76	138.68	151.88
Excise Duty	100	135.13	120.6	150.56	97.57
Net Sales	100	113.5	125.08	137.78	156.01
Other Income	100	116.18	113.75	113.41	40.74
Stock Adjustments	100	28.79	37.45	-1.42	-35.46
<b>Total Income</b>	<b>100</b>	<b>115.21</b>	<b>126.62</b>	<b>140.12</b>	<b>157.86</b>
<b>Expenditure</b>					
Raw Materials	100	113.64	119.73	134.04	121.02
Power & Fuel Cost	100	117.17	128.85	135.7	206.78
Employee Cost	100	96.43	119.19	127.28	152.14
Other Manufacturing Expenses	100	101.77	120.49	115.69	124.7
Selling and Admin Expenses	100	79.69	81.04	80.14	90.41
Miscellaneous Expenses	100	133.27	192.67	229.7	237.92
<b>Total Expenses</b>	<b>100</b>	<b>106.14</b>	<b>115.55</b>	<b>123.66</b>	<b>140.15</b>
Operating Profit	100	166.56	190.78	236.46	271.52
PBDIT	100	161.43	182.95	223.94	248.05
Interest	100	125.17	126.59	147.5	303.95
PBDT	100	167.25	191.99	236.2	239.08
Depreciation	100	101	107.84	122.07	162.9
<b>Profit Before Tax</b>	<b>100</b>	<b>271.86</b>	<b>324.85</b>	<b>416.41</b>	<b>359.38</b>
Extra-ordinary items	100	23,500.00	30,200.00	(10,500.00)	(99,500.00)
PBT (Post Extra-odd Items)	100	265.93	317.23	419.19	384.86
Tax	100	1,938.52	3,131.97	4,216.39	3,559.02
<b>Profit After Tax</b>	<b>100</b>	<b>212.25</b>	<b>226.77</b>	<b>297.31</b>	<b>282.98</b>

Source: Annual Reports of TNPL



**INTERPRETATION**

The trend income statement of TNPL for the periods 2004-2005 to 2008-2009 reveals that there was;

- ❖ Steady increasing trend in the Total Income which was attributed by the steady growth of net sales of the Company.
- ❖ Steady increasing trend in the total expenses of the company
- ❖ Growth in Net Profit After Tax over and above base year (100%) for the first four years which was followed by a decreasing trend in the year 2008-2009 by 14.33% from the previous year's percentage. Year 2007-2008 had the highest percentage trend of 297.31%.

This indicates that profit reduction of the company was due to the steady growth the total expenses involved during that financial year which might have affected its profitability.

**TREND BALANCE SHEET FOR THE YEARS ENDED MAR. 2005 TO MAR. 2009**

In Rs. Cr.

Particulars	Trend Percentage (%)				
Particulars	Mar '05	Mar '06	Mar '07	Mar '08	Mar '09
<b>Source of Funds</b>					
Equity Share Capital	100	100.03	100.03	100.03	100.03
Reserves	100	114.41	128.04	144.07	150.21
<b>Net worth</b>	<b>100</b>	<b>112.27</b>	<b>123.86</b>	<b>137.51</b>	<b>142.73</b>
Secured Loans	100	142	313.93	309	433.71
Unsecured Loans	100	91.05	68.99	69.92	131.85
<b>Total Debt</b>	<b>100</b>	<b>123.24</b>	<b>223.73</b>	<b>220.95</b>	<b>322.54</b>
<b>Total Liabilities</b>	<b>100</b>	<b>116.1</b>	<b>158.76</b>	<b>166.67</b>	<b>205.57</b>
<b>Application Of Funds</b>					
Gross Block	100	103.54	109.46	134.51	157.38
Less: Accum. Depreciation	100	109.66	119.58	130.4	143.61
<b>Net Block</b>	<b>100</b>	<b>97.85</b>	<b>100.09</b>	<b>138.33</b>	<b>170.14</b>
Capital Work in Progress	100	1,041.90	4,158.55	2,630.77	2,377.38
Investments	100	100	100	1,504.39	100
Inventories	100	97.48	125.42	118.1	157.5
Sundry Debtors	100	107.93	88.98	83.26	143.39
Cash and Bank Balance	100	158.79	150.78	185.04	143.66
<b>Total Current Assets</b>	<b>100</b>	<b>105.26</b>	<b>109.73</b>	<b>105.15</b>	<b>150.29</b>
Loans and Advances	100	97.17	69.94	113.99	121.39
Fixed Deposits	100	57.66	40.88	29.93	7.3
<b>Total CA, Loans &amp; Advances</b>	<b>100</b>	<b>102.28</b>	<b>95.64</b>	<b>107.96</b>	<b>139.74</b>
<b>Current Liabilities</b>	<b>100</b>	<b>89.4</b>	<b>101.4</b>	<b>125.35</b>	<b>127.03</b>
Provisions	100	148.45	114.39	174.6	231.92
<b>Total CL &amp; Provisions</b>	<b>100</b>	<b>95.69</b>	<b>102.78</b>	<b>130.59</b>	<b>138.2</b>
<b>Net Current Assets</b>	<b>100</b>	<b>-80.45</b>	<b>293.69</b>	<b>735.44</b>	<b>97.28</b>
Miscellaneous Expenses	100	65	35	-	-
<b>Total Assets</b>	<b>100</b>	<b>116.1</b>	<b>158.76</b>	<b>166.67</b>	<b>205.57</b>

Source: Annual Reports of TNPL

**INTERPRETATIONS**

The trend analysis balance sheet of TNPL for the period of 2004-2005 to 2008-2009 reveals that;

- There was a drop in the Net block trend in the year 2005-2006 by 2.15% and thereafter there was a steady increase in the Net block over and above that of the base year (100%).
- The Net Current Assets trend were not that stable i.e. there was a decline in the year 2005-2006 then followed by an increase trend for the years 2006-2007 and 2007-2008 and later 2008-2009 had a decline in the trend.
- There was a steady growth trend in the Net worth of the company this was due to growth in the reserve of the company.
- There was a constant trend in the debt borrowing for the two financial years following the base year and later it showed growth trend in the years followed, year 2008-2009 recording the highest percentage trend in growth rate.

This indicates that the financial position of the Company was relatively stable though there could be problems with the liquidity of the company which can be financed by the reserves.

## FINDINGS

Perusing through the various reports and the analysis of financial statements of TNPL for the years March 2005 to March 2009 have revealed the following findings:

- ❖ Comparative income statements showed that there was an increase in the total income in every financial years, 2008-2009 being the leading growth of 12.66% than the rest which is attributed by the increase in the sales steadily, though there was increase in the total expenses which may be regarded to have been minimal toward selling efforts of the products of the Company.
  - ❖ Comparative income statements also showed that there was an increase in the net profit after tax in every financial year, except the year 2008-2009 by (4.82%).
  - ❖ Comparative Balance sheet showed that Net Current Assets were on an increase in the year 2004-2005 followed by decrease in the in the rest of the years though there was a negative increase in year 2008-2009. Net Block showed an increase in the years except the year 2004-2005 which had a decrease of 2.15%.
  - ❖ The Net worth of the company had a favorable increase in all the years which is due to increase in the reserves. The total debt had an increase throughout the years except the year 2007-2008 which had a decline of 1.24%.
  - ❖ Common size income statement had varied trend in the total income and yet there was a steady increase in the total income. Net profit showed volatility trend throughout the period even though the total income was on an increase.
  - ❖ The common size balance sheet, showed the variability of the Net current assets negatively though in the year 2005-2006 had a positive increase of 1.43%.
- The Net worth had a diminishing trend except the year 2007-2008 which showed a slight increase of 53.67%.
- ❖ There was a steady increasing trend in the side of the total Debt.
  - ❖ The trend analysis shows that the Company had a steady increasing trend in the net sales which is attributed to steady growth in the total income of the company, though the total expenses was on an increase. This reveals that the expenses at minimal rate.
  - ❖ Growth in Net Profit After Tax over and above 100% after the base year for the first four years which was followed by a decrease in the year 2008-2009 by 14.33% from the previous year's percentage. Year 2007-2008 had the highest percentage of 297.31%. This indicates that the profitability of the company was favourable.
  - ❖ There was a drop in the Net block trend in the year 2005-2006 by 2.15% and thereafter there was a steady increase in the Net block over and above that of the base year (100%). It's evident that the investment is on optimum level so that to maximum effectively the installed capacity.
  - ❖ The Net Current Assets trend were not that stable i.e. there was a decline in the year 2005-2006 then followed by an increase trend for the years 2006-2007 and 2007-2008 and later 2008-2009 had a decline in the trend.
  - ❖ There was a steady growth trend in the Net worth of the company this was due to growth in the reserve of the company.
  - ❖ There was a constant trend in the debt borrowing for the two financial years following the base year later there was a growth in the following years, 2008-2009 recording the highest percentage in growth rate.

## SUGGESTIONS

The management of TNPL should take the necessary steps to maintain the rapid growth of sale in future as this will keep the company at the better position than the stagnant growth as its increase will lead to future growth in the profits of the Company. Hence the investors will be attracted to such size and growth in the sales because large companies like TNPL will be in position to withstand business cycle.

Sales alone do not increase the earning capacity of the company but costs and other expenses also influence earning. Thus the company should ensure that the total cost is minimal in future in order to sustain its growth.

The company should try to maintain high operating efficiency with low break-even point to earn more than companies with high break-even point. Efficiency in the use of the fixed assets with raw materials, labor and management would lead to more income in its future operations.

The company should seek to address the negative net current assets have been eliminated so that to improve the future liquidity of the company so that it can be in the position to meet its working capital needs.

The management should address the issue of external financing such that it should reduce the debt and cost borrowing. If the company can be in position to earn more on borrowed fund than it can pay for it, the company will come out a head provided that it borrowed within prudent limit.

## CONCLUSION

Based on the analysis on financial statements of TNPL for the period of five years (2004-2005 to 2008-2009), the financial performance i.e. profitability, solvency and liquidity position was so impressive growing. Its financial position was also good, since there was appreciation of the reserves of the company which led to growth in the Net worth of the shareholders. Thus the overall performance of the company was remarkably good which indicates a future growth of financial position as well as its profitability.

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**NATURAL RESOURCE AND CIVIL WARS: A CRITICAL ANALYSIS**

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**ABSTRACT**

*After outbreak of number of civil wars in the decades of 1970's and onwards, there have been many studies and research's probing the relation between natural resource and civil war, which a number of countries faced during this period. Even though there have been a no. of quantitative (econometric) and qualitative research analysis on this issue, there appears to be little agreement on the validity of the resource-civil war correlation. Through this paper I wish to shed some light on; the mechanism of relationship between the natural resource and civil war, reasons for disagreement between various research's and what we can do in future to prevent or subside these unrests. First section of this paper deals with possible linkages through with natural resources of a country could inflict a civil war. Second section discusses results of various researches on this topic and why are there contradicting results. Third section shows though case by case analysis, why a generalised model to explain this relationship would fail. The last section deals with policies that could prevent or control the effects of the civil war.*

**KEYWORDS**

natural resources, civil war, policy measures, quantitative analysis, global action.

**SECTION 1: CAUSALITY BETWEEN NATURAL RESOURCES AND CIVIL WAR**

**T**he set of countries which faced civil wars in last 30 years or so, have mostly been characterized by poor and declining economies sitting on an abundance some type of natural resource. The question is why is then, some countries took advantage of such a position and others fell into the trap of conflicts and hence perpetual underdevelopment.

Essentially civil wars results in a country when there are rebellion's formed against the existing rule of the state. Factors explaining the rebellion's can be explained under three heads:-

**GREED REBELLION**

This type of rebellion is motivated by predation of rents from lootable (easily extractable or attainable) natural resources e.g. alluvial diamonds, opium, coca, timber. The rents are then used to finance the start up or for intensifying a violent civil war.

Its not only rebels that fall into this category, even policy makers and private actors could intensify or start a civil war by being victims of resource wealth myopia, producing a "get rich quick mentality". All in all, a rent maximising behaviour of economic agent's lead to either start up or further intensification of a civil war.

**GRIVENCE REBELLION**

It is motivated by hatred which might be intrinsic to ethnic and religious differences, or reflected objective resentments such as domination by an ethnic majority, political repression, or economic inequality. It suggests that resource extraction creates grievances among the local population, because of land expropriation, environmental hazards, insufficient job opportunities, and the social disruptions caused by labour migration; these grievances, in turn, lead to a civil war.

Rebel's further act to intensify these grievances as stimulating these issues would build public support for them and open up more sources to funding their agitation.

**SECESSIONIST REBELLIONS**

These movements are motivated by the allure of claiming the ownership of natural resources in a particular region. If resources are geographically concentrated in the peripheral regions of a country then the likelihood of resource based secessions is higher. Resources are also more likely to prove a separatist rebellion if they are extracted through a capital-intensive process, which offers fewer benefits to local unskilled workers and more benefits to the state and extraction firms.

**EXOGENOUS FACTORS**

There are a number of exogenous factors that can provoke or intensify a civil war. One of them being external support by foreign parties to start a civil war, because in return of this support, they might earn future contracts or rent sharing from the captured natural resources. These parties could be high profile businessmen, MNC's or other governments; which usually lend their support to rebels by funding their arms requirement. There could also be a case of direct intervention by these foreign parties by bidding for future rights over the captured natural wealth and thereby being a stakeholder of the outcome of the civil war. Civil wars could also be inflicted by deliberate actions of other countries, in order to change the current regime through military interventions or supporting massive coups, so that the alternate regime that comes to power formulates policies of resource exploitation.

All the four factors that I have mentioned are not independent of each other; they have feedback effects into each other. Greed- rebellions need to generate grievance for military cohesion, separatist movements are often generated due to grievances among particular section of society and these movements often backed through external support. Exogenous factors too play a major role in intensifying greed and grievance rebellions. Therefore pin-pointing a particular factor that results in a civil war is quite difficult. These feedback effects are the reason why different types of resources produce different levels of rents; and even same quantity of same resources can produce different quantities of rents in different countries.

Whatever may be the reason for the civil war, the end result of it is; poverty aggravation, public money being taken for military spending from basic social services, retarded economic growth. To end these sorts of conflicts what is important is to understand the factors that contribute to the risk of civil war. In the next section we are going to see different explanations by various researchers regarding factors contributing to onset, duration and intensity of civil war.

TABLE 1: VARIOUS STUDIES OF EXPLORING RELATION BETWEEN RESOURCES AND CIVIL WAR

Studies	Resource measure	Finding
Collier & Hoeffler	Primary exports/GDP	Increases likelihood of war
Collier & Hoeffler	Primary exports/GDP	Increases likelihood of separatist wars only
Elbadawi & Sambanis	Primary exports/GDP	Weak or no effect
Fearson & Laitin	Primary exports/GDP	No significant effect
Fearson & Laitin	Oil exporter(Dummy)	Increases likelihood of war
Hegre	Mineral exports/total exports	No significant effect
Hegre	Primary exports/GDP	Increases likelihood of war
Humphreys	Oil production	Increases likelihood of war
Humphreys	Oil reserves	No significant effect
Humphreys	Diamond production	No significant effect
Humphreys	Diamond production	Reduces war duration
De Soysa	Natural resource stocks/capita	No significant effect
De Soysa	Mineral stocks/capita	Decreases likelihood of conflict
De Soysa	Oil exporter(Dummy)	Increases likelihood of conflict

TABLE 2: COUNTRY WISE ANALYSIS OF CIVIL WAR AND ASSOCIATED RESOURCES

Country	Duration	Resources
Afghanistan	1990s	Opium, cannabis, gems
Angola	1975-99	Oil
Angola	1990s	Diamonds
Burma	1949-	Tin, gems
Burma	1990s	Opium, Gems
Cambodia	1990s	Cannabis, Gems
Colombia	1990s	Opium, coca
Democratic Republic of Congo	1960-65	Copper
Democratic Republic of Congo	1990s	Diamonds
Indonesia	1969-	Copper, gold
Indonesia	1975-	Natural gas
Liberia	1990s	Diamonds
Morocco	1975-88	Phosphates, Oil
Nigeria	1967-70	Oil
Papua New Guinea	1988-	Copper, gold
Peru	1990s	Coca
Russia	1990s	Diamonds
Sudan	1983-	Oil
Sierra Leone	1990s	Diamonds

## SECTION 2: QUANTITATIVE STUDIES AND THEIR CONTRADICTING RESULTS

There appears to be little agreement on the validity of the resource-civil war correlation. However, there seems to be a pattern emerging out of the results of quantitative studies and on which there is some consensus among scholars. These are:

- Oil exports are linked to onset of conflict, esp. separatist movements. It also been agreed upon that state and its officials suffer from bouts of Petromania – rentier psychology in presence of oil abundance
- Lootable natural resources like gemstones, alluvial diamonds, opium etc. don't lead to onset of a conflict but they tend to intensify and prolong the duration of civil war.
- Agriculture commodities seem to be uncorrelated with civil war

Now the question is why is there a disagreement among statistical studies over the resource – civil war correlation. The answer is that quantitative studies of natural resources and civil war have been characterised by problems of misspecification and spuriousness. First of all, let us take into consideration: the Independent variables taken by various studies:

### 1) RESOURCE EXPORTS / GDP

Now because civil wars do not officially "begin" until they have crossed some threshold of violence, they might be preceded by years of low-level hostilities that drive off manufacturing firms, producing a higher level of resource dependence before the civil war is coded as commencing. The natural resource-civil war correlation could also be spurious: both civil war and resource dependence might be independently caused by some unmeasured third variable, such as a weak rule of law- due to which the country might be unable to attract investment in manufacturing sector.

### 2) PRIMARY EXPORTS / GDP

In case of primary commodities, there are only particular types of natural resources that rent seekers target – as oil, opium, timber, coca etc. Primary commodities variable is overly broad, as it includes a wide range of raw materials and other commodities, some of which may be uncorrelated with conflict and hence pose a threat to the estimation of the particular study.

### 3) PARTICULAR NATURAL RESOURCE EXPORT / TOTAL EXPORTS

As found in almost all the cases of civil wars, most of the natural resources extracted are exported through illegal means and black markets. Therefore, taking into account, exports of a particular natural resource or production would not be accurate as these figures do not reveal the true picture.

Other reasons for conflicting results among studies are:

4) There is no consensus over a particular definition of civil war i.e. criterion of selecting that a civil war has occurred. Different scholars use different definitions based on number of violence related deaths. This could bring about differences in results among studies using different parameters of civil war onset, as natural resources tend to have a strong effect on large conflicts but no influence on small ones; and further, that one dataset uses narrow coding rules that classify only large conflicts as 'civil wars', while another uses broader rules that also classify both large and small conflagrations as civil wars. In this case, natural resources might be significantly associated with civil wars in the first dataset but not the second.

5) Datasets, used by different studies, differ in how they determine when a war has ended and also the fact that results could differ on basis of how a scholars deal with missing data.

In the next section, taking case studies of various countries, I would show how the general patterns that emerged from the quantitative analysis by various scholars can't be universally applied to explain all cases.



**SECTION 3: CASE STUDIES**

There are always some variables like illegal trade, military coups, external financing etc. which contribute to the onset and intensification of civil wars but are very difficult to measure for an econometric analysis. Further there are other factors like separatist rebellion which are country specific. Therefore the findings of any econometric analysis cannot be generalised to a larger set of countries.

We will consider the first pattern suggested by these studies regarding oil being a major factor contributing to the on-set of a civil war in oil abundant countries. Let consider a case study of **three oil exporting countries** that entered civil war:

**ANGOLA**

It was a classic case of greed rebellion wherein, a rebel group UNITA waged an offensive that brought more than 70 percent of the country-including all of its diamond-rich areas under its control. To fund a counteroffensive, the government sold off future exploitation rights to both oil fields (still under the government's control), and diamond areas (some of which were under rebel control). In one deal, the government hired International Defence and Security (IDAS), a private military services company, to retake the diamond fields near the DRC border; the government paid IDAS with a share of the contested diamonds.

This shows that it cannot be generalised in case of Angola that oil wealth caused the onset of civil war. Further this case also shows how state actions could be responsible for further intensifying the civil war.

**SUDAN**

In 1983, Sudanese president took some serious policy measures that upset the delicate balance between two major ethnic groups of the society. He put the newly discovered oil well of southern Sudan into jurisdiction of northern Sudan. As a consequence Sudan's people liberation army (SPLA) waged a separatist war against the regime.

This was one case in which policymakers badly designed policies regarding natural resource wealth caused grievance amongst certain section of the society and hence resulted in a secessionist rebellion. This case concurrent to the pattern that emerged from econometric studies.

**VENEZUELA**

It was observed that most of civil wars in oil rich countries started around the time of OPEC shocks, which resulted in oil being a more alluring resource to capture. Some scholars are of the view that oil boom weakens the state's fundamentals alluring its operators to fall prey to what is called petromania. However if we take into account Venezuela's case, we observe that despite its large boom effect, it remained to be Latin America's most politically stable country. The strength of its fundamentals can be judged from the fact that, in 2001, a massive CIA backed coup to remove president Hugo Chavez failed as the state officials refused to withstand the alternate regime whose aim was to exploit the oil reserves of the country. Venezuela now out performs the rest of Latin America in terms of GNP growth and all development indicators.

Therefore in light of these case studies we can argue that the results of econometric analysis cannot be generalised all countries.

Now we will consider a case study of **three mineral rich countries** and see if the claim by economists that minerals don't contribute to on-set of a civil war it just extends the duration and intensity of a civil war:

**SIERRA LEONE**

It presents a case in which greed and grievance worked together to provoke an outbreak of civil war in resource rich Sierra Leone. The war began in 1991, when Revolutionary United Front (RUF) first crossed border from Liberia, with massive support from Charles Taylor (president) with the aim of gaining access to Sierra Leone's diamond fields. The RUF propaganda complained about the resource exploitation by Freetown elite, however side by side it was also exploiting the captured resources itself, by selling them into world market through black markets.

On observing this case we can conclude that diamonds did play a major role in the outbreak of civil war.

**BOTSWANA**

This case depicts that mineral resource need not be a curse as, twenty five years ago, Botswana and Sierra Leone were similarly poor countries, both sitting on vast diamond reserves. Over the ensuing quarter century, Botswana harnessed this opportunity, becoming the fastest-growing economy in the world. Sierra Leone used the same resources to impoverish itself, experiencing the most rapid sustained decline of any country's development indicators.

**AFGHANISTAN**

In case of Afghanistan, before 1990, the rebels were fighting for the independence of their country from USSR and they used receive huge funds from CIA in form of arms, ammunition and money.

However, in the post Cold War era, this funding stopped but a civil war was still going on between the two major ethnic groups, therefore to fund this war the rebels now turned to extracting and exporting gemstones and opium through Pakistan, India and Iraq.

Now the econometric result doesn't fit into this case either as in this case initial civil war was started due to external assistance and the second one stated from sale of precious minerals of the country.

As in case of Oil countries, in case of Mineral rich countries we can also state that Minerals can lead to an initiation of a civil war and therefore an econometric result based on a generalised model cannot be extended to a larger set of countries.

Finally most scholars agree upon the result, from their econometric models, that Agricultural commodities have no effect on civil war. We will now take a case study of Cambodia and see if the generalised results are valid for it.

**CAMBODIA**

Although there are only a few countries in which agricultural commodities as natural resource provoked the on set of a civil war, the reason being, rents from most of agricultural commodities are not sufficient enough to fund a rebellion.

Timber had the clearest effect in Cambodia. Between 1989 and 1995, the rebel Khmer Rouge was able to maintain its viability as a military force owing to its sales of both timber and gemstones; when this revenue dropped off after 1995, the Khmer Rouge gradually fell apart, and by 1998 it had collapsed. Therefore it can be clearly observed that Timber played a major role in Cambodia's civil war.

By taking into account all the case studies I have mentioned, it can be analysed that results of a generalised econometric model cannot be extended most countries, as the underlying factors contributing to civil war in each case might be unique and the variables that affect the civil war might not be measurable. Therefore it's better to analyse each country's civil war independently.

We will now discuss in the next section, what step could be taken to avoid such unrests in future and how we could control an on-going civil war.

**SECTION 4: POLICY MEASURES TO AVOID AND CONTROL CIVIL UNREST**

Global efforts to curb civil war should be more focussed on reducing the viability- rather than just the rationale – of rebellion and for that the underlying reason for its outbreak in each case must be taken into consideration.

List of policy measures that could be undertaken in future to avoid such conflicts:

- Sharing of post conflict rents with rebels: The best way to break out of the conflict trap is to ensure that countries that have just ended one conflict do not quickly become enmeshed in another. The state could formulate a policy through which it shares the post conflict peace dividends with rebels. Such a strategy would be more successful in grievance based unrests and therefore cannot be universally applied.

In case of Congo Republic, Burma and Cambodia; such policy measures halted the civil war.

- In case of Greed based civil wars: If rebels hold a considerable amount of natural resources, then UN should force upon trade embargo's (for particular resources), to cut off the source of funding for the rebels and force them to surrender. However sanctions imposed must be stringent, as there were cases in the past where rebel groups of Sierra Leone and Angola were able to easily export conflict diamonds despite sanctions being imposed by UN. However, there are examples of stringent sanctions like Kimberley Process, which played a considerable role in subsiding civil war in Sierra Leone.



- Penalty Mechanism: Many rebel movements also receive illicit support from neighbouring governments, MNC's and wealthy individuals. Such support should be exposed and heavily penalised such that the cost incurred due to imposition of penalties should outweigh the benefits of rebel alliances.
- Military Action with help of foreign intervention or other wise should be avoided, as it leads to further intensification of the agitation by the rebels and at times creates massive public support for the rebels. We can observe this by analysing the effect of military action in case of Afghanistan wherein US intervention not only has intensified unrest in Afghanistan but has also had a spill over effect causing a massive unrest in Pakistan too.
- UN Security Council should set up a committee that looks into the matter of Natural Resource Wealth of each country and it should be vigilant enough so as to oversee that these resources are not exploited by a certain section of the society.

## CONCLUSION

In this paper we analysed how civil wars could be inflicted upon a resource rich country through various routes (Greed rebellion, Grievance rebellion, Separatist rebellion and exogenous factors). Further we saw results of various econometric models, giving contradicting results and we probe into the reasons for it. Then we considered different country cases wherein we concluded that results based on econometric models cannot be generalised to a larger set of countries as the underlying factors contributing to civil war was different in each case. Finally we conclude the paper, suggesting some policy measures that could be undertaken to avoid or control such conflicts in future.

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**EMERGENCE OF HEDGE FUNDS: IMPLICATIONS ON THE INDIAN CAPITAL MARKET**

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**ABSTRACT**

*Hedge fund is an aggressively managed portfolio of investments that uses advanced investment strategies such as leverage, long, short and derivative positions in both domestic and international markets with the goal of generating high returns. The present study gives the working process of hedge funds and the concerning fees structure in hedge funds and Investment strategy for hedging and the risk management.*

**KEYWORDS**

Hedge Funds, Mutual Funds, Capital Market

**INTRODUCTION**

A hedge fund can be defined as an actively managed, pooled investment vehicle that is open to only a limited group of investors and whose performance is measured in absolute return units. However, this simple definition excludes some hedge funds and includes some funds that are clearly not hedge funds. Hedge fund is an investment structure that manages a “private unregistered investment pool” and compensates the fund manager with an incentive-based fee based on a percentage of the profits earned by the fund. Legally, hedge funds are most often set up as private investment partnerships that are open to a limited number of investors and require a very large initial minimum investment. Investments in hedge funds are illiquid as they often require investors to keep their money in the fund for a minimum period of at least one year. They are typically organized as private partnerships and often located offshore, thus, saving on tax and regulatory issues. Also, the initial high investments and illiquid nature of funds keeps a check on the investment in hedge funds. Hedge funds, in general, are not registered. They have avoided registration by limiting the number of investors and requiring that their investors meet an income or a net worth standard. Furthermore, hedge funds are also prohibited from soliciting or advertising to the general audience. The primary aim of most hedge funds is to reduce volatility and risk while attempting to preserve capital, and deliver positive returns under all market conditions.

The present paper naming “Emergence of hedge funds: Implication on Indian capital market”, gives the knowledge about various aspects of hedge funds. The initial part enlighten on the definitions of hedge funds given by the authors. Later on we have discussed about the history and the emergence of hedge funds, earlier its types during 1960 to 1990. The next part of paper gives the features, size and growth of hedge fund industry. The other section of study gives the definition of Indian Capital Market and the features of it with the implications of hedge funds on it. Last part gives the conclusion of all study related to the hedge funds and the references concerning to the various reviews.

**FOR PRESENT PURPOSES, 3 MAIN CLASSES OF HEDGE FUNDS CAN BE IDENTIFIED**

- **Macro Funds**, which take large unhedged positions in national markets based on top-down analysis of macroeconomic and financial conditions. These funds take position in either mature or key emerging markets. They spread their holdings across equities, bonds and currencies. Some long-established macro funds find it cheaper to use conventional forwards and futures to take positions ahead of the market moves they foresee.
- **Global Funds**, which also take positions worldwide, but employ bottom-up analysis, picking stocks on the basis of individual companies' prospects.
- **Relative Value Funds**, which take bets on the relative prices of closely related securities (treasury bills and bonds, for example). They limit their holdings to the mature markets, because their expertise is limited to those markets. Relative value funds are also inclined to use derivatives.

The nomenclature “hedge fund” provides insight into its original definition. To “hedge” is to lower overall risk by taking on an asset position that offsets an existing source of risk. For example, an investor holding a large position in foreign equities can hedge the portfolio's currency risk by going short currency futures. This classic definition of speculation also includes the careful research of undervalued securities for long-term gain – what is informally termed “investing”. In informal contexts, the word speculation has acquired the implicit meaning of actions based on inconclusive evidence and the desire for short-term, high-risk profit. A hedge fund is a fund that can take both long and short positions, use arbitrage, buy and sell undervalued securities, trade options or bonds, and invest in almost any opportunity in any market where it foresees impressive gains at reduced risk.

This theoretical definition of a hedge fund also explains the “hedge” terminology. Suppose that the traditional actively-managed fund has been constructed so that its exposures to market-wide risks are kept the same as in the benchmark. Then the implied hedge fund has zero exposures to market wide risks, since the benchmark and active portfolio exposures cancel each other out, i.e., hedging.

**The Emergence of Hedge Funds****The Origin of Hedge Funds**

The year was 1949, World War II just ended, and the world was in a unified celebration. Alfred Winslow Jones, a sociologist, was working on assignment for Fortune magazine investigating fundamental and technical research on forecasting the stock market. The article reported on a new class of stock market timers, in addition to unorthodox methods of investing, all to achieve positive returns and call the market. Jones was very intrigued by these trading methods and became absolutely consumed with his own concept of an investment fund.

**The First Hedge Fund**—In 1949, Alfred Winslow Jones started an investment partnership that is regarded as the first hedge fund. Remarkably many of the ideas that he introduced over fifty years ago remain fundamental to today's hedge fund industry. Jones structured his fund to be exempt from the SEC regulations described in the Investment Company Act of 1940. This enabled Jones' fund to use a wider variety of investment techniques, including short selling, leverage, and concentration (rather than diversification) of his portfolio. Jones committed his own money in the partnership and based his remuneration as a performance incentive fee, 20% of profits. Both practices encourage interest alignment between manager and outside investor and continue to be used today by most hedge funds. Jones pioneered combining shorting and leverage, techniques that generally increase risk, and used them to hedge against market movements and reduce his risk exposure. He considered himself to be an excellent stock picker, but a poor market timer, so he used a market-neutral strategy of having equal long and short positions. Jones' long-short strategy rewarded exceptional stock selection and created a portfolio that reacted less to vagaries of the overall market. He also used the capital made available from short selling as leverage make additional investments.

**Size and Growth of the Hedge Fund Industry**—Since hedge funds are structured to avoid regulation, even disclosure of the existence of a hedge fund is not mandatory. There is no regulatory agency that maintains official hedge fund data. There are private firms that gather data that are voluntarily reported by the hedge funds themselves. This gives an obvious source of self-selection bias, since only successful funds may choose to report. Some databases combine hedge funds with commodity trading advisers (CTAs) and some separate them into two categories. Also, different hedge funds define leverage inconsistently, which affects the determination of assets under management (AUM), so aggregate hedge fund data are best viewed as estimates hedge fund. Clearly, AUM is not the whole story in understanding the “size” of a hedge fund, or of the hedge fund industry.

**CHARACTERISTICS OF HEDGE FUNDS**

Although financial service providers, regulators and the media commonly refer to “hedge funds,” the term has no precise legal or universally accepted definition. The term generally identifies an entity that holds a pool of securities and perhaps other assets that does not register its securities offerings under the Securities Act and which is not registered as an investment company under the Investment Company Act. Hedge funds are also characterized by their fee structure, which compensates the adviser based upon a percentage of the hedge fund’s capital gains and capital appreciation. Hedge fund advisory personnel often invest significant amounts of their own money into the hedge funds that they manage. Hedge funds typically engage one or more broker-dealers to provide a variety of services, including trade clearance and settlement, financing and custody services.

**Following are some key characteristics of Hedge Fund**

- Hedge funds utilize a variety of financial instruments to reduce risk, enhance returns and minimize the correlation with equity and bond markets. Many hedge funds are flexible in their investment options (can use short selling, leverage, derivatives such as puts, calls, options, futures, etc).
- Many hedge funds have the ability to deliver non-market correlated returns.
- Many hedge funds have as an objective consistency of returns and capital preservation rather than magnitude of returns.
- Most hedge funds are managed by experienced investment professionals who are generally disciplined and diligent.
- Pension funds, endowments, insurance companies, private banks and high net worth individuals and families invest in hedge funds to minimize overall portfolio volatility and enhance returns.
- Most hedge fund managers are highly specialized and trade only within their area of expertise and competitive advantage.
- Hedge funds benefit by heavily weighting hedge fund managers’ remuneration towards performance incentives, thus attracting the best brains in the investment business. In addition, hedge fund managers usually have their own money invested in their fund.

**Advantages of Hedge Fund Investing**

- Aggressive investment strategies such as short-selling or using borrowed money to buy more assets (leverage buying) can legally be utilized.
- Huge gains in the millions are the potential reward for investing in hedge funds
- Many hedge fund strategies have the ability to generate positive returns in both rising and falling equity and bond markets.
- Inclusion of hedge funds in a balanced portfolio reduces overall portfolio risk and volatility and increases returns.
- Huge variety of hedge fund investment styles – many uncorrelated with each other – provides investors with a wide choice of hedge fund strategies to meet their investment objectives.
- Academic research proves hedge funds have higher returns and lower overall risk than traditional investment funds.
- Hedge funds provide an ideal long-term investment solution, eliminating the need to correctly time entry and exit from markets.
- Adding hedge funds to an investment portfolio provides diversification not otherwise available in traditional investing.

**Limitations to Hedge Fund Investing**

- Only the wealthiest individuals can participate in hedge funds.
- Hedge funds are extremely risky and millions of dollars can be lost in the blink of an eye.
- The performance fee for the investment manager may encourage them to take bigger risks with your money.
- There are very few government regulations overseeing hedge fund investments.

**HEDGE FUNDS Vs. MUTUAL FUNDS**

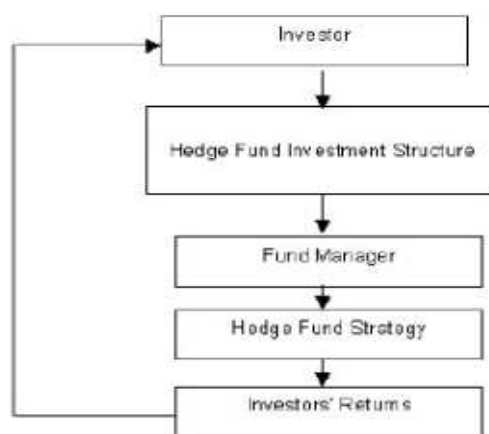
Hedge funds are institutional investors, just like mutual funds. However, this is where the similarity ends. Typically, only high net worth individuals and institutions invest in hedge funds, while mutual funds are the main investment vehicle of the small and retail investors. Additionally, mutual funds are highly regulated institutions that file a lot of information like inflows and outflows, breakup of investments and other statutory details with the regulatory authority. Hedge funds took some heat from the credit crisis as liquidity and transparency became critical factors in investment decision-making. It’s fair to say hedge funds continued to deliver decent returns to investors, but how do they compare to mutual funds if we focus on performance and risk alone ..

**COMPARISON OF MUTUAL FUNDS AND HEDGE FUNDS**

Feature	Mutual fund	Hedge fund
<b>Number of Owners</b>	Very large (in Thousands)	Few high net worth individuals or institutions
<b>Regulations</b>	Regulated strictly by capital market regulator	Minimum regulation
<b>Transparency</b>	Publishes annual reports and monthly information sheets that show investment and profit	Information given only to investors
<b>Investment Style</b>	Invests equity, debt and derivatives, but follow a long strategy	Follows many investment strategies, including going short on some securities
<b>Management Fee</b>	Fee not linked to performance. Usually a percentage of assets managed.	Fee linked to performance managers charge a high percentage of profit made
<b>Management Ownership</b>	Usually, fund manager does not own a substantial portion of the fund	The fund manager owns a large part of fund

**HEDGE FUND STRUCTURE**

To achieve pre-set returns target, these funds do not restrict themselves to their country of origin and operate on a global scale. Hedge fund managers typically seek absolute positive investment performance. This means that, the hedge funds target a specific range of performance, and attempt to produce targeted returns irrespective of the stock market trends. This is in contrast to investments by mutual funds, where success or failure is often measured in terms of performance in relation to a stock index, like the Sensex or Nifty in India.



## THE HEDGE FUND STRUCTURE

The hedge fund structure helps the investor turn market opportunities into investment returns. The investor brings funds to the industry, these funds are pooled in investment structures called hedge funds, and this structure gives the investor access to hedge fund managers who provide investment expertise and use alternative investment strategies:

For investors, this structure –

- helps pool assets with those of other investors
- is a way to access talented hedge fund managers
- is a method to access the alternative investment strategies used by the manager

To achieve this "absolute return", hedge fund managers have the flexibility to incorporate different strategies and techniques that may include:

**Short-selling:** Sale of a security that you do not own, with the anticipation of purchasing it in the future, at a reduced cost.

**Arbitrage:** Simultaneous buying and selling of a financial instrument in different markets to profit from the difference between the prices

**Hedging:** Buying/selling a security to offset a potential loss on an investment.

**Leverage:** Borrowing money for investment purposes.

### Hedge Fund Fee Structure

#### Performance-based Fees

Hedge fund managers are compensated by two types of fees: a management fee, usually a percentage of the size of the fund (measured by AUM), and a performance-based incentive fee, similar to the 20% of profit that Alfred Winslow Jones collected on the very first hedge fund. Fung and Hsieh (1999) determine that the median management fee is between 1-2% of AUM and the median incentive fee is 15-20% of profits. Ackermann et al. (1999) cite similar median figures: a management fee of 1% of assets and an incentive fee of 20% (a so-called "1 and 20 fund"). The incentive fee is a crucial feature for the success of hedge funds. A pay-for-profits compensation causes the manager's aim to be absolute returns, not merely beating a benchmark. To achieve absolute returns regularly, the hedge fund manager must pursue investment strategies that generate returns regardless of market conditions; that is, strategies with low correlation to the market. However, a hedge fund incentive fee is asymmetric; it rewards positive absolute returns without a corresponding penalty for negative returns. Empirical studies provide evidence for the effectiveness of incentive fees. Liang (1999) reports that a 1% increase in incentive fee is coupled with an average 1.3% increase in monthly return.

### Hedge Fund Investment Strategies

Hedge funds do not constitute a homogeneous asset class. The bulk of hedge funds describe themselves as long / short equity, perhaps because this is the least specific of the available descriptions, but many different approaches are used taking different exposures, exploiting different market opportunities, using different techniques and different instruments. Although classification systems vary, hedge funds may generally be classified according to broad style and strategy categories, including:

#### Strategy Categories for Hedge Funds

Hedge funds do not constitute a homogeneous asset class. The bulk of hedge funds describe themselves as long / short equity, perhaps because this is the least specific of the available descriptions, but many different approaches are used taking different exposures, exploiting different market opportunities, using different techniques and different instruments: Hedge funds use a wide variety of investment styles and strategies. Even among hedge funds that claim to use the same investment strategy or invest within the same asset class, there is a wide range of investment activities, performance and risk levels. Because the investment activities of hedge funds are so diverse, the hedge funds assigned to a particular investment category are likely to exhibit less similarity than more traditional investment vehicles, such as registered investment companies. A hedge fund may pursue several strategies at the same time, internally allocating its assets proportionately across different strategies. Although classification systems vary, hedge funds may generally be classified according to broad style and strategy categories, including:

#### Market Trend (Directional/Tactical) Strategies

##### Macro

These funds may take positions in currencies (often unhedged) based on their opinion of various countries' macroeconomic fundamentals. For example, if a country's economic policies look inconsistent and its ability to sustain its exchange rate appears questionable, macro funds may take positions designed to profit from devaluation, usually by selling the currency short.

##### Long/Short

These funds try to exploit perceived anomalies in the prices of securities. For example, a hedge fund may buy bonds that it believes to be under priced and sell short bonds that it believes to be overpriced. No matter what happens to overall interest rates, as long as the spread between the two narrows, the fund profits. Conversely, if spreads widen, gains can turn quickly into losses. Long/short equity is the most frequently used strategy among hedge funds.

Long-short portfolios are rarely completely market-neutral. They typically exhibit either a long bias or short bias, and so have a corresponding market exposure (positive or negative). They are also likely to be exposed to other market-wide sources of risk, such as style or industry risk factors.

#### Event-Driven Strategies

Event-driven strategies exploit perceived mispricing of securities by anticipating events such as corporate mergers or bankruptcies, and their effects.

Merger (or risk) arbitrage is the investment in both companies (the acquirer and takeover candidate) after a merger has been announced. Until the merger is completed, there is usually a difference between the takeover bid price and the current price of the takeover candidate, which reflects uncertainty about whether the merger will actually happen. For instance, a fund manager may buy the takeover candidate, short stock of the acquirer, and expect the prices of the two companies to converge. In this case, there may be substantial risk that the merger will fail to occur.



**Distressed Securities**

These funds may take long and/or short positions to attempt to profit from pricing anomalies among securities issued by companies going through bankruptcy or reorganization.

**Risk/Merger Arbitrage**

These funds attempt to profit from pending merger transactions by, for example, taking a long position in the stock of the company to be acquired in a merger, leverage buyout or takeover and simultaneously taking a short position in the stock of the acquiring company.

**Arbitrage Strategies****Convertible Arbitrage**

This strategy involves taking long positions in a company's convertible bonds, preferred stock, or warrants that are deemed to be undervalued while taking short positions in the company's common stock.

**Fixed Income Arbitrage**

Hedge funds in this category seek to provide stable, positive returns by exploiting the relatively small pricing inefficiencies of fixed income instruments. For example, a newly issued ("on the run") 10-year Treasury bond may trade at a slightly higher price than a similar previously issued ("off-the-run") 10-year Treasury bond. A hedge fund may seek to profit from this disparity by purchasing off-the-run Treasuries and selling on-the-run Treasuries short.

**Statistical Arbitrage**

Funds in this category attempt to profit from pricing inefficiencies identified through the use of mathematical models. Statistical arbitrage attempts to profit from the likelihood that prices will trend toward a historical norm.

**Relative Value**

Relative value funds use market-neutral strategies that take advantage of perceived mispricing between related financial instruments. Fixed-income arbitrage may exploit short-term anomalies in bond attributes, such as the yield curve or the spread between Treasury and corporate bonds. Convertible arbitrage profits from situations where convertible bonds are undervalued compared to the theoretical value of the underlying equity and pure bond. In these cases, the hedge fund manager takes long positions on the convertible bond and shorts the underlying stock. Statistical arbitrage involves exploiting price differences between stocks, bonds, and derivatives (options or futures) while diversifying away all or most market-wide risks.

Situations for relative-value arbitrage often occur with illiquid assets, so there may be added liquidity risk. Gains on individual trades made be small, so leverage is often used with relative-value strategies to increase total returns.

**RISK MANAGEMENT****Sources of Risk**

The name "hedge funds" seems to imply risk reduction (since "hedging" is a risk reduction technique), but this need not be the case. It is better to think of hedge fund as a fund that hedges away any risk not related to its speculative strategy. The riskiness of a hedge fund therefore depends intimately upon its strategy. This contrasts with a traditional active fund where most of the risk comes from the benchmark, and a minority from the active portfolio strategy. Using our theoretical definition of a hedge fund as the "purely active" component of a traditional fund, total risk measurement of a hedge fund is theoretically equivalent to active risk measurement of a traditional active fund. To summaries, for a hedge fund, total risk measurement and active risk measurement are the same, and they are theoretically equivalent to active risk measurement of a traditional active fund. As mentioned above, hedge fund risk exposure is strongly dependent on the investment strategy chosen. In a well-run hedge fund, the only risks remaining in the portfolio are those that are intimately connected to the fund's speculative strategy, or those that it is impossible or too costly to hedge away. Some hedge funds incur liquidity risk, such as those specializing in emerging market equities or distressed assets, which target illiquid securities that maybe overlooked and mispriced by other analysts. Often, the profitable trading strategies of arbitrage-based hedge fund strategies include active positions insecurities with limited or uncertain liquidity. Hence liquidity risk is of particular importance in risk measurement for hedge funds. Hedge funds have two sources for credit risk. A hedge fund that specializes in distressed securities or fixed-income arbitrage is exposed to the default risk of debt securities that it owns. More significantly, most hedge funds use leverage, which subjects them to the other type of credit risk, the need to repay the financial institutions that extend hedge funds their credit. Under extremely adverse market conditions, a hedge fund may face both credit and liquidity crises simultaneously. In an emergency (such as margin calls), the hedge fund may not be able to obtain additional credit and may be forced to obtain cash quickly. Other hedge funds, and similarly positioned traders, may be facing similar circumstances. A large imbalance between willing buyers and desperate sellers needing cash may compel a hedge fund to sell its portfolio below "fair value".

**Measuring Hedge Fund Risk**

There are two standard approaches to measuring portfolio risk: the variance based approach and the value-at-risk approach. These two approaches are not incompatible, and many portfolio managers use both. The variance of a portfolio return is the expected squared deviation of the return from its mean. If the portfolio return has a normal distribution, the variance of the return completely describes the riskiness of the return. Although normality is not necessary for application of the variance-based approach, the approach becomes less useful if returns differ very sharply from a normal distribution. Derivative securities and portfolios that included derivatives are notable for their lack of normality.

The variance-based approach is most powerful if returns have a linear factor structure, so that the random return of each asset can be decomposed into linear responses to a small number of market-wide factors plus an asset specific risk. A linear factor model is a useful model for simple stock and bond portfolios, but not for portfolios that include derivatives. Derivatives have a non-linear relationship to their underlying security, and so a portfolio including derivatives (except plain-vanilla futures contracts) cannot be modeled with a linear factor model.

Because of the lack of normality and the inadequacy of factor models, variance-based approaches do not work well for portfolios that include derivatives. Most (but not all) hedge funds include derivatives. Some types of hedge fund strategies, for example, betting on currency or interest rate realignments, lead to highly non-normal portfolio returns and poor factor model fit even without any derivatives exposure. It is clear that some other approach instead of (or in addition to) the variance-based approach is needed to measure the risk of hedge funds.

In the aftermath of the LTCM collapse, the President's Working Group on Financial Markets (1999) recommended use of the value-at-risk (VaR) approach to monitor hedge fund risk and guard against extreme events. VaR is defined as the maximum loss to be sustained within a given time period for a given level of probability.

**IMPLICATIONS TO INDIAN CAPITAL MARKET****Different Players in Indian Capital Market****Mutual Funds**

Mutual fund is a form of collective investment that pools money from many investors and invests their money in stocks, bonds, dividends, short-term money market instruments, and/or other securities. In a mutual fund, the fund manager trades the fund's underlying securities, realizing capital gains or losses, and collects the dividend or interest income. The investment proceeds are then passed along to the individual investors. The value of a share of the mutual fund, known as the net asset value per share (NAV), is calculated daily based on the total value of the fund divided by the number of shares currently issued and outstanding.

**Foreign Institutional Investor**

Foreign Institutional Investor [FII] is used to denote an investor - mostly of the form of an institution or entity, which invests money in the financial markets of a country different from the one where the institution or entity was originally incorporated. An investor or investment fund that is from or registered in a country outside of the one in which it is currently investing. Institutional investors include hedge funds, insurance companies, pension funds and mutual funds. The term is used most commonly in India to refer to outside companies investing in the financial markets of India. International institutional investors must



register with the Securities and Exchange Board of India to participate in the market. One of the major market regulations pertaining to FII involves placing limits on FII ownership in Indian companies.

#### **Retail Investors**

Retail investors according to SEBI rules are those investors whose investment corpus is not more than Rs. 1 lakh. In India, retail investors play a very small role in capital markets. This is mainly due to the risk aversion. The retail investors are mainly concentrated in four metros and Ahmadabad. Ahmadabad has major chunk of retail investors who are very much active in the stock investors.

But slowly this scenario is changing with the increase in the number of Demat accounts through which these investors mainly invest. Slowly the retail investors' confidence has increased in the Indian Stock markets. Their total share in the market capitalization is around 3% which is very much less compared to that of USA where it is around 20-25%. But with Indian capital markets gaining popularity, there is high scope that the participation of retail investors will gradually increase.

#### **HEDGE FUND IN INDIA**

With the notification of SEBI (Mutual Fund) Regulations 1993, the asset management business under private sector took its root in India. In the same year SEBI, also notified Regulations and Rules governing Portfolio Managers who pursuant to a contract or arrangement with clients, advise clients or undertake the management of portfolio of securities or funds of the client. We have however, no information about any hedge funds domiciled in India. Further, on account of limited convertibility, offshore hedge funds have yet to offer their products to Indian investors within India.

The fiscal year (2003-2004) has seen a spectacular increase in FII activities in Indian market. Till this report is filed FIIs have already invested US \$ 10 bn. during this year alone which is a record. Robust economic fundamentals, strong corporate earnings and improvement in market micro structure are driving the FII interest in India. Investors all over the world are keen to come to Indian market. From informal discussions with institutional investors including some reputed and well established hedge funds, one could gauge the extent of interest they have about Indian markets. During the discussions they have requested whether India, like other Asian emerging markets, can provide a regulatory framework that will allow them to directly invest in Indian market in a transparent manner.

#### **WHY HEDGE FUNDS ARE LOOKING AT INDIA**

Unlike China, where stock markets are not well developed and company information is relatively opaque, experts note that India has much of the necessary institutional framework for hedging, including a regulatory regime and good information disclosure standards. "Investors look at multiple markets around the world," says Marti G. Subrahmanyam, a professor of finance at New York University's Stern School of Business. "There is a sense that the changes taking place in India are going to result in superior performance in the economy, and that the corporate sector will be a big beneficiary. Now, obviously the Chinese economy is larger, but the capital markets are better developed in India. If you look at the stock market, even if you were to include Hong Kong, the market cap in China relative to its GDP is lower. So if you're looking for investment opportunities where you won't suffer the consequences of illiquidity, India is the more attractive opportunity".

In addition, notes Subrahmanyam, India is the largest market for single stock futures in the world and has a well developed derivatives market in index futures and options. "This gives you hedging possibilities not available in other emerging markets," he says. There is also enough liquidity in the big stocks for [domestic] investors to sell short. Even though there are restrictions, these are less binding than in other emerging markets.

#### **MARKET BENEFITS OF HEDGE FUNDS**

Hedge funds can provide benefits to financial markets by contributing to market efficiency and enhance liquidity. Many hedge fund advisors take speculative trading positions on behalf of their managed hedge funds based extensive research about the true value or future value of a security. They may also use short term trading strategies to exploit perceived mis-pricings of securities. Because securities markets are dynamic, the result of such trading is that market prices of securities will move toward their true value. Trading on behalf of hedge funds can thus bring price information to the securities markets, which can translate into market price efficiency. Hedge funds also provide liquidity to the capital markets by participating in the market. Hedge funds can provide benefits to financial markets by contributing to market efficiency and enhancing liquidity. Many hedge fund advisers take speculative trading positions on behalf of their managed hedge funds based on extensive research about the true value or future value of a security. They may also use short-term trading strategies to exploit perceived mispricing of securities. Because securities markets are dynamic, the result of such trading is that market prices of securities will move toward their true value. Trading on behalf of hedge funds can thus bring price information to the securities markets, which can translate into market price efficiencies. Hedge funds also provide liquidity to the capital markets by participating in the market. Hedge funds play an important role in a financial system where various risks are distributed across a variety of innovative financial instruments. They often assume risks by serving as ready counter parties to entities that wish to hedge risks. For example, hedge funds are buyers and sellers of certain derivatives, such as securitized financial instruments, that provide a mechanism for banks and other creditors to un-bundle the risks involved in real economic activity. By actively participating in the secondary market for these instruments, hedge funds can help such entities to reduce or manage their own risks because a portion of the financial risks are shifted to investors in the form of these tradable financial instruments. By reallocating financial risks, this market activity provides the added benefit of lowering the financing costs shouldered by other sectors of the economy. The absence of hedge funds from these markets could lead to fewer risk management choices and a higher cost of capital. Hedge funds also can serve as an important risk management tool for investors by providing valuable portfolio diversification. Hedge fund investment strategies are typically designed to protect investment principal. Hedge funds frequently use financial instruments (e.g., derivatives) and techniques (e.g., short selling) to hedge against market risk and construct a conservative investment portfolio -- one designed to preserve wealth. In addition, hedge fund investment performance can exhibit low correlation to that of traditional investments in the equity and fixed-income markets. Institutional investors have used hedge funds to diversify their investments based on this historic low correlation with overall market activity.

In addition, hedge funds investment performance can exhibit low correlation to that of traditional investments in the equity and fixed income markets. Institutional investors have used hedge funds to diversify their investments based on this historic low correlation with overall market activity.

#### **IMPLICATIONS OF HEDGE FUND**

##### **Impact of Hedge Funds on Indian Capital Market**

Hedge funds are present in India in a large way through Participatory Notes i.e. sub accounts of FII's. Participatory note is just an instrument used by foreign funds and investors who are not registered with Securities & Exchange Board of India but are interested in taking exposure to Indian markets. Many people argue that a hedge fund has a short investment horizon and that its investments would be volatile — hot money — while the regulated FII has a longer horizon and its investments would be less volatile. However, as finance theory teaches us, correlations are usually more important than volatility. Investments by regulated FIIs tend to be highly correlated because they face common redemption pressures and common home country regulatory environments. Hedge funds by contrast tend to be contrarian and their strategies are less correlated with each other and with regulated FIIs. In other words, hedge funds are less subject to herding behavior than regulated FIIs.

The Hot Money that the hedge funds have brought into Indian markets has brought more liquidity in the market. Due to their investments though volatility has increased but it has negated the herding mentality of most FIIs. For example during the recent slump in the world and Indian markets in Feb and March is attributed to the herding mentality of FIIs. But this was largely negated due to the investments by Hedge funds in the Indian markets. Consider this fact during the month of March, 2007 Japanese FIIs were net sellers in Indian markets to a tune of \$2 billion in a couple of days because of the Yuan Carry of Trade. Due to this the benchmark index has lost around 10% in a couple of days. But this was negated due to the inflow of Hedge funds and these hedge funds brought some relief by pumping their money into the market because of which the Index again surged back to comfortable levels.

Following are the areas of Hedge Fund Implication:-

1. On Investors
2. Corporate
3. The sell side- Brokers and Financial Institutions

**INVESTORS**

One would expect India to be considered as a destination for hedge fund investment, rather than a market for raising corpus. With RBI's monetary policy 2007-2008 announced on April 24, hedge funds have come within reach of the Indian market. The RBI announced that it has increased the present limit for individuals for any permitted current or capital account transaction from \$50,000 to \$100,000 per financial year. Though one would believe that the hedge funds are still not accessible; a closer look at the hedge fund industry would reveal that with increasing number of fund of funds the minimum investment cap is well within the \$100,000 mark. Moreover, SEC the regulator in US is no more stringent regarding the maximum cap of 100 investors in a Hedge Fund. Given this, HNIs have an altogether new Risk-Return matrix before them. The bigger question that arises is should RBI be monitoring the flow. Supporters of Hedge Funds claim the investors in these funds are HNIs and Institutional Investors who are well aware of the market scenario, unlike the retail investor. They argue Caveat Emptor or Buyers beware. Though, this would have worked in US, in the Indian scenario one is yet to find mature investing. The wealth being created was the result of investors riding the wave. Thankfully the wave has been in its favour during the last 5 years. One has to understand that, though the Indices are surging, Indian market is still not mature enough. Thus investing in an asset class without virtually any regulation, transparency and disclosure might not be the best step at this stage. Given that, even SEC is not clear of its policy towards Hedge Funds its Indian counter part should put in a lot of groundwork before hedge funds are marketed freely in India. SEBI should design appropriate framework, paying particular attention to the marketing of these products to ensure that investors are adequately apprised of the associated risks.

**CORPORATE**

Hedge funds are an important set of investors for a corporate (especially ones with poor fundamentals and pronounced asymmetries) because of their risk appetite. However, corporations are always in a quandary when issuing capital to these funds. The prime reason being the volatility they bring with them. Private equity investors usually invest with a lock-in period and have a strategic motive behind their investment, while Hedge funds investment in distressed companies have no such restrictions (though investment in hedge funds come with a lock-in period). Private Equity invests to avail normal returns, returns from organic growth of the organization in sales, profits etc. On the other hand Hedge funds look for abnormal returns, asset mis-pricings and purchase with an intention to sell immediately.

**THE SELL SIDE- BROKERS AND FINANCIAL INSTITUTIONS**

The LTCM debacle exposed the vulnerability of brokerage houses and financial institutions to the hedge fund strategies. In their pursuit of larger market share, brokers and banks often underscore how hedge fund activities can harm them and markets. As a consequence to the losses on leveraged positions, liquidity shortages come into play, which further aggravate the situation. With excessive leverage, even a moderate price swing could force hedge funds to liquidate their leveraged positions to meet margin calls, potentially leading to ripple effects across a number of markets. Thus, leveraged market risk can, if not supported by adequate liquidity reserves or borrowing capacity, force a fund to default on its obligations to prime brokers and other financial institutions. If the fund's size is large, the spill-over effect on markets could be grave. In an environment where the default rate of hedge funds across the globe is 10%, such instances are not difficult to find. The recent example on Sub-prime crisis in US is an apt example. The short term approach of hedge funds is questioned many a times by the regulators and the retail investors. An inquisitive reasoning would highlight that such strategies are harmful not only for the funds themselves, but also to other financial institutions. With the entry of these fast-moving funds into the market, other institutional players might be forced to realign their investment style to a shorter duration, in order to remain competitive. They would book profits regularly due to the fear of a sudden sell-off by hedge funds. This, in turn, will further boost speculative trading. Every investor/investor class has his/its own risk appetite. For instance, risk taking capability of a mutual fund would be higher than a pension fund. Given an environment, where the market could rise and fall at the will and fancy of the hedge funds, they would not be motivated to remain invested for a long period, which defeats the larger purpose of Investment.

**CONCLUSION**

Hedge funds are an exciting innovation to the range of professionally managed investment vehicles. Hedge funds concentrate almost exclusively on the speculative role of investment management, that is, the attempt to outperform the market average by superior security valuation and successful trading strategies. Hedge funds are in a sense the opposite of index tracking funds, which simply try to earn the market average return with minimal management cost. Theoretically, one can view a traditionally managed active fund as a combination of a hedge fund and an index tracking fund. The index tracking fund is the "purely passive" component and the hedge fund is the "purely active" component of the traditional active fund.

Hedge funds offer very strong incentives for the portfolio manager by linking the manager's compensation tightly to the realized return of the fund. Hedge funds minimize information leakage and maximize flexibility by avoiding full disclosure and granting the manager very wide latitude in strategy and trading decisions. These policies differ from those of the traditional fund, which must meet regulatory guidelines intended for protection of the investment public. Hedge funds restrict access to exempt investors only, in order to avoid these regulatory constraints.

Hedge funds confront the traditional fund sector with a strong challenge. They have attracted more attention and media interest than the traditional sector, they have drawn heavily on the pool of talented fund managers due to their lucrative compensation packages, and they have attracted a very strong (but still proportionately small) flow of capital. There is also some evidence that hedge funds have outperformed on average in terms of their risk-reward profile, although this evidence is not yet conclusive.

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## TRAINING AND DEVELOPMENT PROGRAMMES IN TAMILNADU STATE TRANSPORT CORPORATION LIMITED, KUMBAKONAM

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### ABSTRACT

*Training and development programmes in Tamilnadu state transport corporation, training as 'basic' or 'advanced' and interest in training was examined for technical and nontechnical content areas. Age, and frame for technical training and a two-way interaction between performance orientation, self-efficacy, and frame for nontechnical training. Implications for future research as well as framing training to enhance training interest are discussed.*

### KEYWORDS

Training and development programmes, TNSTC, Transport.

### INTRODUCTION

The global competition and swiftness of changes emphasize the importance of human capital within Tamilnadu State Transport Corporation, as well as the swiftness and ways of knowledge gaining of that capital. In the economy where uncertainty is the only certainty, knowledge is becoming a reliable source of sustained competitive advantage. Knowledge is becoming basic capital and the trigger of development. Previously built on foundations of possessing specific resources and low costs, present day competition is based on knowledge possessing and efficient knowledge management.

### OBJECTIVE OF TRAINING

The main objectives of training are to bridge the gap between the existing the performance ability and desired performance. The training objective is desired in accordance with the company goals and objectives. The general objectives of any training programmes are.

- To include the basic knowledge and skill to the new entrants
- To enable the employee to meet the changing requirements of the job and the organization.
- To demonstrate the employee the now technical and ways of performance the job or operations.

### METHODS OF TRAINING

- a) On the job methods
- b) Off the job methods

In this training an employees will be placed in a new job and is told how it is to be performed.

#### ON THE JOB METHODS

##### Vestibule Training or Industrial Plan Training

This is otherwise known as classroom training, which is imparted with the help of equipment and machine identical to those in use at the place of work.

##### Stimulation

It is more or less like vestibule training. The trainee works in closely, duplicated real job conditions. Is essential in cases in which actual on the job practices is expensive, might result in serious injury a cost error or resources, e.g. in aeronautical industry.

##### Demonstration

Under this method, there will be a description and demonstration of how to do a job the performs the activity himself going through a step explanation of the "why", "what" he is going.

##### Job Instruction Training

This method is a four step instructional process involving preparation, presentation, performance try and follow.

##### Coaching and Mentoring

Coaching establishing one on one relationship between trainees and supervisors, which offer workers, continued guidance and feedback on how well they handling their task.

##### Job Rotation

It means the movement of training from one job to another. This helps him to understand how the job functions. Training is periodically.

#### OFF THE JOB TRAINING

In off the job training a trainee has to leave his place of working and devotes his entire firm for training persons. During this period, the training does not contribute anything to the organizational.

##### Special Courses and Lectures

Special courses and lectures are knowledge based training method. In these programmes and effort is made to expose participants to concept and theories, basic principles, and pure and applied knowledge in any subject area.

##### Conference

In order to overcome the limitations of lectures of method which emphasis only one way of communication, that is, from trainer to trainee, their trainee, many organization have adopted guide discussions type of conferences in their training programmes.

##### Cases

Case method of training has been developed by havard business school of USA it is one of the most commonly used training methods not only for business executives but also for management institutes.

##### Role Playing

Role playing is a training technique which can be used very easily as a supplement to various training techniques. The concept of role playing has been drawn from drama and plays in which actors play the various roles.

##### Management Games

Management games are used to simulate the thinking of people to run on organization or its department. The game can be used for developing skills for a variety of purpose like investment strategy, marketing strategy, production strategy, collective bargaining etc.

##### Brain Storming

Brain storming is a technique to stimulate for idea generation applied by os born in 1938 in American company, the technique is now widely used by many company's educational institutions, and other organization for building ideas.



On born has defined brain storming simply as using the brain to storm the problem.

- A problem is given to a group engaged in brain storming session.
- Each member is asked to given ideas through which the problem can be solved.
- The members are expected to put their ideas for problem solution without taking into consideration any limitations financial.

#### In Basket Exercise

In basket exercise is a simulation techniques designed around the "incoming mail" of a manager. A variety of situation is presented in this which would actually dealt a manager in his typical working day.

#### Sensitivity Training

Probably on other training technique has attracted so much attention or controversy in recent years as sensitivity training. Many of its advocates have an almost religious zeal in the enchantment with the training experience.

#### Training and Development

There are three terms which are used in the contact of learning. Training, development and education. Often some confusion arises in using the terms training and development. Many people see both as synonymous but many people make difference between the two.

### REVIEW OF LITERATURE

1. **Cody B. Cox and Margaret E. Beier (2009)**, the study titled, "The moderating effect of individual differences on the relationship between the framing of training and interest in training" The moderating effect of individual differences on the relationship between framing training as 'basic' or 'advanced' and interest in training was examined for technical and no technical content areas. Participants were 109 working-age adults (mean age = 38.14 years, SD = 12.20 years).
2. **Gary Blau, Greg Gibson, Melissa Bentley and Susan Chapman (2011)**, the study titled, "Testing the impact of job-related variables on a utility judgment training criterion beyond background and affective reaction variables" We tested the incremental impact of a job-related set of variables for explaining a utility judgment training effectiveness variable, that is, course completion skill preparedness, beyond background and course-related variables. Our respondents were two different emergency medical service samples, 415 basics and 742 paramedics, from the 2008 US Longitudinal Emergency Medical Technician Attributes and Demographic Study
3. **Jelena Vernic (2007)**, made an attempt to study the "employee training and development And the learning organization" The global competition and swiftness of changes emphasize the importance of human capital within organizations, as well as the swiftness and ways of knowledge gaining of that capital. In the economy where uncertainty is the only certainty, knowledge is becoming a reliable source of sustained competitive advantage.
4. **Junaidah Hashim (2008)**, the research work titled "Factors influencing the acceptance of web-based training in Malaysia: applying the technology acceptance model" Companies in Malaysia are beginning to use web-based training to reduce the cost of training and to provide employees with greater access to instruction. However, some people are uncomfortable with technology and prefer person-to-person methods of training. This study examines the acceptance of web-based training among a convenience sample of 261 employees in Malaysia using the technology acceptance model.
5. **Jean-François Gadeceau (2012)**, made an attempt to study the "Selection for participation in training and its potential effect on transfer: encouraging good practice" It is widely recognized that workers who have received training may not apply or fully apply the knowledge and skills they have learned through training to the job they do (Grossman and Salas, 2011). Consequently organizations may not benefit or fully benefit from the investment they have made in training.
6. **Muhammad Aslam Khan (2011)**, the present paper investigation issues of "Impact of Training and Development on Organizational Performance" Training and Development, On the Job Training, Training Design and Delivery style are four of the most important aspects in organizational studies. The focus of current study is to understand the affect of Training and Development, On the Job Training, Training Design and Delivery style on Organizational performance.
7. **Maria Jose Chambel and Filipa Castanheira (2012)**, in his article "Training opportunities and employee exhaustion in call centres: mediation by psychological contract fulfillment" The aim of this study is to analyse psychological contract fulfillment as a mechanism through which training affects stress in call centres. The hypotheses were tested on a sample of 412 call centre operators, using structural equation modeling to analyse their survey responses.
8. **Olaniyan, Lucas. B. Ojo (2008)**, the research study title "Staff Training and Development: A Vital Tool for Organizational Effectiveness" Training is a systematic development of knowledge, skills and attitudes required by employees to perform adequately on a given task or job. New entrants into organizations have various skills, though not all are relevant to organizational needs. Training and development are required for staff to enable them work towards taking the organization to its expected destination.
9. **Susanne Jodlbauer, Eva Selenko, Bernad Batinic and Barbara Stiglbauer (2011)**, the research study title "The relationship between job dissatisfaction and training transfer" The high rates of training transfer failure that prevail still puzzle practitioners as well as researchers. The central aim of the present study is to analyze the relatively under- researched role of job dissatisfaction in the training transfer process.
10. **Zenon Arthur Siloran Udani (2009)**, the article titled "International briefing 21: training and development in Macao" Macao is a special administrative region (SAR) of the People's Republic of China. It was a Portuguese enclave for 442 years. The Portuguese settled in Macao in the 16th century and administered the region until 1999. Following an agreement signed on 13 April 1987, Portugal formally handed over Macao to China on 20 December 1999. And on that same day, Macao's own Basic Law began to operate.

### TNSTC KUMBAKONAM REGION KUMBAKONAM

I have done the article at Tamilnadu state transport corporation, Kumbakonam regions are as follows.

#### BRANCHES

The branches of the Kumbakonam region are,

- Kumbakonam (mofussil)
- Kumbakonam town 1<sup>st</sup> division
- Kumbakonam town 2<sup>nd</sup> division
- Nannilam
- Thanjavur
- Mayiladudurai
- Sirkali
- Poraiyur
- Chidambaram
- Nagapattinam
- Karaikkal
- Thiruthurai poondi
- Vedharanyam
- Thiruvarur
- Mannarkudi
- Peravoorani

**RESEARCH DESIGN**

The study describes the existing motivation program and procedures adopted in the motivation so the research can adopt descriptive research design. As for that the researcher has made an attempt to study different factors involved in motivation and its casual relationship with basic variables.

The aims it's to obtain complete and accurate information in the said studies. The research design must enough provision for protection and maximum reliability.

**DESCRIPTIVE RESEARCH DESIGN**

Descriptive research studies which are concerned with descriptive the characteristics of a particular individual or of a group.

- Rigid design, design must make enough provision for protection against bias and must maximize reliability.
- Probability sampling design (random sampling) pre planned design for analysis.
- Structured or well thought out instrument for collection of data.
- Advance decision about operational procedures.

**SAMPLING DESIGN**

Sampling design is a definite plan for obtaining sampling for giving population.

**METHODS OF SAMPLING**

In this article, the researcher has chosen a method of design namely 'probability sampling' under this type, no specific principle bias is followed with selecting sampling element.

**SAMPLE SIZE**

To study the effectiveness if motivation in Ranbaxy laboratory ltd-Chennai. Research connected has concentrated low level employee only. I have chosen the sample size (150) under lottery techniques methods of sampling.

**COLLECTION OF DATA**

There are several ways of collecting the appropriate data depends on cost, time and resources normally data is called be classified as.

**PRIMARY DATA**

Primary data is known as the data collected for the first time through filed survey. examples, questionnaire.

**SECONDARY DATA**

- Secondary data means that already available example.
- Management books, magazines and news paper.
- Report prepared by research scholar
- Journals.

**TOOLS USED FOR PRIMARY DATA COLLECTION**

The researcher developed the questionnaire for data collection with the respondent details.

The questionnaire are closed one because employees always preoccupied with their work.

So for the convenience the questionnaire is framed at once. It was handed to them and instructed to give the appropriate answers.

**STATISTICAL TOOLS USED FOR DATA ANALYSIS**

For data processing and data analysis the researcher adopted simple percentage calculation.

- ✓ Chi square test
- ✓ One way ANOVA

**DATA ANALYSIS AND INTERPRETATION**

The results of the analysis of the collected data are presented below

**TABLE – 1: DETAILS OF THE STAFF STRENGTH IN 2012**

DEIGNATION	NO. OF. STAFF
Administration	440
Conductors	2930
Drivers	2839
Technical staff and Technical supervisor	930
<b>Total</b>	<b>7139</b>

Sources: Annual Report of TNSTC, Kumbakonam 2010-2011.

**TABLE – 2: NUMBER IF EMPLOYEES**

YAEAR	NUMBER IF EMPLOYEES
2001-2002	6782
2002-2003	6456
2003-2004	6371
2004-2005	5718
2005-2006	5719
2006-2007	7192
2007-2008	7048
2008-2009	7253
2009-2010	7253
2010-2011	7139

Sources: Annual Report of TNSTC, Kumbakonam 2010-2011.

From the above table, shows that the number of employee by the study period during the year 2001 to 2002 is increased. Gradually 2002 to 2003 to 2004, 2004 to 2005 the strength is decreased. But there is no change in the employees. During the year of 2005 to 2006, 2006 to 2007, 2007 to 2008, 2008 to 2009, 2009 to 2010, and 2010 to 2011, also the strength is reduced going to retirement. The corporation due to government policy is reduced not filled the vacancies.



TABLE-3L TRAINING PROGRAMS IN TNSTC

S.No	Training Programs	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Total
1	Training programs at Tamilnadu	25 (16.66%)	50 (33.33%)	73 (48.66%)	2 (1.35%)	0 (0%)	150 (100%)
2	Training Programs (On the job)	26 (17.35%)	47 (31.33%)	68 (45.33%)	5 (3.33%)	4 (2.66%)	150 (100%)
3	Training Programs (Off the job)	24 (16.00%)	52 (34.66%)	72 (48.00%)	2 (1.34%)	0 (0.00%)	150 (100%)
4	Involvement and participation	19 (12.66%)	73 (48.66%)	58 (38.68%)	0 (0%)	0 (0%)	150 (100%)
5	Good supervisor skill	34 (22.66%)	62 (41.33%)	53 (35.35%)	1 (0.66%)	0 (0%)	150 (100%)
6	Growth and development	33 (22.00%)	70 (46.66%)	45 (30.00%)	2 (1.34%)	0 (0%)	150 (100%)
7	Technical knowledge and skill	23 (15.33%)	53 (35.33%)	74 (49.34%)	0 (0%)	0 (0%)	150 (100%)
8	Refreshment	27 (18.00%)	46 (30.67%)	77 (51.33%)	0 (0%)	0 (0%)	150 (100%)
9	Medical facility	31 (20.68%)	49 (32.66%)	69 (46.00%)	1 (0.66%)	0 (0%)	150 (100%)
10	Training are cordial	27 (18.00%)	68 (45.33%)	55 (36.67%)	0 (0%)	0 (0%)	150 (100%)

1. The table shows Training programs at Tamilnadu in TNSTC corporation 48.66% the respondents are moderate, 33.33% are in agree, 16.66% are strongly agree, and 1.35% are disagree.
2. The table shows Training Programs(On the job) in TNSTC corporation 45.33% of the respondents are moderate, 31.33%are in agree, 17.35% are strongly agree, 3.33% are disagree and 2.66% are strongly disagree.
3. The table shows Training Programs(Off the job) in TNSTC corporation 48.00% of the respondents are moderate, 34.66%are in agree, 16.00% are strongly agree and 1.34% are disagree.
4. The table shows Involvement and participation in TNSTC corporation 48.66% of the respondents are agree, 38.68%are in moderate, and 12.66% are strongly agree.
5. The table shows Good supervisor skill in TNSTC corporation 41.33% of the respondents are agree, 35.35%are in moderate, 22.66% are strongly agree, and 0.66% are disagree.
6. The table shows Growth and development in TNSTC corporation 46.66% of the respondents are agree, 30.00%are in moderate, 22.00% are strongly agree, and 01.34% are disagree.
7. The table shows Technical knowledge and skill in TNSTC corporation 49.34% of the respondents are moderate, 35.33%are in agree, and 15.33% are strongly agree.
8. The table shows Refreshment in TNSTC corporation 51.33% of the respondents are moderate, 30.67%are in agree, and 18.00% are strongly agree.
9. The table shows Medical facility in TNSTC corporation 46.00% of the respondents are moderate, 32.66%are in agree, 20.68% are strongly agree and 0.66% are disagree.
10. The table shows Training are cordial in TNSTC corporation 45.33% of the respondents are agree, 36.67%are in moderate, and 18.00% are strongly agree.

### SUGGESTIONS

- ✓ The department gives more concentration about identifying the number of training.
- ✓ The manager will be offered more incentives oriented training programs.
- ✓ The manager should create the positive attitude among the employees.
- ✓ The department should create the positive attitude oriented programs.
- ✓ The department must offer more outdoor oriented trending programs.
- ✓ The departments evaluate the training performance periodically.

### CONCLUSION

The present review suggests that these benefits range from individual and team performance to the economic prosperity of the TNSTC Corporation. To understand these benefits of training, we adopted a multilevel, multidisciplinary, and global perspective. We also included a discussion of how to maximize the benefits of training. These factors include paying attention to needs assessment and pre training states of trainees (e.g., trainee motivation), training design and delivery (e.g., advantages of using error training), training evaluation (e.g., documenting training success differently depending on the stakeholder in question), and transfer of training (i.e., the importance of interpersonal factors).

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**INDIGENIZATION OF MILITARY HARDWARE: A NECESSITY FOR INDIA?**

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**ABSTRACT**

*This paper analyses why and how of indigenization Defence technology and Military hardware has become a necessity for India in the 21<sup>st</sup> century, if it wishes to see itself as major global power of the century. Currently as a nation we are heavily dependent on our strategic partners for military hardware which compromises our national security and entails a huge economic burden. This limitation has been duly identified by our policy makers and there has been a marked shift in our defence procurement policy which now puts major thrust on indigenization. Finally, the paper highlights how the new manufacturing policy, the private sector, and foreign direct investment in defence sector can help to evolve a self-reliant and robust defence sector.*

**KEYWORDS**

Defence, DPP, DRDO, FDI, GDP.

**LIST OF ABBREVIATIONS**

- DRDO: Defence Research and Development Organization
- FDI: Foreign Direct Investment
- GDP: Gross Domestic Product
- MMRCA: Medium Multi-Role Combat Aircraft
- MoD: Ministry of Defence
- PSU: Public Sector Undertaking
- ToT: Transfer of Technology

**INTRODUCTION**

Perhaps the foremost responsibility of any nation state, let alone an aspiring world power, is robust national security. To be dependent on other nations for military hardware, systems and technology is tantamount to a dependency on others for national security. However, this is precisely the kind of situation India finds itself in today. Given the fact that India is located in what can perhaps be called the most dangerous, uncertain, tense and challenging neighborhood in the world in terms of strategic considerations, it can ill-afford to be at the wrong end of a dependency regarding the acquisition and smooth functioning of weapon systems. India's relations with Pakistan continue to remain tentatively poised while China's defence and strategic assertions have rattled many in India's establishment. Against this backdrop, the "Ten Year Plan for Self-Reliance in Defence Systems", which was formulated in the early 1990s<sup>1</sup>, aimed at reducing the import content of defence procurement to 30 per cent by 2005. However, this percentage continues to hover around 70% till today. This essay explores the various facets of this issue and analyzes ways in which India could hope to achieve an acceptable level of indigenization in defence manufacturing given the context of our global stature ambitions.

India is the largest arms importer in the world and accounted for 12% of global arms purchases during the period 2008-12. India's imports during this period were 109% higher than those of China, the 2nd largest arms importer in the world. On the one hand, China has been able to translate defence imports into a thriving domestic defence industrial complex and become the world's fifth largest exporter of weapons, while India on the other hand continues to import up to 70% of its defence requirements<sup>2</sup>. The fact that the top 3 weapons importers in the world are India, China and Pakistan is a reflection of how troubled a neighborhood India finds itself in. While India has made efforts at military modernization by spending money on foreign acquisitions, a big limitation is the fact that most countries in the world are unwilling to share the latest state-of-the-art technologies with other countries. India's dependency on foreign firms for defence equipment renders it vulnerable in a number of ways. A stoppage of assembly lines abroad could jeopardize our defence preparedness. Further, this provides a tool for diplomatic leverage for the countries that these firms are located in during times of geo-political tensions. Another element of the discussion to be kept in mind is that for a country of India's stature to be involved in a client-patron relationship with vending countries is an anomaly that must be eradicated.

**THE STATUS OF THE PROBLEM**

The country's defence research establishment comprises of research laboratories and other establishments of the Defence Research and Development Organisation in addition the Defence Public Sector Units involved in the production military equipment. The grouse of the defence establishment is that the armed forces seek to purchase from overseas, denying them opportunities to design and develop machinery indigenously. Further, the armed forces are accused of keeping unrealistic expectations and constantly changing qualitative requirements. The armed forces, on the other hand, point out the inordinate delays and unrealistic targets taken up by domestic manufacturers. They also attribute changes in qualitative requirements to the need to keep pace with newer technologies in the face of delayed deliveries. The delays are the most important factor prompting the armed forces to acquire equipments and systems from abroad as any delays in important machinery have implications for overall preparedness, maintenance and operational availability. Therefore, in a very crude sense, it can boil down to a trade-off between indigenization and modernization, and while the defence production establishment places great value on the former, for the armed forces it is the latter that really matters.

The sky-high levels of defence imports have borne out serious repercussions for the country's economy as well through the widening of the Current Account Deficit (the difference between a country's imports and exports). The CAD touched a record level of 4.8% of GDP for 2012-13. Apart from the concerns already laid out, arms purchases from abroad consume scarce foreign exchange as well.

One of the reasons for delays can be associated with the overall state of manufacturing industry in India. Manufacturing contributes only 16% of GDP and some defence experts like Sandip Dikshit from The Hindu have opined that in light of this number, an indigenization level of 30% is in fact very good. Inadequate physical infrastructure and a debilitating policy environment combine to make manufacturing a high-cost industry in India. The private sector has not been encouraged sufficiently to come forward and contribute in this field. It is often pointed out that the private sector has an important role to play in the defence sector and must step up to the plate. However, companies in the private sector have not shown the willingness to invest heavily in an industry that is capital intensive and where the returns are uncertain and come after long gestation periods.

Acquiring the requisite technology has been a major challenge in the face of international restrictions and unwillingness of advanced countries to share state of the art know-how.

Also, the FDI limit of 26% in defence production is too low to induce and foreign manufacturer with worthwhile technology to invest in India. As a result, FDI in this field has been abysmally low. Another important factor is the poor management of defence PSUs. The public sector management is usually not as accountable for its performance as its counterparts in the private sector. This creates an atmosphere that does not place a premium on timeliness. India's overall expenditure on defence is low given the security environment that the country operates in. also, R&D in particular deserves greater attention on the part of the government.

#### **DEFENCE PROCUREMENT PROCEDURE (DPP)**

In April 2013, major changes in the Defence Procurement Procedure (DPP) were approved by the Defence Acquisition Council (DAC), the apex decision-making body of the Ministry of Defence. The changes in the DPP were made with the twin objectives of "infusing greater efficiency in the procurement process and strengthening the defence manufacturing base in the country"<sup>3</sup>. The changes are important as they pay ample testimony to the fact that the government is cognizant of the fact that indigenization of military hardware is crucial for India in the years to come. The modifications in the policy contain provisions aiming at the elimination of the virtual monopoly of the public sector in defence production as they will henceforth not be automatically nominated for maintenance and repair of systems obtained from outside the country as private firms would also be allowed the opportunity to win these contracts. According to the Defence Minister, "Preference for indigenous procurement has now been made a part of DPP through an amendment that provides for a preferred order of categorization, with global cases being a choice of last resort."<sup>4</sup> Therefore, 1<sup>st</sup> choice would be given to domestic manufacturers and foreign procurements shall henceforth be undertaken only as the last option.

### **THE WAY FORWARD**

#### **IMPROVING THE OVERALL STATE OF MANUFACTURING IN INDIA**

The National Manufacturing Policy aims to increase the contribution of manufacturing to GDP to 22% by 2020 as against 16% today. It uses the cluster mechanism in the form of National Manufacturing Zones that will provide tax incentives and other back and front-end infrastructure. However, for manufacturing to pick-up, all the dimensions of physical infrastructure have to be invested-in in a symbiotic manner. The state of India's ports, roads, airports and very importantly power, have to improve drastically in order to make Indian manufacturing cost-effective and globally competitive. It is important to recognize the complementarities and inter-relationships between these sectors. For example, the power sector has been hampered due to lack of coal-linkages. Only when the general state of physical infrastructure in India improves can we aspire to be globally competitive in manufacturing in general and defence manufacturing in particular.

#### **INVOLVING THE PRIVATE SECTOR**

A growing realization that the public sector alone could not fulfill India's defence production requirements prompted the Ministry of Defence in 2001 to push for the entry of private sector into the field. However, this sensible policy change has not shown any tangible results on the ground more than a decade since then. Part of the reason for the inadequate indigenization despite the entry of the private sector is the complete lack of clarity regarding what indigenization actually entails. The MoD has so far not undertaken the process of identifying critical technologies – technologies that are crucial in order for a particular system to continue running. Under these circumstances, foreign original equipment manufacturers (OEMs) pay lip service to indigenization through low-tech products like packaging and casings. Experts have pointed out that a focus on mere numbers and components instead of design expertise and integration of systems and sub-systems into a weapons system would mean that we do not have any real control over the product cycle even if we manage to indigenize to the level of 70% or more<sup>5</sup>.

Another initiative that was supposed to stoke the indigenisation process was a public version of the Armed Forces' 15-year Long Term Integrated Perspective Plan (LTIPP), which would lay out a roadmap of the military's equipment requirements over a period of the next 15 years. This would provide guidance to the defence industry in terms of channeling its R&D and technology investments. However, the document that has been put out has failed to excite industry for lack of clarity regarding the exact specifications of the products, the costs acceptable, and the timeframe within which individual products need to be inducted. The MoD would do well to alleviate these concerns of manufacturers in future versions of the document.

The "make" procedure, under which private firms would compete for the development of future weapons' platforms with the government contributing 80% of the required expenditure on development, can be an important component of India's strategy to build a globally competitive domestic private defence manufacturing industry.

The private sector has a crucial and large role to play in the efforts at defence indigenization. In a recent decision, the Ministry of Defence in concurrence with the Air Force, decided that the aircraft to replace the 40-year vintage Avro HS-748 medium transport aircraft (used by the IAF for communications and troop movement) would be designed, developed and manufactured in the private sector<sup>6</sup>. Requests for proposals (RFPs) are to be sent out to a number of private sector companies. The company chosen thereafter will be the lead production house and will have the option to choose a partner developer from India or abroad. This is a step in the right direction and will galvanize more competition in the domestic supplier market, objections from defence PSUs like HAL notwithstanding. One important reason why the private sector has been unenthusiastic in investing in the defence industry is the restriction on exports. Defence manufacturing is capital intensive and restricting the market to just a single buyer is a major disincentive for producers, both private as well as public. India should take a leaf out of China's book who has become one of the leading defence exporters of the world in spite of being in a position similar to that of India's today till only about a decade ago.

#### **ACQUIRING TECHNOLOGY AND THE QUESTION OF FDI**

One constant factor inhibiting the modernization of India's indigenous defence industry is the lack of access to high-end technology from abroad on account of unwillingness of countries to share the same. However, with the rapid surge in the quantum of defence imports, India has acquired considerable buyer's clout and should use it to the hilt in a monopsonistic fashion. As mentioned earlier, India is now the largest arms importer in the world and should therefore no longer be satisfied with a buyer-seller kind of relationship. Companies like Dussault and Grippin, which have been competing for the MMRC contract worth USD 12 billion, have no outstanding orders from outside their respective countries. In fact the former would only survive if it gets the Indian order. Therefore, India wields considerable bargaining power and should try and bargain hard for transfer of technology and joint development. Instead, the focus should be on technology transfer and joint development, testing and marketing of futuristic platforms. Some good beginnings have been made in this area. Examples are the Fifth Generation Fighter Aircraft development with Russia and the Barak missile with Israel. Also, India can bring its significant software prowess to the table. Today software already comprises over 50 per cent of the total cost of a modern defence system<sup>7</sup>. In the years ahead, this is expected to go up to almost 70 per cent as software costs increase and hardware production costs decline due to improvements in manufacturing processes. India's vast pool of software experts can make it a lucrative proposition for potential partners to engage with India in high-end research and development. Further, India's own efforts in R&D in general and defence R&D in particular, must be scaled up. Currently, India spends only 0.8% of GDP on R&D. There is considerable scope to increase it, by at least another percentage point. Moreover, India's defence budget is still languishing at less than two per cent of India's GDP – compared with China's 3.5 per cent and Pakistan's 4.5 per cent plus US military aid. Under these circumstances, it won't be possible for the defence establishment to undertake the level of modernization and indigenization that is called for by the troubled neighborhood of India. There is a case for moving away from populist expenditures and reorienting them so that the foremost task of national security is not compromised with.

An important source of technology, in any field, is Foreign Direct Investment. However, this source has been kept untapped in India as far as the defence sector is concerned by the limit of 26% imposed by the government. Although in a recent decision, it was decided that 49% FDI would be allowed but on a case-by-case basis, this qualification has translated into a subdued response from investors. "On May 17, at the Defence Expo, Suraksha 2013, in Kerala, the then DRDO Chief V.K. Saraswat gave a strong dissent and said that raising FDI cap would lead to foreign control over indigenous capability. This was well countered and a question was raised, "Where is the indigenous capability?" Indeed, insulation from foreign investment is one of the important factors for the lack of technology upgradation in the sector. The Naresh Chandra Committee has suggested an increase in the FDI limit in the defence sector to attract better foreign technologies. The Ministry of Commerce and Industry has been pushing for increasing the cap of 26% on FDI in defence. However, this proposal has met stiff resistance from

the MoD. The Wall Street Journal mentioned about the report submitted by R.K. Mathur, the then Secretary Defence Production, to the Parliament on April 29, that stated, "The stand of the Defence Ministry has always been that beyond 26 per cent FDI at this stage, would be a compromise on the security of the country. Whether it is 49 or 74 per cent, we believe that there would not be full transfer of technology (ToT)." Mathur is right that implementation of ToT has been poor." One of the reasons why China has been more successful in ensuring ToT is the highly centralized and focused approach to defence deals. India should establish a permanent National Security Commission mandated by an act of Parliament to oversee the development of military and non-military capacities for national security. This agency could also push for ToT clauses to be built into arms purchase and FDI contracts.

#### REFOCUSING ENERGIES

Over the last 17 years, a mere 29% of DRDO's products have been inducted into the forces. While these products are capital and time-intensive, such high levels of time over-runs suggest a need for change. Various committees have argued for the entry of the private sector in defence manufacturing and this essay has highlighted the need for the same as well. The DRDO should only focus on developing high-end futuristic technologies lest India continue to play catch-up in the field of defence manufacturing with the rest of the world. The effort should be to develop those state-of-the-art technologies that no strategic partner is likely to share; for example, ballistic missile defence (BMD) technology. Non-critical and current technology development should be left to the private sector. In a gradual fashion, the Universities and the IITs should also be co-opted in the area of defence R&D. "Recommendations of the Rama Rao Committee to privatize sections of Defence Research and Development Organisation (DRDO) and the Kelkar Committee to corporatize ordnance factories need action." India's defence establishment needs to be made more accountable for its performance, particularly in terms of timeliness. Thus, a reorientation of focus, co-option of private sector and educational institutes of repute, and reforms in the management of DRDO and DPSUs are crucial elements of the overall strategy of defence indigenization in India.

#### CONCLUSION

India can ill-afford to be dependent on foreign entities for the smooth functioning of current defence systems, as well as the acquisition of modern weapons platforms. Not only do foreign countries withhold the latest technologies, it also acts as a drain on scarce foreign exchange reserves, provides a tool of diplomatic leverage to seller-nations, traps India in a patron-client relationship and compromises national security and strategic autonomy. Therefore, there is need for action in a number of areas to ensure India achieves autonomy to a significant degree in the production of modern defence equipment. India needs to leverage its status as the world's largest arms purchaser by incorporating ToT and joint development clauses into contracts. Also, there is a strong case for allowing higher levels of FDI into the country and pushing ToT through a centralized focused agency. The DRDO and DPSUs need to improve both in terms of management and focus, and privatization to a certain extent can help alleviate the problems. Besides, the energies and market dynamism of the private sector need to be harnessed by easing of restrictions and provision of adequate incentives. All of these steps if and when taken would go a long way towards ensuring that India acquires a significant level of military hardware indigenization which is a necessary component of the process of India becoming a world power to reckon with.

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**A STUDY ON THE STATUS OF FACULTY DEVELOPMENT ACTIVITIES IN ENGINEERING INSTITUTIONS****S. MURALI****RESEARCH SCHOLAR****NATIONAL INSTITUTE OF TECHNICAL TEACHER TRAINING AND RESEARCH  
CHENNAI****ABSTRACT**

*Growth and prosperity of a country greatly depends on the higher education system which prepare the young minds to face the global challenges. An ever increasing complexity of the higher education, together with advancement in new approaches to teaching/learning and growing educational demands of 21<sup>st</sup> century learners require teaching faculty to acquire broad range of skills in addition to subject knowledge. Hence the quality attributes of faculty gains significance in the light of developments in technology and innovations in educational practices. An effort is made through this study to understand the issues in professional development of faculty members in private engineering institutions Tamilnadu, India. The study explores the adequacy of professional development opportunities available to the teaching faculty, the extent to which faculty make use of the activities available for professional development in engineering institutions, role of faculty administrators in helping faculty development activities across the institutions. The results of the study show that teaching faculty has begun to realize the importance of faculty development activities as a vehicle to move up in their career ladder and to equip the millennial students. The study recommends that that faculty administrators need to play a key role in designing, promoting faculty development activities in a continuous manner.*

**KEYWORDS**

Faculty, Faculty development, Professional development, Training and development.

**1. INTRODUCTION**

Higher education in India has profoundly changed in the last couple of decades with an impressive growth in number of institutions and explosive student enrollment. India became the third largest higher education system next to China and U.S. The rapid expansion of higher education has brought several issues related to standards of its quality to the forefront. Many experts from academia severely criticize that the massive growth is mainly quantitative one and it needs to be compounded by qualitative inputs.

One of the immediate threats facing the higher education in India is the poor quality of faculty members to cater the increasing student needs. The quality of education greatly depends on the knowledge, skill and abilities of teaching faculty. Many studies have proved that quality of faculty members directly impacts the students and the quality of education greatly depends on the skill and abilities of teaching faculty (Rahman & Ahmed, 2009).

Educators of the present generation can no longer act as 'sage on the stage' as they used to be in rather they need be proactive in dealing with students. Thus educators are increasingly assumes the new role of serving as 'guide by the side' to develop the millennial students.. Faculty are expected to be highly knowledgeable of their profession, required to maintain high academic standards and possess the ability to teach all types of learners through a variety of teaching strategies, and be accountable for each student's academic progress. Hence it becomes significantly important that the issues in skills and training of teachers to impart quality education to the students needs to be taken into account (Rahman and Ahmed, 2009). Rapidity of change of 21<sup>st</sup> century forces faculty to become obsolete within a short time if they fail to update themselves by participating in professional development activities. Faculty development refers to any effort to improve teacher's knowledge, skills, and abilities so that they perform their roles more effectively (Gall Meredith, 1994). It is strongly believed that faculty development activity can be the ladder for faculty members to reach the pinnacle of glory in their teaching endeavor.

**2. STATEMENT OF THE PROBLEM**

Above discussions clearly provide a broad picture of the issues surrounding the quality of faculty members in engineering institutions. Faculty development activities present a viable option to improve the quality and competency of faculty members. This study was an attempt to investigate the current trend in faculty development activities in engineering institutions. The current study was an attempt to explore to what extent the faculty members take advantage of the faculty development opportunities aimed at helping them to improve their skills, knowledge and abilities. The study highlighted to what extent the faculty administrators(head of the department, deans, director and principal) acknowledges the importance of faculty development activities and integrate into the academic plan.

**3. RESEARCH QUESTIONS**

Based on the statement of the problem following research questions were framed to address the problems identified.

- What is the current status of faculty development activities in engineering institutions?
- What are the various faculty development opportunities available to faculty of engineering institutions?
- What is the extent of support by the institutions to promote faculty development activities?
- What is the general perception of faculty administrators about faculty development activities?

**4. DESIGN OF THE STUDY**

A single method was not sufficient to elicit the views and experiences of all the stakeholders involved in faculty development process. Hence it was proposed to use the Mixed Method of research which encompasses both quantitative and qualitative research paradigm in the same study. The strength of quantitative method lies in its interpretation in the form of rich data and advantage of qualitative methods are its support for deep analysis in exploring the phenomenon under study (Creswell 2003).

**4.1 Tools**

A survey questionnaire aimed to collect data from faculty related to the level of participation in faculty development activities was designed by the investigators. The necessary input for developing the tool was obtained by seeking expert's opinion and reviewing the existing research literature. As a part of the study an interview schedule was prepared to seek the opinion and experiences of faculty administrators related to issues in faculty development activities in their institutions. The format of the interviews was more of an unstructured one to elicit maximum response from the participants (Best, 1959). The investigators employed field notes method for collecting interview data from the respondents.

**4.2 Design of Quantitative Survey Instrument**

Quantitative questionnaire was designed to enumerate detailed information from faculty members regarding their level of participation/involvement in development activities and contribution to the chosen field as a part of their professional activities. After reviewing the research literature on faculty development the researcher has assumed that faculty members can upgrade their skills and competency primarily by three means as listed below:

**4.2.1. Involving in the professional development activities**

The study identified that a faculty involve in professional development activities in the following ways:

- Attending national level or international level seminar / conference



- Presenting in a national level or international level seminar / conference
- Attending in technical workshops
- Presenting in a technical workshop

#### 4.2.2. Contributing to knowledge in the profession/discipline

The study identified that a faculty contributes to the knowledge in ones profession in the following ways:

- Carrying out research
- Publishing in a journal
- Publishing or reviewing a book

#### 4.2.3. Participating in formal training in teaching/learning

Considering the fact that teaching faculty requires better knowledge in pedagogy to function properly as teachers, it was necessary to measure how frequently faculty members undergo formal training in teaching/learning process.

#### 4.3 Design of Qualitative Survey Instrument

Unstructured interviews were conducted with few faculty administrators (Head of the Department, Deans, Principal, Vice -Principal) to elicit following aspects of information:

- General perception about faculty development activities.
- Faculty development opportunities available in their institutions.
- Extent of the support by institutions to promote faculty development activities.
- Impediments to effective professional development activities.

The researchers employed detailed field notes as a method for collecting from interviews. This approach is useful if time is short, the results are needed quickly, and the evaluation questions are simple.

#### 4.4 Context of the study

The study was conducted among the randomly selected sample consisting of 218 faculty members from Ten Engineering Institutions affiliated to Anna University, Chennai, Tamilnadu. All the participating institutions are conducting four year degree courses leading to B.E. (Bachelor of Engineering) / B.Tech. (Bachelor of Technology) degree. Out of the ten institutions participated in the study, four are located in urban, two are in semi urban and remaining four are located in rural area of Tamilnadu, India. All the institutions participated in the study are privately managed. The reason for conducting the study with private institutions is that they enroll more than 80% of students in engineering studies (Banerjee and Muley, 2010).

#### 4.5 Demographics of the study

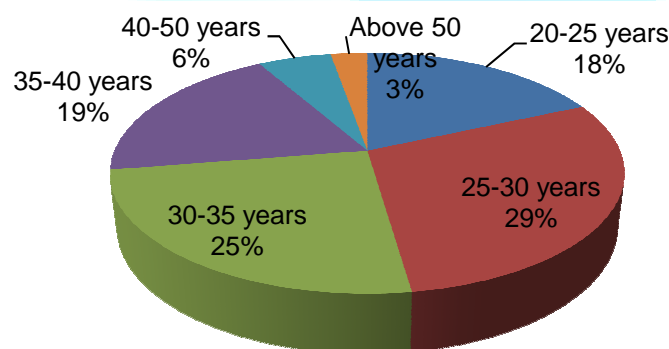
The distribution of the respondents in terms of their Gender is shown in Table 1.

TABLE – 1: GENDER PROFILE OF THE PARTICIPANTS

Gender	Number	Percentage
Male	130	60
Female	44	40

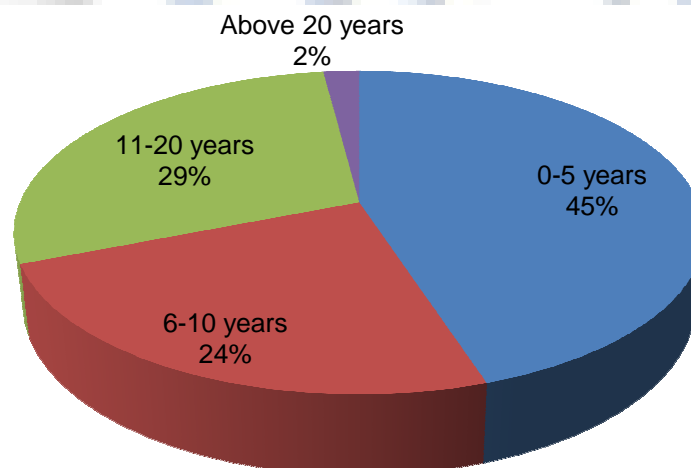
The distribution of the respondents in terms of their Age Group was as shown in the Figure 1. It is evident from the figure that majority of the respondents are below 40 years.

FIGURE 1: DISTRIBUTION OF RESPONDENTS IN TERMS OF THE AGE GROUP



The distribution of the respondents with respect to their experience was as shown in the Figure 2. In terms of experience, faculty members with less than 5 years constitute the majority group.

FIGURE 2: DISTRIBUTION OF THE RESPONDENTS IN TERMS OF THEIR EXPERIENCE



## 5. MAJOR FINDINGS

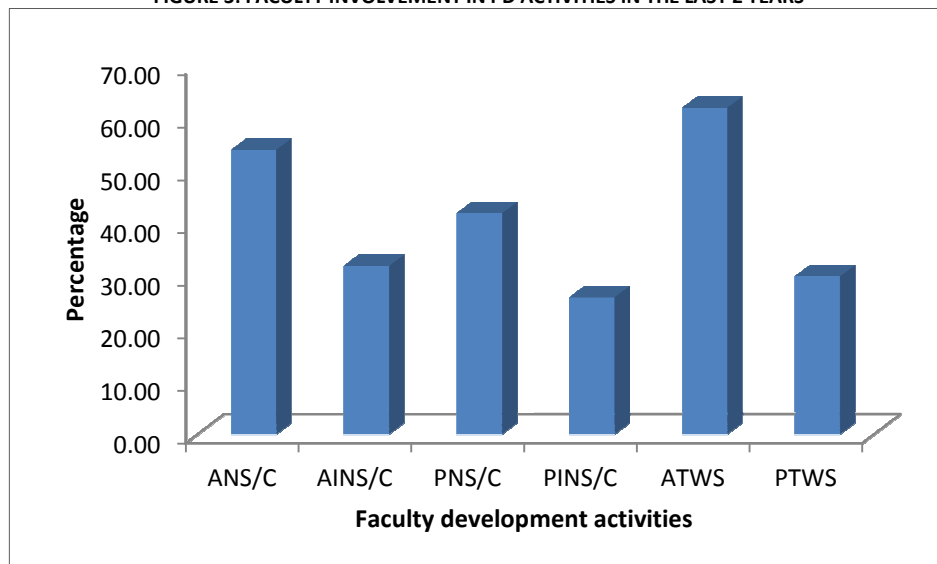
### 5.1 Faculty involvement in professional development activities in the last 2 years

Data collected from faculty reveals that 54%(N=118) of the respondents participated in national level seminar/conference but did not presented their work while only 32%(N=70) of the respondents participated in international level seminar/conference but did not presented their work.

42%(N=92) of the faculty presented their work in the national level seminar/conferences while 26%(N=56) of the respondent faculty members presented their work in the international level seminar/conferences.

62%(N=136) of the faculty divulged that they have participated technical workshops related to their field in the past 2 years while 30%(N=66) had the experience of served as guest speakers in the technical workshops.

FIGURE 3: FACULTY INVOLVEMENT IN PD ACTIVITIES IN THE LAST 2 YEARS



PD – Professional Development

ANS/C - Attended a national level seminar / conference but did not present

AINS/C - Attended a international level seminar / conference but did not present

PNS/C - Presented at a national level seminar / conference

PINS/C - Presented at a international level seminar / conference

ATWS - Participated in a technical workshop as participant

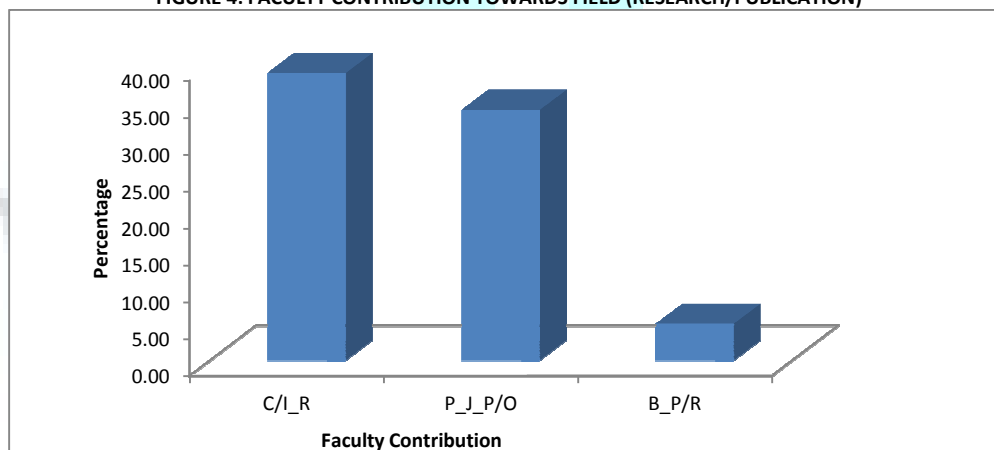
PTWS - Presented in a technical workshop

An analysis of the data reveals that faculty members participation in technical workshops and seminar/ conferences remain as the major faculty development activity in engineering institutions. Publications in conferences remain a major challenge to the faculty members. A further analysis into the experience profile of faculty who have presented their work in the national/international level seminar/conference shows that junior faculty tend to publish more in the national level technical symposium/conferences while senior faculty are more involved in publication in international level conferences/seminars.

### 5.2 Faculty contribution towards the field – Research/Publication in the last 2 years

Technical productivity of the engineering faculty is gauged by their contribution to the field through research, publications in the journals or chapters in the book. Key findings from the study shows that only 39%(N=86) of the faculty have either conducted or initiated research in their field/related field of specialization. 34%(N=74) of the respondents reported involving in publications in peer reviewed/general interest journals either in online or print mode. 5%(N=10) of the respondent published/reviewed books during last 2 years.

FIGURE 4: FACULTY CONTRIBUTION TOWARDS FIELD (RESEARCH/PUBLICATION)



C/I\_R - Conducted/Initiated original research

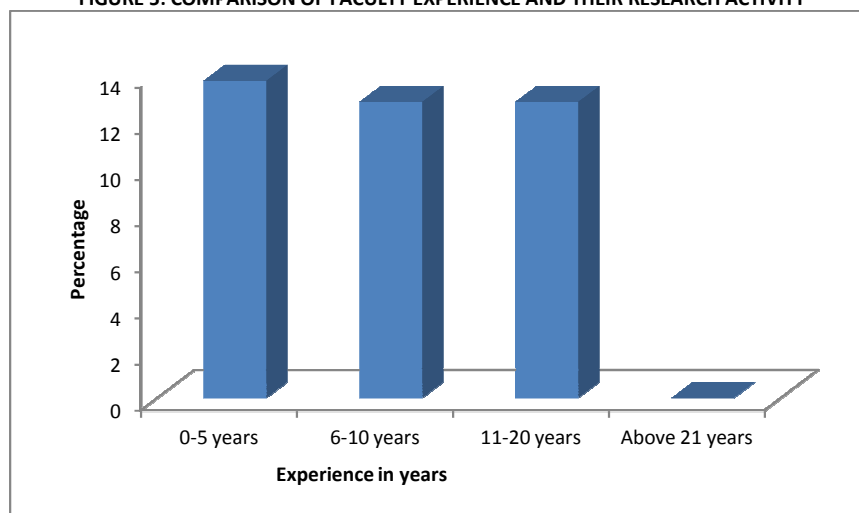
P\_J\_P/O - Published in a peer reviewed or general interest publication

B\_P/R - Published a book or reviewed a book

### 5.3 Faculty Experience and Research Activities

A detailed look in to the faculty participation and involvement in the research activities suggests that out of 39%(N=86) of respondents who had exposure to research activities, 14%(N=30) of faculty has total experience between 0-5 years, while 13%(N=28) ha total experience between 6-10 years, 13%(N=28) of faculty has experience between 11-20 years. It is a good sign that young faculty started investing their time in research in early part of their career.

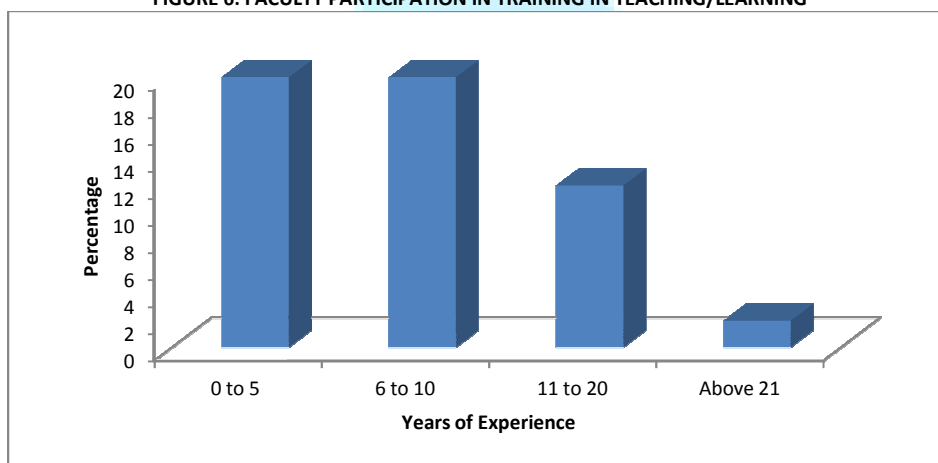
FIGURE 5: COMPARISON OF FACULTY EXPERIENCE AND THEIR RESEARCH ACTIVITY



#### 5.4 Faculty participation in pedagogical training in the last 2 years

An analysis of faculty participation in training in pedagogy indicates that 54%(N=118) of the respondents attended training of some kind in teaching/learning. Further analysis reveals that 20%(N=44) of the faculty with experience between 0-5 years and 6-10 years attended training in teaching/learning in the last two years. Only 12%(N=26) of faculty with experience between 11 to 20 years participated in training in teaching/learning in the last two years. Only 2%(N=4) of faculty belonging to more than 20 years of experience attended training in teaching/learning.

FIGURE 6: FACULTY PARTICIPATION IN TRAINING IN TEACHING/LEARNING



#### 5.5 Current Status of faculty development

A thematic analysis of the qualitative data collected from faculty administrators reveals the following key points:

- Most of the faculty administrators admitted that some form of faculty development activities prevail in their institutions. However most of the faculty development programs are not centrally controlled and coordinated by the management in general.
- Faculty members participate in short term training programs/workshops mostly out of their self interest.
- Some of the institutions which participated in the study admitted rewarding faculty members monetarily for publication of their work in national/international peer reviewed journals.
- Also some of the institutions sponsor their faculty for presenting their work in national/international conferences.
- A faculty administrator stated that "funding for sponsoring the faculty to the training programs remains a major bottleneck to the institution". He further added that "industries need to take responsibility in providing hands on training to faculty in latest tools and technology".
- Few institutions have devised policies to support faculty to participate in training programs in phased manner based on certain criteria such as years of work experience in the same institution.
- It can be observed that senior faculty administrators often stress the importance of journal publication in faculty meetings.
- Few faculty administrators opined that faculty are adult learners and they don't like them to be trained by other faculty/trainers. They questioned the very concept of training faculty to use ICT Tools in teaching.
- It is quite evident that institutions feel the heat of poor publication/research output during the accreditation reviews.
- Most of the senior faculty members divulged that they constantly experience more pressure of publication compared to junior faculty members.

## 6. RECOMMENDATIONS

Faculty members of the net generation require unique needs in professional development. To support and leverage the talents of the faculty members, institutions may consider utilizing the following recommendations:

- Include faculty development programs as a mandatory component in the academic schedule.
- Constitute a central monitoring body to oversee the effective conduct and coordination of various faculty development activities across the institution.
- It is suggested that a database in suitable format may be created and maintained in the institutions to record each faculty members' participation in professional development activities. The database should be able to fetch complete data of a faculty member's professional development activity over the years in a simple and elegant format.
- Reward faculty members suitably for publication in journals and conferences. More than reward give a wider recognition and respect for good work by the faculty members.

- It is suggested to avoid offering any faculty development program with preconceived notion about what faculty members need. Instead, develop and administer annual Need Assessment Survey to identify trends in faculty development needs.
- Design programs to enable faculty to familiarize with instructional technology. For instance, the program menu may include components of course management system, media in classrooms, social networking tools, and mobile technologies in instruction.
- Prepare faculty to take advantage of the benefits of online resources to the maximum extent in their teaching, learning and research.
- Offer flexible schedules while designing the courses and look out the possibility for various delivery options including online, blended and self-paced learning.
- Advocate faculty mentoring as a means to guide and train the young faculty and to tap the tacit knowledge of senior faculty.
- Incorporate assessment into faculty development programs, which need to align with institutional strategic initiatives. Assessment results can become the driver for the ongoing refinement of current faculty development programs and for the evolution of new programs.
- Anticipated outcomes of the programs should be clearly defined and measured. Look for possible collaborations in offering programs by involving institutions/industries in the nearby regions.

## 7. CONCLUSION

Going by the above discussion it is imperative that institutions need to consider faculty development programs in the same way that they view academic programs for students. Institutions must acknowledge that faculty faces various problems and difficulties at various stages of their academic career. It is necessary to acknowledge that such problems exist and adopt measures through effective design of intervention and faculty development activities to remediate from occurring again.

Hence the faculty development programs should address the multiple roles and needs of the faculty member as facilitator, teacher, advisor, mentor, leader and researcher. Institutions should anticipate that problems exist and the preemptive measures must be addressed.

It is the right time for the institutions to think about including mentoring as an important component in the faculty development programs. Institutions can add flavor to the faculty development programs by offering a variety of on-campus and off-campus formats such as face-to-face, blended, online, self-initiated/self-paced, and anyplace/anytime programs to accommodate just-in-time needs.

It is suggested that drastic change is required on the part of higher education administrators to look into the ways the faculty development programs are conceived, organized and promoted among faculty.

Finally, implementing and sustaining successful faculty development initiatives continues to be both an opportunity and challenge. Thus it is significant that institutions must continue to seek systematic ways and means to support teaching and learning innovation. A critical component of an innovative teaching and learning environment continues to be sustainability. It is suggested that the process of faculty development must begin as soon as the faculty enter the academic profession and continue at all subsequent levels of their career.

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**WIRELESS MONITORING AND RECORDING OF ENVIRONMENTAL PARAMETERS BASED ON XBEE AND PIC**

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**ABSTRACT**

*To create a wireless environmental parameters recording system that can benefit from the continuous advancements being made in embedded microcontroller and communications technologies. Architecture for continuous wireless environmental monitoring has been designed, fabricated, and tested. The system consists of commercial-off-the-shelf (COTS) wireless-enabled module and components for communicating the temperature, humidity, light and gas parameters and a back-end database server and client application for logging and browsing the sensed parameters. In addition to browsing acquired sensed data, the client application enables the user to perform real time oscilloscope monitoring.*

**KEYWORDS**

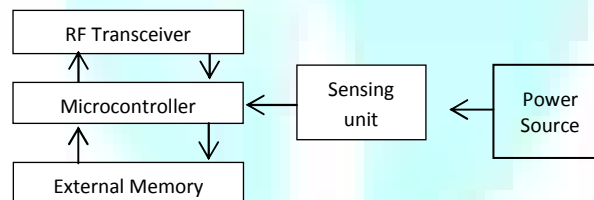
Graphical User Interface, mote, Wireless Sensor Network, XBee.

**I. INTRODUCTION**

Wireless Sensor Networks (WSN) has had a large increase in real applications during the last years. Its main advantage over other technologies is the actual economic development of its installation. Wireless sensor applications are not a real technology as a concept. The idea to implement an ad-hoc wireless network started at the beginning of the 70s [1]. The typical scenario was to set up a communication network in a battlefield, where no infrastructure is available. WSN are a trend of the last few years due to the advances made in the wireless communication, information technologies and electronics field [2]. The developments of low cost, low powered multifunctional sensors have received increasing attention from various industries [3]. WSN is a wireless network composed of autonomous and compact devices called sensor nodes or motes. A sensor network is designed to detect desired phenomena, then collect, process the data and transmit this information to users. Sensor nodes or motes in WSNs are small sized and are capable of sensing, gathering and processing data while communicating with other connected nodes in the network, via radio frequency (RF) channel. The sensor nodes scattered in a sensor field where each sensor nodes collects data and route the data back through a multi-hop hybrid wireless communications.

The design of the sensor network is influenced by factors including scalability, operating system, fault tolerance, sensor network topology, hardware constraints, transmission media, and power consumption [1]. The developments of low cost, low powered, multifunctional sensor have received increasing attention from various industries [3]. There are two kinds of sensor nodes in the network. One is the normal sensor node deployed to sense the phenomena. The other is a gateway node that interfaces sensor network to the external world. Sensor such as magnetometer, accelerometer, light and temperature are the type of sensors being used depending on the application.

As represented in Fig.1, the system architecture of a sensor node consists of a radio transceiver or optical as the communication unit, microcontroller for the processing, sensor as the sensing unit and D.C source as the power unit. The hardware device in the sensing unit may consist up to several sensors.

**FIG 1: TYPICAL WIRELESS SENSOR NODE**

The processing unit or control unit (CU) is responsible for the collecting and processing of the captured signal from the sensor unit. These signals are then transmitted to the network. It determines both energy consumption as well as computational capabilities of the sensor node. The power unit or D.C supplies power to the sensor node.

WSNs has been used in high-end application such as radiation and nuclear-threat detection systems, weapons sensors for ships, biomedical applications, habitat sensing and seismic monitoring [1]. Measurable changes are vibration, temperature, sound, motion, pollutants, humidity or pressure in environmental conditions [4], [5]. The proposed system is the convergence of the sensing features of a sensor with the intelligence and decision making abilities of a micro system. They can be successfully deployed in many industrial applications such as maintenance, monitoring, control, security, etc. Free from the hassles of any ordinary sensor system, it has its advantages in terms of portability, reliability, flexibility and robustness.

The organization of the paper is as follows: In section 2, the proposed design is discussed that also presents the block diagram for our proposed system. In section 3, the hardware and software implementation along with flow diagram is discussed. In section 4, results are discussed. Finally, some conclusions are offered in section 5 and section 6 suggests future developments.

**II. PROPOSED WORK**

The main aim of this work is to design, develop and test environmental oriented WSNs for data acquisition, processing and visualization. PIC is the CU used while the transmitter utilizes XBee technology. Information sent by the sensors is processed by the PIC controller before it is transmitted to the base station. The PIC has been programmed to send the data periodically to the base station through the XBee module.



FIG 2. FLOW CHART OF PROJECT IMPLEMENTATION

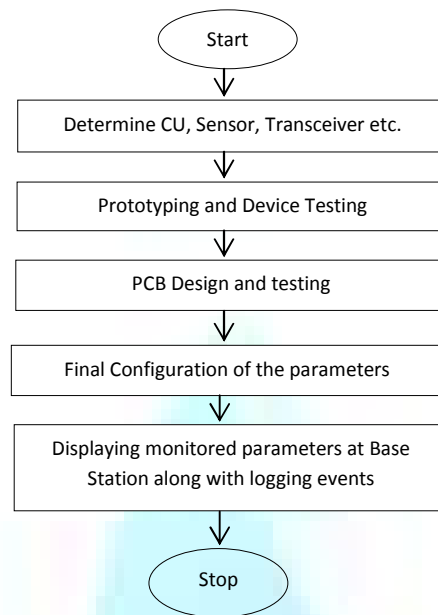
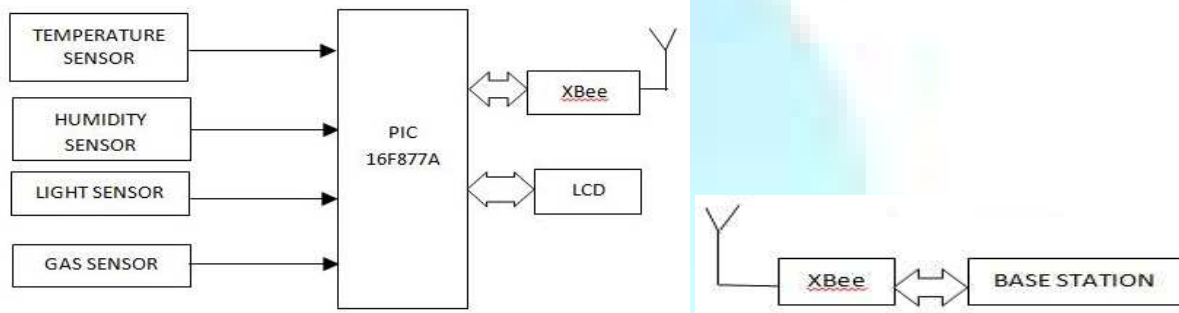


Fig.2 represents the processes carried out to produce the total system while Fig.3 is the total system block diagram consisting of temperature, humidity, light and gas sensor, and a wireless base station unit (WBSU) for creating a database as well as for visualizing events in WSN. One of the benefits of using XBee is the distance between the sensor node and the base station can exceed 100m for outdoor implementation. Therefore, it is very suitable for applications that involved outdoor monitoring and control.

FIG. 3: BLOCK DIAGRAM OF OVERALL SYSTEM.



#### A. SENSOR

Sensors are hardware device producing measurable response to change in physical condition such as temperature, gas etc. Sensor measures physical data by obtaining continual analog signal directly from the environment. This signal is then digitized by an Analog-to-digital converter (ADC) in the CU and is further processed. Characteristics or requirements of sensor node are it should be small in size, consume extremely low energy, operate in high volumetric densities, autonomous, and adaptive to the environment.

#### B. MICROCONTROLLER

As shown in Fig. 3, the microcontroller performs tasks, processes data and controls functionality of other components in the sensor node. Other alternatives are General purpose microprocessor, Application-specific integrated circuit (ASIC), Digital signal processors (DSP) or Field Programmable Gate Array (FPGA). Microcontrollers are the most suitable choice for sensor node due to flexibility in connecting to other devices, programmability and low power consumption as some parts of the controller are active while other parts can hibernate. Microprocessor on the other hand, consumes more power; therefore it is not a suitable choice for sensor node. This project shall not be utilizing DSP either since the required wireless communication is modest and simple.

#### C. IEEE 802.15.4 MODULES

XBee Modules were engineered to meet IEEE 802.15.4 standards and support the unique needs of low-cost, low-power wireless sensor networks. The modules require minimal power and provide reliable delivery of data between devices. The modules operate within the ISM 2.4 GHz frequency band and are pin-for-pin compatible with each other.

Sensor nodes make use of ISM band which gives free radio, huge spectrum allocation and global availability. The various choices of wireless transmission media are Radio Frequency, Optical communication (Laser) and Infrared. Laser requires less energy, but needs line-of-sight for communication and also sensitive to atmospheric conditions. Infrared like laser, needs no antenna but is limited in its broadcasting capacity. Radio Frequency (RF) based communication is the most relevant that fits to most of the WSN applications. WSN's use the communication frequencies between about 433 MHz and 2.435 GHz. XBee operates at 2.4GHz frequency with maximum data rate of 250kbps. This frequency band has the potential for large scale WSN application due to its high radio data rate. XBee product also utilizes 128 bit Advance Encryption Standard (AES) encryption for security purposes and therefore is suitable for various WSN applications.

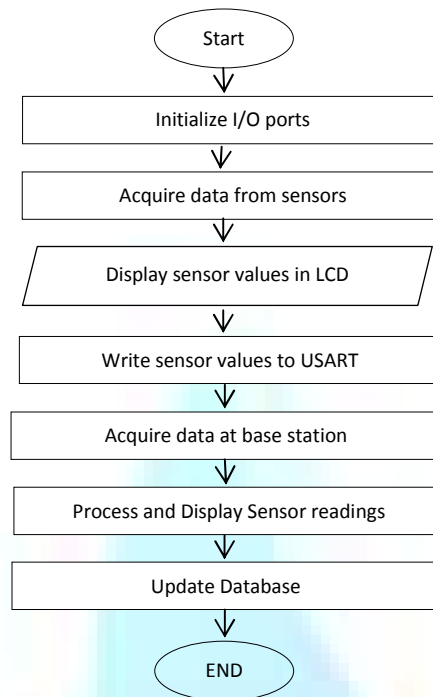
FIG. 4: XBEE TRANSCIEVER



### III. IMPLEMENTATION

The PIC was programmed using MikroC software that utilized C language. A program was developed to receive analog signal from the sensor circuit and display the output on LCD as well as send it to WBSU. The C program was converted into hex file before uploaded to the PIC using the PIC Pgm Program Developer.

FIG. 5: FLOWCHART OF TOTAL PROGRAM



This work proposes a portable wireless data acquisition system for temperature, humidity, light and gas in real time process dynamics. Process variables (like temperature, humidity etc) vary with time in certain applications and this variation should be recorded so that a control action can take place at a defined set point[5]. As the system monitors the environment under study, it senses temperature, toxic gas concentration, humidity and light. The temperature sensor senses the surrounding temperature and produces a corresponding output voltage of 10 mV per degree Celsius. Concurrently, the gas sensor produces an output voltage corresponding to the toxic gas concentration in the environment. The humidity sensor converts the relative humidity to output voltage. The light sensor produces an output voltage corresponding to the intensity of light.

The light sensor, temperature, humidity and gas sensor outputs are directly fed into the ADC pins of the PIC .The PIC 16F877A does the analog to digital conversion as well as processing of the sensor voltages according to the program stored in it. The LCD displays the current temperature, humidity, light, gas readings to enable on site monitoring.

The processed data is transmitted serially via the USART terminal of PIC to the XBEE. The XBEE transmits the data to the receiver end. At the receiver end, another XBEE is serially connected to the PC via serial port interfacing. The received data is processed and displayed on a front-end window in real time in both oscilloscope and GUI .A database is also created with date and time of occurrence of the events. Every time the data is transmitted and received it is entered into a log, that is smart logger is the convergence of the sensing features of a sensor with the intelligence and decision making abilities of a micro system.

Beside hardware development, the overall objective of this implementation is to set up a WSN topology consisting of several nodes for different position in a specified environment. However this paper shall present the communication results of a WSN with a single node to be tested in 3 different positions. Environment chosen were; outside of a building, an air-conditioned area and a room at room temperature. This is mainly intended for hardware functionality verification and operation ability in various environments.

FIG 6. SENSOR NODE (TRANSMITTING END)

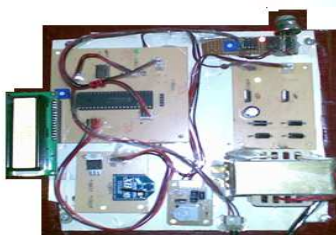


FIG 7. BASE STATION ((RECEIVING END)



#### IV. RESULTS AND DISCUSSION

Fig.8, 9 and 12 shows that the resultant output display at the base station screen. The results proved that the sensor node can sent sensed data from closed environment such as air conditioned room, to any room in the building and even from the outside of the building to the base station. These outputs are temperature, humidity, light and gas values, send by the wireless sensor node via the XBee transmitter to the base station receiver at the same and different environment. The results are displayed on the screen by using an interactive GUI shown in Fig 8.The GUI has options for analyzing data systematically in addition to real time visualization.

FIG. 8: GUI AT BASE STATION DEPICTING REAL TIME MONITORING OF ENVIRONMENTAL PARAMETERS

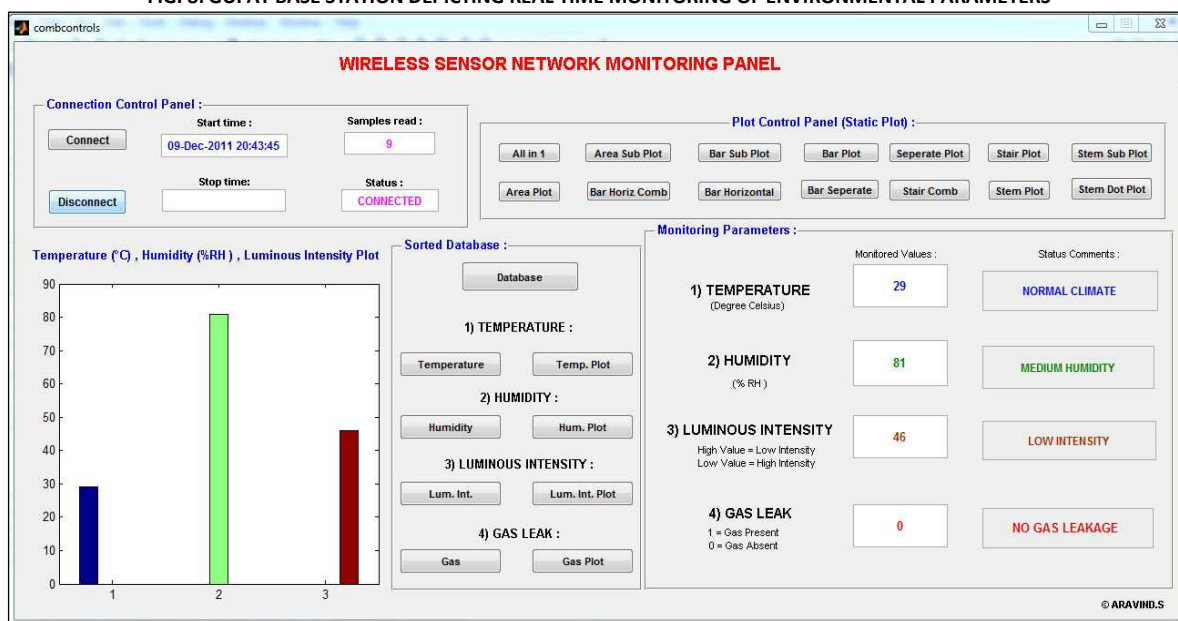


FIG 9: DATABASE AT WBSU

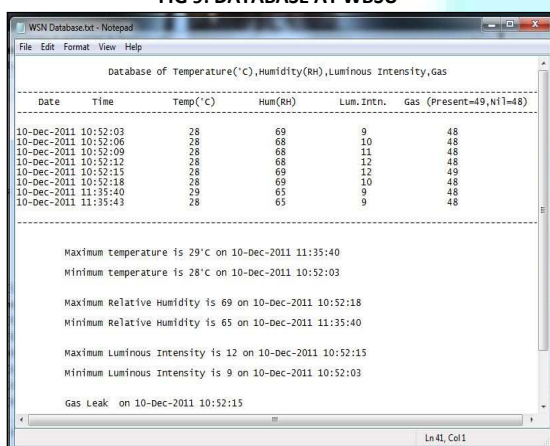
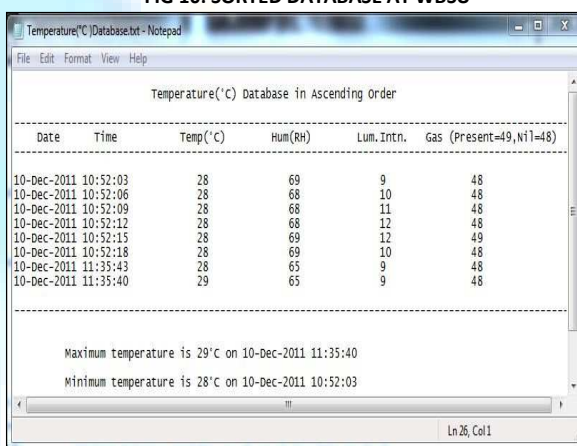
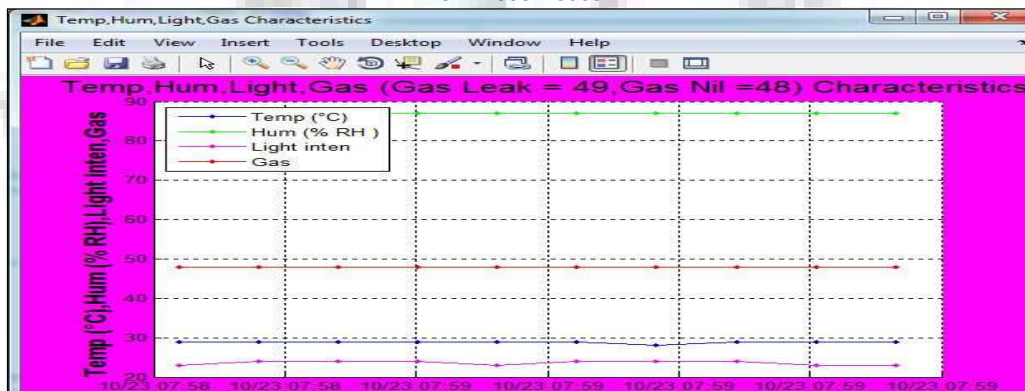


FIG 10: SORTED DATABASE AT WBSU



The main functions of proposed WSN system are: 1) Ability to find maximum and minimum temperature, humidity and light intensity of a day, week, month, year etc. and store it in separate databases depicting the date and time of each sensor readings. 2) Oscilloscope real time display of the monitored parameters along with date and time at WBSU. 3) Ability to record and show the date and time of Gas leakage for a day, week, month, year in a separate database. 4) User specific selection of plot of acquired data from 14 different types of static plots. 5) To sound an alarm at base station on detecting gas leakage. These results proved that the sensor node can send data from any environment to a base station situated at a distance of even up to 100m continuously. Fig. 11 shows the oscilloscope application at the WBSU. The oscilloscope enables the four sensors to be monitored on time simultaneously. The interactive GUI enables simultaneous logging and oscilloscope application.

FIG. 11: OSCILLOSCOPE



## V. CONCLUSION

This paper presented a wireless sensor network system based on XBee technology and microcontroller (PIC) for environmental monitoring. By exploring its system framework and technology characters the experiment has proved its feasibility. The sensor node has successfully transmitted sensor data to the base station located in the same environment. It is a preliminary work toward a better design of a PIC based wireless sensor node and a complete WSN. The system possesses low cost, low power, wider coverage, and especially the character of mobility.

## VI. FUTURE DEVELOPMENT

Further development of more nodes should be highly considered. With the success of the development of this sensor node, hardware duplication could be carried to produce several nodes. With more number of nodes, the feasibility of the simulated WSN system developed earlier can be proven. The future scope of this work is: It can be used to make a network of clusters consisting of sensors in real time control applications. It is compatible with different network protocols. A memory database can be built by using on chip memory as well as remotely connected PC through wireless link. The system is flexible to change the control algorithms like PID control algorithm.

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