INTERNATIONAL JOURNAL OF RESEARCH IN COMPUTER APPLICATION & MANAGEMENT

IJRCM

A Monthly Double-Blind Peer Reviewed (Refereed/Juried) Open Access International e-Journal - Included in the International Serial Directories

Indexed & Listed at:

Ulrich's Periodicals Directory ©, ProQuest, U.S.A., EBSCO Publishing, U.S.A., Cabell's Directories of Publishing Opportunities, U.S.A., Google Scholar, Open J-Gage, India [link of the same is duly available at Inflibnet of University Grants Commission (U.G.C.)], Index Copernicus Publishers Panel, Poland with IC Value of 5.09 & number of libraries all around the world.

Circulated all over the world & Google has verified that scholars of more than **4767 Cities** in **180 countries/territories** are visiting our journal on regular basis.

Ground Floor, Building No. 1041-C-1, Devi Bhawan Bazar, JAGADHRI – 135 003, Yamunanagar, Haryana, INDIA

http://ijrcm.org.in/

CONTENTS

CALL FOR MANUSCRIPTS

We invite unpublished novel, original, empirical and high quality research work pertaining to recent developments & practices in the areas of Computer Science & Applications; Commerce; Business; Finance; Marketing; Human Resource Management; General Management; Banking; Economics; Tourism Administration & Management; Education; Law; Library & Information Science; Defence & Strategic Studies; Electronic Science; Corporate Governance; Industrial Relations; and emerging paradigms in allied subjects like Accounting; Accounting Information Systems; Accounting Theory & Practice; Auditing; Behavioral Accounting; Behavioral Economics; Corporate Finance; Cost Accounting; Econometrics; Economic Development; Economic History; Financial Institutions & Markets; Financial Services; Fiscal Policy; Government & Non Profit Accounting; Industrial Organization; International Economics & Trade; International Finance; Macro Economics; Micro Economics; Rural Economics; Co-operation; Demography: Development Planning; Development Studies; Applied Economics; Development Economics; Business Economics; Monetary Policy; Public Policy Economics; Real Estate; Regional Economics; Political Science; Continuing Education; Labour Welfare; Philosophy; Psychology; Sociology; Tax Accounting; Advertising & Promotion Management; Management Information Systems (MIS); Business Law; Public Responsibility & Ethics; Communication; Direct Marketing; E-Commerce; Global Business; Health Care Administration; Labour Relations & Human Resource Management; Marketing Research; Marketing Theory & Applications; Non-Profit Organizations; Office Administration/Management; Operations Research/Statistics; Organizational Behavior & Theory; Organizational Development; Production/Operations; International Relations; Human Rights & Duties; Public Administration; Population Studies; Purchasing/Materials Management; Retailing; Sales/Selling; Services; Small Business Entrepreneurship; Strategic Management Policy; Technology/Innovation; Tourism & Hospitality; Transportation Distribution; Algorithms; Artificial Intelligence; Compilers & Translation; Computer Aided Design (CAD); Computer Aided Manufacturing; Computer Graphics; Computer Organization & Architecture; Database Structures & Systems; Discrete Structures; Internet; Management Information Systems; Modeling & Simulation; Neural Systems/Neural Networks; Numerical Analysis/Scientific Computing; Object Oriented Programming; Operating Systems; Programming Languages; Robotics; Symbolic & Formal Logic; Web Design and emerging paradigms in allied subjects.

Anybody can submit the **soft copy** of unpublished novel; original; empirical and high quality **research work/manuscript** ***anytime*** in ***M.S. Word format*** after preparing the same as per our **GUIDELINES FOR SUBMISSION**; at our email address i.e. infoijrcm@gmail.com or online by clicking the link **online submission** as given on our website (***FOR ONLINE SUBMISSION, CLICK HERE***).

GUIDELINES FOR SUBMISSION OF MANUSCRIPT

1. **COVERING LETTER FOR SUBMISSION:**

DATED: _____

THE EDITOR

IJRCM

Subject: **SUBMISSION OF MANUSCRIPT IN THE AREA OF _____.**

(e.g. Finance/Mkt./HRM/General Mgt./Engineering/Economics/Computer/IT/ Education/Psychology/Law/Math/other, please specify)

DEAR SIR/MADAM

Please find my submission of manuscript entitled '_____' for possible publication in one of your journals.

I hereby affirm that the contents of this manuscript are original. Furthermore, it has neither been published elsewhere in any language fully or partly, nor is it under review for publication elsewhere.

I affirm that all the co-authors of this manuscript have seen the submitted version of the manuscript and have agreed to their inclusion of names as co-authors.

Also, if my/our manuscript is accepted, I agree to comply with the formalities as given on the website of the journal. The Journal has discretion to publish our contribution in any of its journals.

NAME OF CORRESPONDING AUTHOR	:
Designation	:
Institution/College/University with full address & Pin Code	:
Residential address with Pin Code	:
Mobile Number (s) with country ISD code	:
Is WhatsApp or Viber active on your above noted Mobile Number (Yes/No)	:
Landline Number (s) with country ISD code	:
E-mail Address	:
Alternate E-mail Address	:
Nationality	:

NOTES:

a) The whole manuscript has to be in ***ONE MS WORD FILE*** only, which will start from the covering letter, inside the manuscript. ***pdf. version is liable to be rejected without any consideration***.

b) The sender is required to mention the following in the **SUBJECT COLUMN of the mail**:

New Manuscript for Review in the area of (e.g. Finance/Marketing/HRM/General Mgt./Engineering/Economics/Computer/IT/ Education/Psychology/Law/Math/other, please specify)

c) There is no need to give any text in the body of mail, except the cases where the author wishes to give any **specific message** w.r.t. to the manuscript.

d) The total size of the file containing the manuscript is expected to be below **1000 KB**.

e) **Abstract alone will not be considered for review** and the author is required to submit the **complete manuscript** in the first instance.

f) ***The journal gives acknowledgement w.r.t. the receipt of every email within twenty four hours*** and in case of non-receipt of acknowledgment from the journal, w.r.t. the submission of manuscript, within two days of submission, the corresponding author is required to demand for the same by sending a separate mail to the journal.

g) The author (s) name or details should not appear anywhere on the body of the manuscript, except the covering letter and the cover page of the manuscript, in the manner as mentioned in the guidelines.

2. **MANUSCRIPT TITLE:** The title of the paper should be **bold typed**, **centered** and **fully capitalised**.
3. **AUTHOR NAME (S) & AFFILIATIONS:** Author (s) **name**, **designation**, **affiliation** (s), **address**, **mobile/landline number** (s), and **email/alternate email address** should be given underneath the title.
4. **ACKNOWLEDGMENTS:** Acknowledgements can be given to reviewers, guides, funding institutions, etc., if any.
5. **ABSTRACT:** Abstract should be in **fully italicized text**, ranging between **150** to **300 words**. The abstract must be informative and explain the background, aims, methods, results & conclusion in a **SINGLE PARA**. ***Abbreviations must be mentioned in full***.
6. **KEYWORDS:** Abstract must be followed by a list of keywords, subject to the maximum of **five**. These should be arranged in alphabetic order separated by commas and full stop at the end. All words of the keywords, including the first one should be in small letters, except special words e.g. name of the Countries, abbreviations.
7. **JEL CODE:** Provide the appropriate Journal of Economic Literature Classification System code (s). JEL codes are available at www.aea-web.org/econlit/jelCodes.php, however, mentioning JEL Code is not mandatory.
8. **MANUSCRIPT:** Manuscript must be in ***BRITISH ENGLISH*** prepared on a standard A4 size ***PORTRAIT SETTING PAPER***. *It should be free from any errors i.e.* ***grammatical, spelling*** *or* ***punctuation.*** *It must be thoroughly edited at your end*.
9. **HEADINGS:** All the headings must be bold-faced, aligned left and fully capitalised. Leave a blank line before each heading.
10. **SUB-HEADINGS:** All the sub-headings must be bold-faced, aligned left and fully capitalised.
11. **MAIN TEXT:**

THE MAIN TEXT SHOULD FOLLOW THE FOLLOWING SEQUENCE:

INTRODUCTION

REVIEW OF LITERATURE

NEED/IMPORTANCE OF THE STUDY

STATEMENT OF THE PROBLEM

OBJECTIVES

HYPOTHESIS (ES)

RESEARCH METHODOLOGY

RESULTS & DISCUSSION

FINDINGS

RECOMMENDATIONS/SUGGESTIONS

CONCLUSIONS

LIMITATIONS

SCOPE FOR FURTHER RESEARCH

REFERENCES

APPENDIX/ANNEXURE

The manuscript should preferably range from ***2000 to 5000 WORDS***.

12. **FIGURES & TABLES:** These should be simple, crystal **CLEAR**, **centered**, **separately numbered** & self explained, and **titles must be above the table/figure**. **Sources of data should be mentioned below the table/figure**. *It should be ensured that the tables/figures are referred to from the main text*.
13. **EQUATIONS/FORMULAE:** These should be consecutively numbered in parenthesis, horizontally centered with equation/formulae number placed at the right. The equation editor provided with standard versions of Microsoft Word should be utilised. If any other equation editor is utilised, author must confirm that these equations may be viewed and edited in versions of Microsoft Office that does not have the editor.
14. **ACRONYMS:** These should not be used in the abstract. The use of acronyms is elsewhere is acceptable. Acronyms should be defined on its first use in each section: Reserve Bank of India (RBI). Acronyms should be redefined on first use in subsequent sections.
15. **REFERENCES:** The list of all references should be alphabetically arranged. ***The author (s) should mention only the actually utilised references in the preparation of manuscript*** and they are supposed to follow Harvard Style of Referencing. **Also check to make sure that everything that you are including in the reference section is duly cited in the paper**. The author (s) are supposed to follow the references as per the following:

- All works cited in the text (including sources for tables and figures) should be listed alphabetically.
- Use (**ed.**) for one editor, and (**ed.s)** for multiple editors.
- When listing two or more works by one author, use --- (20xx), such as after Kohl (1997), use --- (2001), etc, in chronologically ascending order.
- Indicate (opening and closing) page numbers for articles in journals and for chapters in books.
- The title of books and journals should be in italics. Double quotation marks are used for titles of journal articles, book chapters, dissertations, reports, working papers, unpublished material, etc.
- For titles in a language other than English, provide an English translation in parenthesis.
- ***Headers, footers, endnotes*** *and* ***footnotes*** *should* ***not be used*** *in the document.* However, **you can mention short notes to elucidate some specific point**, which may be placed in number orders after the references.

PLEASE USE THE FOLLOWING FOR STYLE AND PUNCTUATION IN REFERENCES:

BOOKS

- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
- Hunker, H.L. and A.J. Wright (1963), "Factors of Industrial Location in Ohio" Ohio State University, Nigeria.

CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

JOURNAL AND OTHER ARTICLES

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

CONFERENCE PAPERS

- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–23

UNPUBLISHED DISSERTATIONS

- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

ONLINE RESOURCES

- Always indicate the date that the source was accessed, as online resources are frequently updated or removed.

WEBSITES

- Garg, Bhavet (2011): Towards a New Gas Policy, Political Weekly, Viewed on January 01, 2012 http://epw.in/user/viewabstract.jsp

IMPROVING THE EFFECTIVENESS OF e-GOVERNANCE PROJECT IN PUBLIC DISTRIBUTION SYSTEM (PDS) OF GUJARAT

PARIKSHIT TIWARI
RESEARCH SCHOLAR
KADI SARVA VISHWAVIDYALAYA
GANDHINAGAR

RAVI GOR
DIRECTOR (ACADEMIC)
DR. BABASAHEB AMBEDKAR OPEN UNIVERSITY
AHMEDABAD

ABSTRACT

E-Government refers to the delivery of national or local government information and services via the internet or other digital means to citizens, business and other stakeholders. Providing integrated citizen centric services like PDS (Public Distribution System) at different level of state and grass root level Government bodies is a key objective of e-Governance initiatives. Effectiveness can be measured in terms of timely response, better service delivery and cost to citizens. This will give empowerment of the user through access to information / service. E-Governance is incomplete unless government services are made available to the citizens in a hassle free and 24x7 manners. When it comes to e-Governance, there is no doubt that Gujarat is one of the top states in the country. With a strong structure of Networks and Applications, and effective execution of policies, Gujarat has emerged as one of the most e-ready states in the country with efficient citizen service delivery as the central focus. The main objective of the research is to derive a set of parameters to ensure e-governance so that, projects are successful, implementable, usable, transparent, time effective, affordable, interpretable and accurate from citizens' point of view and focus also on service delivery and interoperability in various department of the e-Government with specific reference to PDS.

KEYWORDS
e-Governance, citizens, PDS, business, stakeholders, government services.

INTRODUCTION

E-governance is the application of information & communication technologies to transform the efficiency, effectiveness, transparency and accountability of informational & transactional exchanges with in government, between govt. & govt. agencies of National, State, Municipal & Local levels, citizen & businesses, and to empower citizens through access & use of information.

E-Governance in India has steadily evolved from computerization of Government Departments to initiatives that encapsulate the finer points of Governance, such as citizen centricity, service orientation and transparency. Under the National e-Governance Plan (NeGP), it takes a holistic view of e-Governance initiatives across the country, integrating them into a collective vision, a shared cause. Around this idea, a massive countrywide infrastructure reaching down to the remotest of villages is evolving, and large-scale digitization of records is taking place to enable easy, reliable access over the internet. The ultimate objective is to bring public services like PDS (Public Distribution System) and HMIS (Health Management Information System) closer home to citizens, as articulated in the Vision Statement of NeGP.

"Make all Government services accessible to the common man in his locality, through common service delivery outlets, and ensure efficiency, transparency, and reliability of such services at affordable costs to realise the basic needs of the common man"

We as citizens, especially those from the urban area, are aware of the penetration of ICT (Information and Communication Technology) in our daily life. Whether it is withdrawal of cash from bank, purchases, travel, education, medical, pension, insurance, event management, real estate deals, purchase of sharers, marriages or entertainment, use of IT has become a necessity. The private sector firms have made rapid strides in the user-centric applications of the ICT (Information and Communication Technology).

The same cannot be said about the Government sector, especially when it comes to citizen-centric services. A comprehensive definition of electronic governance, given by the Council of Europe covers the use of electronic technologies in three areas of public action – relations between the public authorities and civil society, functioning of the public authorities at all stages of the democratic process (electronic democracy) and the provision of public services (electronic public service). Looking at all the three areas stated, it is commonly believed that the government sector in India has not delivered in terms of e-governance, despite huge budgetary allocation. Registration of property, railway reservation, electricity and water billing, examinations results, birth / death certificates, educational admissions, land records, taxation, domicile certificate, and driving license possibility etc are some of the e-governance projects which have been initiated in the recent past. Some of these are useful to citizens but their impact is low in terms of transparency, ease of use, availability, information dissemination and integration. If we compare similar applications in advanced countries, our CCEG (Citizen Centric E-Governance) projects seem to lag in terms of their impact on the society due to long delivery process.

Spread of ICT (Information Communication Technology) in the rural area is meager as compared to urban area.

Integration across government departments is often not planned properly. The famed single window concept does not work. The citizens still have to visit different citizen centers spread within cities or towns; delivery process is also very long.

As stated earlier, the scope of e-governance is not merely restricted to public services. The citizens expect a lot more from e-governance projects than merely improvement in service delivery in terms of time saving and sophistication. Huge funds are planned to be disbursed every year to citizens under a number of different schemes. PDS (Public Distribution System) is one of the largest projects in India which directly deals with Citizen, for which huge funds are provided to taken care of BPL cardholders / Citizens. Political decisions for launching new schemes, if based on correct data, will genuinely benefit the citizens. E-governance services such as issuing a ration card or BPL card driving still require hiring of middlemen. Citizens expect that they themselves should be able to interact with government for all their needs.

PDS IN GUJARAT

The State has a long coast-line of about 1600 kms. and is the longest among all States in the country. For the purpose of administration, Gujarat State at present comprises of 33 districts, sub-divided into 294 talukas, having 18618 villages and 242 towns. Gujarat has geographical area of 1.96 lakh sq. kms. and accounts for 6.19 percent of the total area of the country. According to the Population Census 2011, the population of Gujarat, stood at 6.03 crore. The density of Gujarat is 258 persons per sq. km. in 2001. About 42.6 per cent population of Gujarat resides in urban areas. According to the population census 2011, the total numbers of households were 1.21Cr.

PDS in the State functions in two ways: one is Department of Food, Civil Supplies and Consumer Affairs. This looks into allocation of PDS food grains to the Districts, grant of licences for FPS, ration cards and Vigilance & Enforcement. Gujarat State Civil Supplies Corporation (GSCSC) looks into the distribution of allocated food

grain from FCI to the State godowns maintained by GSCSC. Thereafter it is the FPS owner who lifts the entitled stock from the State godowns. After the introduction of fortified atta scheme, Corporation transports the allocated wheat from FCI Godown to specified flour mills. Fortified atta is then lifted by the Corporation from the flour mills. Atta bags are then lifted by the FPS owner from the State Godown as per their respatoant entitlement.

State Government has done pioneer work in the fields of establishing Model Fair Price Shops; supply of fortified 'atta' (wheat flour) instead of wheat to PDS beneficiaries with computerization to envisage scheme of Smart PDS i.e a complete e-Governance solution of PDS.

It is certainly heartening to note that Gujarat Government had started model Fair Price Shops in the State. This innovative concept introduced by the State helps FPS dealers to establish higher level of accountability, besides attracting customers in large numbers. With a view to make FPS more viable its dealers are encouraged to convert their routine FPS into model FPS. FPSs were supported by Gujarat State Civil Supplies Corporation (GSCSC), as a facilitator to avail loan facilities from Nationalized Banks. If FPS operator got a loan of Rs.1.00 lakh, the amount of Rs. 15,000/- was paid by the Govt. as margin money (subsidy). Government of Gujarat encourages suppliers to provide goods to model FPS at reasonable rates. State Government had planned to convert all FPSs into Model FPSs by 31.3.2010. There had been 13,452 model FPSs that out of the total 17,251 FPSs as per 2011 data. Total ration card that time in the State was 123 lakhs. Out of these AAY cards are 8.1 lakh, BPL cards 25.7 lakh and APL cards 89.5 lakh. (APL is further classified into APL-1 and APL-2).

CITIZEN CENTRIC E-GOVERNANCE APPLICATIONS PDS IN GUJARAT

Gujarat has been one of the frontline State in the implementation of e-governance policies & projects in India. Independent agencies have rated Gujarat as one of the most e-prepared State in the country. State Govt. has adopted innovative / progressive policies for promotion of e-governance in the State. This research has taken case study of PDS (Public Distribution System) related to citizens of different sections of the society which have been acknowledged as successful e-governance projects in Gujarat. It may be mentioned that e-governance projects involve access to confidential and sensitive information and procedures. It is not easy to obtain information.

Public Distribution System (PDS) is undoubtedly a closable food distribution network of this kind in the works. The procurement, storage in godowns is undertaken by FCI (Food Corporation of India) a central government agency, allocation of food grain to the States is Central Government responsibility. Distribution is done by respective state through FPS (Fair Price Shops). Licensed by them identifying BPL- AAY population as per the estimation provided by the Planning Commission. Central Government is proposing to introduce National Food Security law to provide statutory framework, providing food security to one and all. The proposal which is yet to become a law, makes provisions for supply of 25 Kgs. of food grain to every BPL family every month at an average rate of Rs. 3/- per kilogram. But the law will be rendered futile like PDS if it does not come up with an appropriate mechanism for its implementation. Introduction of e-Governance i.e. ICT (Information Communication Technology) has also played a pivotal role for the effective implementation of the system and give more accountability and transparency to the system.

State Government has proposed Smart PDS project and IT solution for better implementation, increasing effectiveness and efficiency of TPDS. The system is in place but has been kept on hold because of Unique Identification Project by the Central Government. The Unique Identification Authority of India (UIDAI) is a body of the Central Government and is responsible for implementing the envisioned Multipurpose National Identity Card or Unique Identification Card (UID Card) project in India.

TARGET PUBLIC DISTRIBUTION SYSTEM: The Government of India has introduced a new scheme namely "Targeted Public Distribution System" (TPDS) effective since 1st June-1997. The Government of Gujarat has also implemented this scheme, which was initially divided in two parts APL and BPL, but due to implementation of "Antyodaya Anna Yojana" since July-2001, it is divided into three parts i.e. APL, BPL, AAY.

The State Government has divided beneficiaries in 4 categories as under:

1. Above Poverty Line-2 (APL-2) families, having annual income above one lakh.
2. Above Poverty Line (APL-1) families, having annual income above Rs.11000 and less than one lakh.
3. Below Poverty Line (BPL) families, having annual income of Rs.11000 or less.
4. The poorest of poor families among the BPL families (Antyodaya Anna Yojana).

There are 1,23,19,318 ration cards in the State. The State has divided PDS beneficiaries into APL-2, APL-1, BPL and AAY. Total no. of Ration Cards in the State

AAY - 8.1 LAKHS
BPL - 25.7 LAKHS
APL - 89.4 LAKHS

ABOVE POVERTY LINE SCHEME

1. Under Above Poverty Line -1 Scheme, wheat is distributed at the rate of 2.5 kg. per head and 10 kg. Maximum per card per month at the rate of Rs. 7.00 per kg. and rice is distributed at the rate of 2.5 kg. per head and 10 kg. maximum per card per month at the rate of Rs. 10.00 per kg. to the APL card holders.
2. Beneficiaries under Above Poverty Line-2 category are not getting any commodity under TPDS

BELOW POVERTY LINE SCHEME

Under this scheme, 1.5 kg. wheat per head and maximum 9 kg. wheat per card per month is distributed at the rate of Rs. 2 per kg. 1 kg. rice per head and maximum 3.5 kg. Rice per card per month is distributed at the rate of Rs. 3 per kg. to the BPL card holders. In addition of above quantity 5 kg. Wheat @ Rs. 5 per kg and 2.5 kg. Rice @ Rs. 6.70 per kg is distributed to the BPL families. Presently this scheme covers 25.7 lakh families of the State.

ANTYODAYA ANNA YOJANA

The poorest of poor families are covered under this scheme. As per the target given by Government of India, the State Government has covered 8.1 lakh families. The scheme has been implemented since July-2001. Under this scheme 28 kg wheat was given at the rate of Rs. 2 and rice was distributed 7 kg. @ Rs.3 per card per month from October- 2004 to May-2006. From June-2006 Government of Gujarat has decided to distribute 19 kg. Wheat and 16 kg. Rice i.e. 35 kg. total food grain. The distribution price has been kept the same. However, presently 16.7 kg wheat atta @ Rs. 38 per bag and 16 kg Rice@ Rs. 3 per kg is given to every AAY family.

Free of Cost food grain for attaining Food security for starving and malnourished.

State Government has decided procedure to give food grain free of cost to prevent deaths due to starvation or malnutrition. District Supply Officer and Taluka Mamlatdar are empowered to give 10 quintal food grain per month to actual beneficiary of scheme after self-verification and inspection. Under this scheme following persons are entitled to get food grain free of cost. Person / Family who has no ration card.

1. Poor shelter less persons and hospitalized patients who require food grain
2. Labourers who are unable to work
3. Every such family is eligible for 10-15 kg food grain free of cost per month for six months.

MODEL FAIR PRICE SHOPS

Gujarat is the first State in India, which has presented a new concept of Fair Price Shop viz., a model centre, which would be beneficial to the shopkeepers running the FPS and also attract more customers to these shops. At present, the shopkeepers of the FPS get Rs. 1500/- to Rs. 3000/- per month towards commission or even suffer loss depending upon the number of cards attached to the FPS.

To improve the economic viability of the FPS, the Government of Gujarat has permitted the FPSs to sell other items. They can have distributorship or agency of various products, so that they can sell a variety of goods and services, in addition to rationed (essential) commodities. These are now called the model Fair Price Shops (MFPs) and are run on the concept of village malls.

With a view to increasing their income, MFPs are allowed to sell various commodities, like packaged foods, cosmetics, mobile recharge coupons, non-subsidized LPG cylinders, fertilizers, certified seeds, toiletries detergents, etc. Other products include PLI policy, ST bus bookings, STD telephone, pharmaceuticals and bio-diesel.

To increase the clientele and attract more consumers, the MFPs are going through a face-lift in looks as well as attitude which is expected to be consumer-friendly. The MFPSs owners have been given training at Ahmedabad Management Association. An MFPS requires two or three windows, the articles arranged in an attractive manner, facility of sitting for the consumers.

In order to see that, they may be able to effect the said changes, financial linkages have been provided to FPSs. For Upgradation, the State Government ties up with the State Bank of India to advance loans to FPS owners. The State Bank is holding "Loan Mela" in all Districts to promote renovation of MFPSs.

National Institution of Designing (NID), Ahmedabad has developed uniform design and color code for the MFPs.

Formation of Vigilance Committee at Village level would take stock of the MFPs activities and ensure that there is no diversion of the quota, and at the same time demand, supply and nutrition issues are converged at village level.

With the initiation of such Fair Price Model Centers, a variety of articles, which are useful to the customers, will be made available at these shops and the business of the shopkeeper also will increase, and his profit will also rise. At the same time, the goods, which were used to be diverted and disposed elsewhere from such FPS, would also stop. The scheme has raised the monthly income of the shopkeepers, which is estimated to be Rs. 2,000/- (Rupees Two Thousand) to Rs. 10,000/- (Rupees Ten Thousand).

One more advantage of the said MFPS is that, because of their creation in the villages, the people residing in the rural areas would get such articles and services in their own villages and they would not have to go to the cities for getting the same. As a result, time and money of the people living in the rural areas would be saved. Thus, this mall may also be styled as the 'Rural Mall'.

ASSESS THE ORGANIZATION

An organization must evaluate its core services, goals and measures of success on a consistent basis in order to ensure employee and customer needs are being met, that decisions are made with overarching strategic goals in mind and that the organization's practices, work and culture are aligned with its mission, vision and values.

VALUE CHAIN ANALYSIS is a strategic prioritization tool that you can use to discover how you can create the greatest possible value for your stakeholders.

Value Chain Analysis is a three-step process:

1. Activity Analysis: First, you identify the activities you undertake to deliver your product or service;
2. Value Analysis: Second, for each activity, you think through what you would do to add the greatest value for your customer; and
3. Evaluation and Planning: Thirdly, you evaluate whether it is worth making changes, and then plan for action.

ACTIVITY FLOW OF PDS FOR FOOD GRAINS

Scheme wise Allocation of food grain	GOI allocates Wheat & Rice under the Targeted Public Distribution System (TPDS) of the schem Antyoday, Below Powerty Line (BPL) & Above Powerty Line (APL)
⇩	
District wise scheme wise allocation by GOG based on no. of ration cards	In view of the allocation made by central Govt., State Govt. carries out Districtwise schemewise allocation based on no. of ration cards
⇩	
Procurement, Storage and Distribution by GSCSC	State Govt. has assigned task of Procurement, Storage and Distribution of food grain to GSCSC
⇩	
Payment made in advance as per the rate fixed by the Central Govt.	Corporation make advance payment to Area Manager of the Food Corporation of India (FCI) (Ahmedabad, Vadodara, Rajkot, Bhuj) as per the rate fixed by Cetral Govt.
⇩	
Issue of Release Order (RO) and availability of stock at Godowns	District offices received Release Oder (RO) from Area Manager and lift the stock by authorized transport contractor for availability of stock at Godowns.
⇩	
To receive permit	Earlier Taluka mamlatdar of the District issue the permit to Fair Price Shopkeeper as per the number of card with FPS. Now this work is computerised so FPS can generate permit at their own.
⇩	
Receive the essential stock on submission of permit	Related FPS owner deposit the money through any bank in the bank account fixed by the Corporation and essential commodities stock made available at the FPS through Door Step Delivery Scheme on submission of permit and receipt of the payment made at the Godown. FPS distribute commodities at fixed rate to beneficiary.

CRITICAL SUCCESS FACTORS - COMPUTERIZATION OF GODOWN ACTIVITY

Computerization of TPDS in Gujarat has been divided into the following three parts:

- creating and updating beneficiary database
- stocks management from Food Corporation of India (FCI) till Fair Price Shop (FPS) and
- sale of commodities at Fair Price Shops.

The stock management from FCI till FPS is related to GSCSC.

This particular business area mainly covers the following transactions:

- Purchase of food grains/ coarse grains from FCI or under MSP
- Getting Release Order (RO) for lifting of grains from FCI godowns.
- Assigning RO to District Godown Inspectors (DGI), Lifting Inspector (LI) and Transport Contractor for lifting of grains from FCI godowns
- Lifting and Transportation of grains from FCI godown to GSCSC godown
- Receipt of grains at GSCSC godowns
- Standardisation of grains received from FCI in 50Kg. bags
- Issue of grains to FPS through door-step delivery transport with on-line delivery challan.

The software development for issue/sale from godowns of GSCSC to FPS has been made on line using GSWAN / VPNoBB connectivity.

To cover the computerisation of lifting from the godowns of FCI to the godowns of GSCSC, programmable Hand Held Terminals (HHTs) are used. The software development and integration of HHT and receipts with the main system is over. E-Payment by FPSs has been introduced.

It has been planned to display information related to the lifting from FCI, issue to FPS and godown stock position on the public domain as soon as the software development work is completed.

ENSURING DELIVERIES: Elimination of bogus cards in itself does not guarantee delivery**.** In the case of Gujarat's TPDS Reform Model, elimination has been achieved with the help of these innovations i.e. Bar Coded Ration Card (BCRC) and Bio-Metric based Bar Coded Coupon System. Their pilots are operational since 2011 in more than 200 FPS' areas across the state in the ratio of one FPS in each Taluka. A BCRC contains 2D Barcodes which store vital information about the card holder including the EPIC of one family member. A photograph and Bio-metric details of at least one adult from the cardholder's family is taken before issuing the BCRC.

CONCLUSION & RECOMMENDATION

- Information must reach the cardholders well in advance per period (month) regarding arrival and distribution of items through the FPSs,
- There has to be regular distribution of items throughout the period (month),
- There has to be provision for the poor (BPL) households to get the items from the FPSs in installments, there should be a body mechanism for on the spot redressal of different grievances in a prompt manner. For this purpose, there should be an ombudsman to tackle the situation.
- Ensure reduced number of FPSs for vigilance by a single supply Inspector. The State Supply Department is expected to collect information from the 'Vigilance Committee' voluntarily formed by the consumers (households) at the village level regarding the functioning of the PDS at the local level.
- Though computerization is done for public distribution system in state with the help of National Information Center with the object of issuing 'Smart PDs', but, for the present it has been kept on hold, due to the advent of unique identification project.
- In the end to sum up I must say that the present system in Gujarat, with its all handicaps, by and large is giving a very good account of itself, which is probably the best in the country.

REFERENCES

1. Balakrishnan, Pulapre & Ramaswami Bharat (1997), Quality of Public Distribution System: Why it matters, Economic and Political Weekly, Vol.32 (4), January, p-62.
2. Ghumaan G & Dhiman P (2013) Organization and Working of Public Distribution System A study of Punjab, Indian Journal Of Applied Research, Vol. 3, Issue 4
3. Government of Gujarat (2010), *Policy Note on Cooperation, Food and Civil Supply Department*.
4. Government of Gujarat Socio –Economic Review (2010-11), Department of Economics and Statistics.
5. Government of Gujarat Socio –Economic Review (2012-13), Department of Economics and Statistics.
6. Government of Gujarat Socio –Economic Review (2013-14), Department of Economics and Statistics.
7. Jha, R., Gaiha, R., Pandey, M. K., & Kaicker, N. (2013). Food subsidy, Income Transfer and the Poor: A Comparative Analysis of the Public Distribution System in India's States. Journal of Policy Modeling, 35(6), 887-908.
8. Khosla, R. (2011). Caste, Politics and Public Good Distribution in India: Evidence from NREGS in Andhra Pradesh. Economic & Political Weekly, 46(12), 63.
9. Kumar, B., & Mohanty, B. (2012). Public Distribution System in Rural India: Implications for Food Safety and Consumer Protection. Procedia-Social and Behavioral Sciences, 65, 232-238.
10. Mooij, J. (2001). Food and Power in Bihar and Jharkhand: PDS and its Functioning. Economic and Political Weekly, 3289-3299.
11. Singh U.K. (1991), *Public Distribution System*, Mittal Publications, New Delhi.

WEBSITES

12. http://deity.gov.in
13. http://india.gov.in/
14. https://negp.gov.in

A SURVEY ON TRUSTBASED SECURE AODV IN MANET: A LITERATURE REVIEW

V.VALLINAYAGI
HEAD
DEPARTMENT OF COMPUTER SCIENCE
SRI SARADA COLLEGE FOR WOMEN
TIRUNELVELI

ABSTRACT

A mobile Adhoc network is a collection of wireless mobile nodes forming a temporary network without using any centralized access points, infrastructure or centralized Administration. Data transmission between the two nodes in Manet may require multiple hops as Nodes transmission range is limited. Mobility of the different nodes makes the situation even more Complicated. These nodes are often vulnerable to failure thus making mobile adhoc networks Open to threats and attacks. Routing is always the most significant part for any network. One way is to transplant ordinary mechanisms in common networks with some improvement While the other way is to find some other factors such as trust to achieve the objective. This paper gives you a survey on trust in manet.

KEYWORDS

aodv, manet, network, trustbased, simulation, routing.

1. INTRODUCTION

In Aodv the network is silent until connection is needed. At that point the network node that needs a connection broadcasts a request for connection. Other AODV nodes forward this message and record the node that they heard it from creating an explosion of temporary routes back to the needy node. When a node receives such message and already has a route to the needy node. it sends a message backwards through a temporary route to a requesting node. The needy node then begins using the route that has the least number of hops through other nodes unused entries in the routing tables are recycled after time. When a link fails a routing Error is passed back to a transmitting node and the process repeats.

Much of the complexity of the protocol is to lower the number of message to conserve the capacity of the network. For example, each request for a route has sequence number nodes use this sequence numbers so they do not repeat route request that they have already passed on. Another such feature is that if a route request has time to live number that limits how many times they can transmitted. Another such feature is that if a route request fails another route request may not be send until twice as much time has passed as the timeout of the previous route request. The advantage of AODV is that it creates no extra traffic for communication along existing links. Also distance vectors routing is simple and does not require much memory to calculation. However, AODV requires more time to establish a connection and the initial communication a to establish a connector and the initial communication to establish a route is heavier than some other approaches.

2. WHAT IS TRUST?

As an important concept in network security, trust is interpreted as a set of relations among agents participating in the network activities. These relations are founded on the proof generated by the prior interactions of entities in a protocol. As a general rule if these interactions have been true to the protocol, then trust will accumulate between these entities. Trust has also been defined as the degree of belief about the behavior of other entities (or agents). Establishing trust relationships among participating nodes is vital to facilitate collaborative optimization of system metrics. Trust and security are two tightly interdependent concepts that cannot be desegregated. For example, cryptography is a means to implement security but it is highly dependent on trusted key exchange. Similarly, trusted key exchange cannot take place without requisite security services in place. It is because of this inter-reliance that both these terms are used interchangeably when Defining a secure system.

2.1 PROPERTIES OF TRUST

In the context of a social network viewpoint, there are three main properties of trust: transitivity, asymmetry, and personalization. Firstly, trust is not perfectly transitive in a mathematical sense i.e., if A trusts B, and B trusts C, it does not guarantee that A trusts C. Secondly, trust is not essentially symmetric which means that it is not identical in both directions. A classic case of asymmetry of trust can be observed in the relations between supervisors and employees. Thirdly, trust is Intrinsically an individual outlook. For example, a particular entity will be contrarily evaluated by two people.

2.2 CHARACTERISTICS OF TRUST IN MANETs

In MANETs, the theory of trust is to be defined with caution because of the distinctive features of MANETs and the intrinsic fickleness of the wireless medium. The main characteristics of trust in MANETs are given below:

1. The existence of a trusted third party (such as a trusted centralized certification authority) cannot be assumed. Therefore, a decision method to determine trust against an entity should be wholly distributed.
2. Trust should be gauged without too much computation and communication load in a very customizable manner, while also capturing the complexities of the trust relationship.
3. A trust decision framework should not work under the assumption that all nodes are cooperative for MANETs. In an environment that is restricted of resources, selfishness is prone to be rampant over collaboration. For example, to save battery life or computational power.
4. Trust is not static, it is dynamic.
5. Trust is subjective.
6. Trust is not inevitably transitive. The fact that A trusts B and B trusts C does not mean that A trusts C.
7. Trust is asymmetric and not essentially reciprocal.
8. Trust is dependent on context. A could trust B as a wine expert but not as a car fixer. Likewise, in MANETs, if a specific task entails high computational power, a node with high computational power is considered as trusted; while a node that has low computational power but is not malicious (i.e., honest) is distrusted.

2.3 SECURITY FLAWS OF AODV

Malicious nodes can perform many attacks just by not following AODV rules since AODV has no security mechanisms.

A malicious node M can carry out the following attacks (among many others) against AODV:

1. Impersonate a node S by forging a RREQ with its address as the originator address.
2. When forwarding a RREQ generated by S to discover a route to D, decrease the hop count field to increase the chances of being in the route path between S and D so it can evaluate the communication between them. A variation of this is to increment the destination sequence number to make the other nodes assume that this is a 'fresher' route.
3. Impersonate a node D by forging a RREP with its address as a destination address.
4. Impersonate a node by forging a RREP that claims that the node is the destination and, to add to the impact of the attack, claims to be a network leader of the subnet SN with a big sequence number and send it to its neighbors. Thus it will become (at least locally) a black hole for the whole subnet SN.
5. By not forward certain RREQs and RREPs selectively, not responding to certain RREPs and not forwarding certain data messages. This kind of attack is particularly hard to even detect because transmission errors have similar effect.

6. Forge an RERR message by pretending it as the node S and sending it to its neighbor D. The RERR message has a very high destination sequence number dsn for one of the remote destinations (U). This might cause D to update the destination sequence number corresponding to U with the value dsn and, therefore, future route discoveries performed by D to take a route to U will fail (because U's destination sequence number will be much smaller than the one stored in D's routing table).
7. In accordance with the existing AODV draft, the originator of a RREQ can put a much bigger destination sequence number than the actual one. Additionally, sequence numbers wraparound when arriving at the maximum permissible field size value. This facilitates a very easy attack in where an attacker is able to set the sequence number of a node to any desired value by just sending Two RREQ messages to the node.

3. LITERATURE REVIEW

TRUST BASED SECURE AODV IN MANET

The performance of Adhoc on demand vector protocols has been modified by including the source route accumulation feature. The node may assist and trust each other in forwarding packets from one node to other. However, this implied trust relationship can be threatened by malicious nodes that may modify or disrupt the orderly exchange of packets. Trusted on this trust model we design trusted routing protocols using trusted frameworks and intrusion detection system.We extend the routing table and routing messages of AODV with trust information which can be updated directly through monitoring in the neighbourhood, so the computation is reduced and trustworthiness of the routing procedure can be guaranteed as well. Through simulation we can see that the bud nodes are clearly separated from the good nodes. The performance of AODV and TAODV under different environments were achieved.

ST-AODV QOS ASSERTION MANET ROUTING BASED ON THE TRUSTED AODV

In this paper a trusted ST_AODV protocol is proposed that identifies the nodes that drops packets during data transmission. Trust value for each node is calculated to spot the untrustworthy nods in the path during routing. A node is declared as a trustworthy node if its trust value is greater than the threshold value thus resulting in the trust worthy manet routing. This scheme has a good development on Qos parameter like pdr and delay also has provided trustworthy routing.

TRUSTED ON DEMAND ROUTING PROTOCOLS BASED ON AGENTS FOR MOBILE ADHOC NETWORKS

In this paper a new protocol based on self-monitoring and following the dynamic source routing algorithm is presented. THEREFORE, security is more important Trust routing protocols are one means security. ATDSR depends on self-monitoring of each node to find out its trust value. The advantages of ATDSR Are examined and it is compared with other techniques.

TRUST BASED ROUTING USING DOMINATING SET APPROACH IN WIRELESS ADHOC NETWORK

Some protocols are designed from scratch so as to incorporate security solution and some are designed to provide security measures into the existing protocols. some protocols require each node to have high memory capacity as they store large tables using for stored security information. A new trust based routing protocols is proposed which overcome the above mentioned limitation.

AN ENHANCEMENT SCENARIO OF ROUTING PROTOCOLS SCHEME USING TAODV PROTOCOL AND FUZZY LOGIC

This paper has highlighted, the effect of malicious nodes on Performance of Ad-hoc networks is presented and importance of using trust levels to improve the reliability and performance Ad-hoc networks. Evaluating trust levels between nodes of Ad-hoc networks poses a big challenge due to the lack of infrastructure in Ad-hoc networks. To overcome this limitation a new approach based on fuzzy trust algorithm is proposed to facilitate the evaluation of trust levels between nodes of Ad-hoc networks. Simulation and experimental results collected after applying the TAODV approach show significant improvements in the performance and the reliability and Reduce the Packet dropped rate with reference to Time. Ad-hoc networks in the presence of malicious nodes. However, a number of further investigation could be conducted to extend this approach. User make many trust–based decisions on a Sub conscious level.

TRIUMF: TRUST-BASED ROUTINE PROTOCOL WITH CONTROLLED DEGREE OF SELFISHNESS FOR SECURING MANET AGAINST PACKET DROPPING ATTACK

In this paper we proposed a general solution to packet dropping misbehaviour in mobile ad hoc networks. The solution allows monitoring, detecting, and isolating of the droppers in short time without using promiscuous listning, and can differentiate between selfish and malicious nodes. In our trust routing protocol, nodes can cooperate together to perform trusted routing behaviours according to the trust relationship among them; to route around the misbehaving node. With the trust value threshold, nodes can flexiby decide whether its neighbour is a malicious node or not according to the value of certainty factor. In the future we will simulate the proposed trust routing protocol to show the results and effectiveness of our solutions, and compare it with existing trust based routing protocols like TAODV, TWOACK, and TDSR protocols. A detailed simulation evaluation will be conducted in terms of Routing Packet Overhead, Security Analysis, Mean Time to detect dropper node, Overall Network Throughput, and Average Latency. Also we will study the situation when there is more than one malicious node in the route from the source and destination, with asymmetry of communication link in both directions.

TRUST BASED ROUTING ALGORITHMS FOR MOBILE AD-HOC NETWORK

Mobile Ad-hoc networks (MANETs) has many challenges due to its dynamic nature. Some of the major challenges are number of malicious nodes detected, number of hopes, route discovery time and packet loss.

Routing algorithms namely DMR, TMR and MTMR have their own way in order to establish the trust and transmit packet securely. But message trust based multipath routing protocol proved to be best in terms of number of malicious nodes detected, number of hops, to discovery time and packet loss.

In future we plan to implement the secure routing protocols such as the ARIADNE and ARAN and compare them with the trust based routing protocols. The system handles only text as message for data packets. In future it can be enhanced to include multimedia packets.

RESEARCH AND IMPROVEMENT OF AODV PROTOCOL IN AD-HOC NETWORK

This research has been contributed by JIAO Wen-Cheng, et al.. There are two processes in AODV protocol routing find and routing maintenance. AODV protocol uses the method of hop-by-hop routing to transmit packets. Wormhole attack is a special attack method aimed at Ad hoc network. Based on the analysis of AODV protocol and the attack conditions of wormhole attack, the process and algorithm aimed at wormhole attack are researched.

ENHANCING THE SECURITY OF THE AODV-S ROUTING PROTOCOL

This research has been contributed by Prakash Veeraraghavan, et al.. Security is the major issue in Ad-hoc network. Protocols of MANET do not offer protection against various type of attack. Thus the do not offer any immunity. AODV-s is the modified version of AODV protocol by immune to various type of attacks. It also provides solutions of Dos attack when the hope count modified in it. Outcome of this research it successfully various type of attack which increases the network performance. In future he would like to work on mobility prediction methods.

MODIFIED ROUTING ALGORITHM FOR AODV IN CONSTRAINED CONDITIONS

This research has been contributed by Prakash Veeraraghavan, et al. In MANET AODV exhibits abnormal behaviour due to the high mobility of nodes in the network. The proposed work is aimed at performance improvement in internet connectivity by applying local congestion methods in routing protocols.

Outcome of this research increases packet\delivery ratio even in constrained conditions in satisfactory level and also improvement of network load and end to end delay has achieved.

PERFORMANCE COMPARISON AND EVALUATION OF AODV, OLSR, AND SBR IN MOBILE AD-HOC NETWORKS

This Research has been contributed by Alexander Klein, et al. In this paper various proactive routing protocols has been compared like SBR, AODV, and OLSR in various mobile scenarios with different traffic pattern.

This protocols are compared on the basis of reliability and routing overhead. Outcome of this research source SBR achieve high end to end reliability without frequent end to end roite calculations. Future directions of research is to increase the reliability without increasing the routing overhead.

PROPOSED WORK TO DECREASE THE ROUTING OVERHEAD

AODV enhanced local repair is Motivated by the issues identified in local repair. Aodv which uses to broadcast locally to repair the route. In trusted Aodv rout repair by unicast mechanism instead of broad cast. Trusted route aodv is modified by sending route error message towards the source by the help of RREP to report the route failure.

So that routing congestion will decrease and propogation delay will reduce. We know that until it sends the route packet it never stops the data sending. If it has a trust worthy node and pick by the route, then it leads to decrease the congestion an d delay.

CONCLUSION

In this paper we have done survey of all the paper published in AODV in futures we would like to improve this protocol by removing one of the drawbacks of AODV that is routing overhead by our proposed methodology and research work. As described in this paper, significant research has already been performed in the area of congestion and security. However, a number of issues still Remain unresolved or not completely addressed.

Additionally, the proposed solution is in most cases not tested in real environment Therefore, future studies should rather be devoted to real implementations than just simulation. Only such an approach can ultimately verify a protocol's usefulness in future Ad-hoc network.

REFERENCES

1. S. Marti, T. J. Giuli, K. Lai, and M. Baker, "Mitigating routing misbehavior in mobile ad hoc networks," in Proceedings of the Sixth annual ACM/IEEE International Conference on Mobile Computing and Networking, 2000, pp. 255–265.
2. S. Buchegger and J.-Y. LeBoudec, "Performance Analysis of the CONFIDANT Protocol (Cooperation of Nodes: Fairness in Dynamic Ad-hoc Networks)," In Proceedings of the 3rd ACM International Symposium on Mobile and Ad Hoc Networking & Computing (MobiHoc 2002), pp. 226–236, Lausanne, Switzerland, June 2002.
3. X. Li, M. R. Lyu, J. Liu, "A Trust Model Based Routing Protocol for Secure Ad Hoc Networks". In the Proceedings of IEEE Aerospace Conference (IEEEAC) 2004, pp. 1286-1295.
4. M. G. Zapata and N. Asokan, "Securing ad hoc routing protocols," in Proceedings of ACM Workshop on Wireless Security (WiSe '02). Atlanta, USA: ACM Press, September 2002, pp. 1–10. [Online] Available: http://doi.acm.org/10.1145/570681.570682.
5. K. Balakrishnan, J. Deng, and P.K. Varshney. "Twoack: preventing selfishness in mobile ad hoc networks,". In The IEEE Wireless Communication and Networking Conference (WCNC'05), pp. 2137-2142, New Orleans, LA, USA, March, 2005

A STUDY ON THE PERCEPTION AND AWARENESS OF THE PEOPLE ABOUT THE DIGITAL INDIA INITIATIVE OF THE GOVERNMENT OF INDIA

DR. ASHA NAGENDRA
PROFESSOR
SYMBIOSIS INSTITUTE OF MANAGEMENT STUDIES
SYMBIOSIS INTERNATIONAL UNIVERSITY
PUNE

ANUKRITI PANDEY
STUDENT
SYMBIOSIS INSTITUTE OF MANAGEMENT STUDIES
SYMBIOSIS INTERNATIONAL UNIVERSITY
PUNE

VISHAKHA BABBAR
STUDENT
SYMBIOSIS INSTITUTE OF MANAGEMENT STUDIES
SYMBIOSIS INTERNATIONAL UNIVERSITY
PUNE

ABSTRACT

This research is focused on "Digital India: An Illusion or Reality", where the motive was to analyze the perception of the general public towards the initiative of the government of India. The underlying objectives were to find level of awareness and its implications on the mindset of individuals and to find a relationship, between the age of the respondents and their level of awareness. The source of information collected was primary data via questionnaire which was administered to the respondents belonging to different age groups. Stratified random sampling was used to gather 100 respondents pan India. It was found that age and awareness held a negative relationship, i.e. the older respondents seemed to be little less aware about the Digital India initiative whereas the younger generation had a very proactive outlook towards the same. As for the correlation between awareness and mindset it was further derived that the more the people were aware the better was their mindset, i.e. the more positive. Being the first research paper of its kind it succeeded in breaking the myth about the current generation being ignorant of the state of the economy, and the steps taken to improve it. The youth is not just aware but has very gainful insights into this whole initiative. The faith in the current government is however not blind, and we had some very reasonable criticism coming our way too. The aim of making the whole of rural India digitally able in a short span of 5 years is very unrealistic. The major benefit of this research study was spreading greater awareness and generating a sense of inclusion for a common man. The inputs received if taken up by the government can assure a better success of the programme.

KEYWORDS
digital India, youth, awareness, mindset.

INTRODUCTION

"Status now is not whether you are awake or asleep, it is whether you are online or offline."

Narendra Modi
PRIME MINISTER OF INDIA

The Modi government finally set the wheels in motion of the Indian economy after a long period of chaos. They started off with various initiatives like Make in India followed by Skill India and now we have the Digital India. The digital India programme focuses on harnessing digital technologies and empowering every citizen with access to digital services, knowledge and information. It is all about reducing the paper work and to make technology the means to bring about a national change. One of the major future implications of this initiative will be the connection between the rural and the urban India. This paper tends to elaborate on the goals set by the government of India within the digital India programme and the loop holes around these goals. This paper is an attempt to understand the programmes started by the government and to interpret it in a way so that the lay man can make sense out of the pros and cons of the initiatives.

The topic is important from research point of view because as citizens it is important for us to know that the initiatives taken by the government will have what level of significance in our day to day lives. It is essential for the general public to know all the facts and figures, and also analyze the benefits or drawbacks that it holds. This paper will help in getting a basic idea what is digital India all about.

OBJECTIVES

1. To determine the level of awareness and its implications on the mindset of individuals
2. To assess whether the younger generation has a positive mindset or not, towards the digital India initiative.

LIMITATIONS

1. Since the Digital India has only just begun, it will be difficult to understand its full-fledged impact on the country.
2. Besides, general populations' ignorance can render this research ineffective

LITERATURE REVIEW

The article "The Recipe for a True Digital India" reviews how the vision of a digital India is easier said than done. As of now more than a billion people are devoid of the internet technology and to provide it to each of them along with technical know-how of how to put it to the best use possible is a little far-fetched given the current standards of infrastructure and ease of doing business in the economy. It sheds light of various shortcomings like: Despite the growth witnessed in the mobile sector, due to poor network infrastructure there is scarcely any difference in 2g and 3g speeds; the national optical fiber network which is of key importance to the digital India scheme is battering; the growth of e commerce is being hampered by the inconsistent regulations. The learning from this article is that there

are various roadblocks to the scheme of digital India. Though they are not easy to overcome they are neither impossible. The work has to start from the ground level, in every direction not just in infrastructural aspect, mending past faults and thus moving towards a better future.

The article dated 6th July '15, on Livemint, titled Digital India: Challenges and opportunities, sheds light on the importance of bringing the panchayats under the internet sphere. The focus of the digital India programme should be on the rural India. It's not just about constructing the right infrastructure, but more importantly about how well the infrastructure works and when. Setting up optical fibers is the easiest part the major challenge is ensuring that each panchayat point of broadband is fired up, functional, used and distributed. Most of the schemes under the digital India programme are not new, just the old ones aligned under one major programme. What is to be learnt for this article is the epicenter of the whole digital India initiative has to the villages and the panchayats, because even now that where the majority of the India resides, therefore the aim of the government should be to provide digital literacy to a large number of villagers, making them broadband-connected, and set a target number of panchayats to be brought under this scheme completely

RESEARCH METHODOLOGY

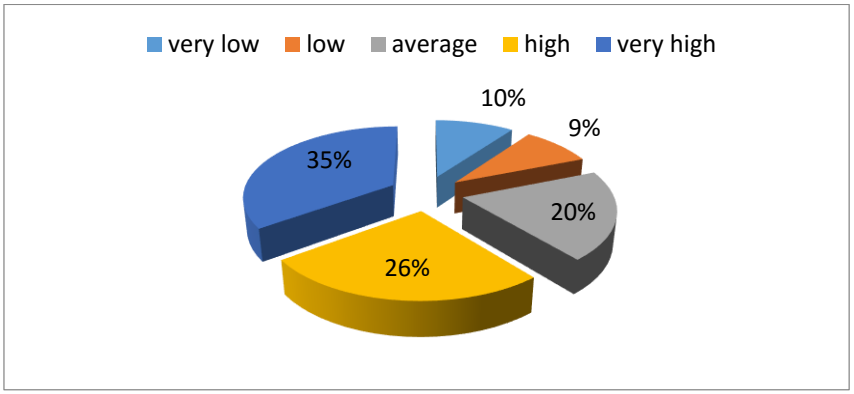
The topic, "**A study on the perception and awareness of the people about the Digital India initiative of the Government of India"**, was selected owing to the various policies brought in by the dynamic new government with special focus on Digital India initiative. Data sources were majorly secondary including newspaper studies and sites like Department of Electronics and Information Technology Government of India (DEITY), Digital Indian (mygov), National Portal of India etc. A stratified random sample of 100 individuals was subjected to a questionnaire. The sample included individuals from different backgrounds professionally and economically with their age ranging from 16 to 65 and above. The questionnaire was prepared and administered to the respondents. The pre testing of the questionnaire was tested on 10 respondents and they comprised of students, working professionals and retired senior citizens. While they were answering, their behaviors and gestures towards certain questions were noted and changes were made accordingly. The main objective was to draw a complete picture of the pre and post Modi government and also to determine the outlook of the general public and their perspective towards the initiative. Primary data was the main source for data collection. The study was undertaken with a well-structured questionnaire which was administered via Google doc. The primary data was then interpreted, processed and analysed using percentage analysis and to calculate the general awareness regarding the much hyped Digital India Programme and its credibility as observed by the citizens of India. Data collected was presented in the form of tables and figures wherever required. Excel tools were used to formulate graphs and charts used in models and augmented by tables of data.

RESULTS

TABLE 1: AWARENESS OF THE DIGITAL INDIA INITIATIVE UNDERTAKEN BY THE GOVERNMENT

S. No.	Response (level of awareness)	Percentage
a.	Very Low	10
b.	Low	9
c.	Average	20
d.	High	26
e.	Very High	35

FIGURE 1: AWARENESS ABOUT DIGITAL INDIA

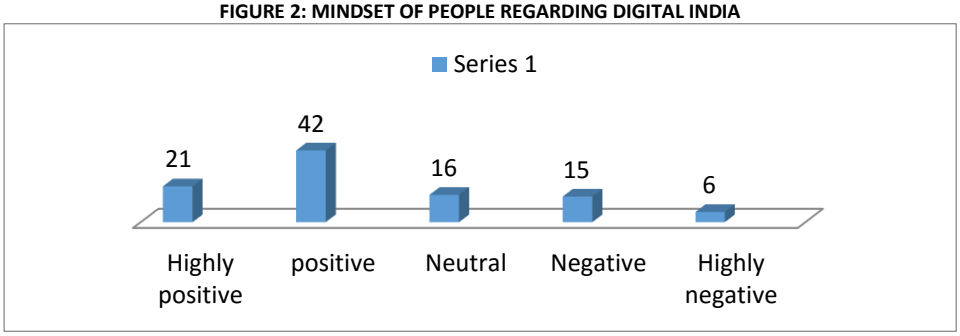


Discussion: Table 1 and figure 1 represents that maximum sample of 58% were unaware of the Digital India initiative and the rest 42% had knowledge about the same.

TABLE 2: OUTLOOK REGARDING THE DIGITAL INDIA INITIATIVE (if no)

S. No.	Response	Percentage
a.	Highly positive	21
b.	Positive	42
c.	Neutral	16
d.	Negative	15
e.	Highly negative	6

FIGURE 2: MINDSET OF PEOPLE REGARDING DIGITAL INDIA



Discussion: Table 2 and figure 2 show that amongst the people who were aware of the programme there was approx. 63% that had positive mindset in comparison to 21% that had negative views about the same.

TABLE 3: STATED REASONS FOR THE LAUNCH OF THE PROGRAMME BY THE RESPONDENTS

S. No.	Response	N=100	Percentage
a.	Transparency	15	15
b.	Reduced Paper wastage	12	12
c.	Corruption	11	11
d.	Rural upliftment	5	5
e.	Others reasons	57	57

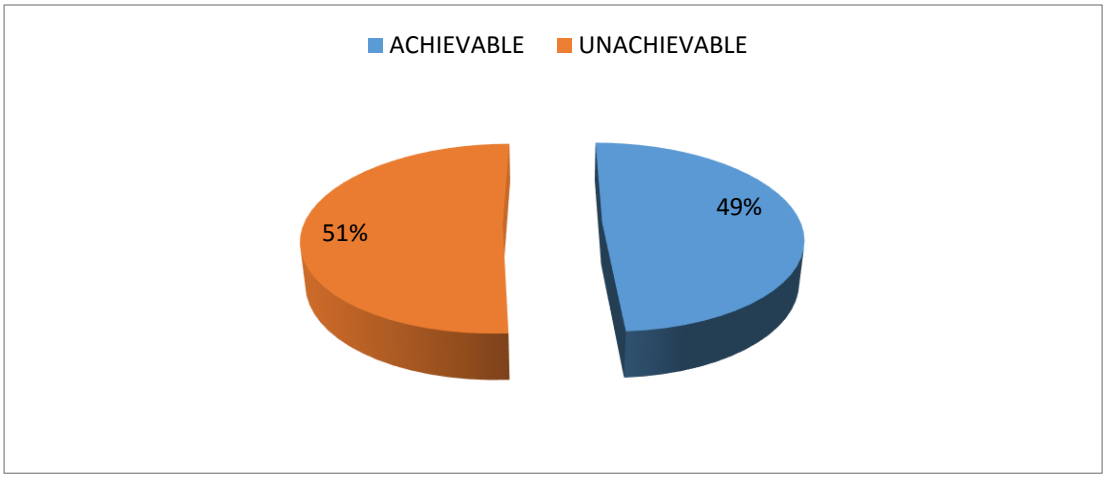
Discussion: The main reason according to the respondents for launching the Digital India programme was to create transparency between the government and the general public. The response includes reduced paper wastage, reduction in corruption etc as further reasons to launch the respective programme.

The news report on Digital India states that there is less awareness in the society about the initiative but the research shows otherwise, it did not just show people's awareness about the programme but also their in depth valuation of the same. If not much, then they had at least some knowledge about the initiative. On a point of similarity with the article the respondents were at a back foot when it came to the knowledge about rural upliftment being a major aim of the Digital India initiative

TABLE 4: RESPONSE REGARDING THE ACHIEVABILITY OF THE GOALS SET BY THE GOVERNMENT OF INDIA WITHIN THE DIGITAL INDIA INITIATIVE

S. No.	Response	N=100	Percentage
a.	Yes	49	49
b.	No	51	51

FIGURE 3: PERCEPTION ABOUT ACHIEVABLE GOAL



Discussion: Table 4 and figure 3 is indicative of the fact that there is a very close tie between those who believe that the goals are achievable and those who believe they are not, 49:51. What was observed was, since people were not actually aware about the rural empowerment agenda of the government, their outlook about the programme was quite positive. But it was all owing to the ignorance. A gradual increase in people's understanding about this initiative is observed as they move further with the questionnaire.

CONCLUSION

The conclusion of the entire research is given as aligned to the objectives. The first objective was, "to determine the level of awareness and its implications on the mindset of individuals", a direct relationship was observed between the level the awareness and the mindset of the people towards the Digital India initiative. The more abreast with the information the more positive was found to be the outlook. Thus it can be referred that as people researched into the intricacies of the Digital India programme, they were actually satisfied with the aims set by the government.

The second objective was, "To know that the younger generation has a more positive mindset because they are more aware about the Digital India initiative". There was a negative correlation between the age groups and the level of awareness amongst the respondents. The people in the bracket of 16 to 35 years of age were well aware and had a positive mindset towards the initiative taken by the government, whereas the people in the bracket of 36- 65 years and above were skeptical about the change and resisted the programme.

When the research on 'Digital India: An Illusion or Reality', was conducted we came to a realization that the general public was not so unaware after all. Being the first research paper of its kind it succeeded in breaking the myth about the current generation being ignorant of the state of the economy, and the steps taken to improve it. The youth is not just aware but has very gainful insights into this whole initiative.

The faith in the current government is however not blind, and we had some very reasonable criticism coming our way too. The aim of making the whole of rural India digitally able in a short span of 5 years is very unrealistic.

RECOMMENDATIONS

One of the major changes which will have to accompany digital India Initiative is making every government official at ease with using computers. Also since all the mechanism will be virtually handled, it increases the scope of cybercrime. Thus an equal growth in the cyber security has to be a part and parcel of this Digital India initiative. There would be, finally, some authority or officials at the top of it; hence again, we would have some scope of human indulgence, which can go either way, therefore proper monitoring cannot be done away with.

REFERENCES

1. Economic Times Bureau, on 2nd July '15, an interview with Narendra Modi "Digital India can help bridge technological divide".
2. Gandhi V.F. (2015), article named, "The recipe for a true Digital India", published in Mail Online India on 15th July.
3. Manzar O. (2015), article titled, "Digital India: Challenges and opportunities" published in live mint.com on 6th July.
4. Rao S.S. (2005), research paper titled, "*Bridging Digital Divide: Efforts in India*". Telematic and Informatics).

IMPACT OF ICT & OPENNESS ON STUDENTS' PERFORMANCE IN QUANTITATIVE SUBJECTS

SHILPA MUJUMDAR
ASST. PROFESSOR
SYMBIOSIS INSTITUTE OF COMPUTER STUDIES & RESEARCH
SYMBIOSIS INTERNATIONAL UNIVERSITY
PUNE

DR. H. S. ACHARYA
PROFESSOR
ALLANA INSTITUTE OF MANAGEMENT SCIENCE
PUNE

DR. TEJASWINI APTE
ASST. PROFESSOR
SYMBIOSIS INSTITUTE OF COMPUTER STUDIES & RESEARCH
SYMBIOSIS INTERNATIONAL UNIVERSITY
PUNE

VENKATESH IYENGAR
RESEARCH SCHOLAR
SYMBIOSIS INSTITUTE OF MANAGEMENT STUDIES
SYMBIOSIS INTERNATIONAL UNIVERSITY
PUNE

ABSTRACT

Open education represents a broad movement in educational reform. The openness can be incorporated by allowing students to identify problem from real life and make use of ICT that helps the learning process to get experience within the limited time. Use of ICT in education has positive impact on teaching, learning and attitudes of students'. Problem-based learning (PBL) is well suited for learning real life problems for ICT literate students. The PBL (with openness) and ICT approach was adopted by teacher to find if this mixed approach has helped students better understand the subjects' Statistics and Operations Research than by traditional approach. The authors find most of the evidences point to the fact that traditional teaching, ICT and open education do lead to better learning of the students. The subjects OR and Stats help students' in improving their logical ability and enhancing their overall quantitative skills. But when these subjects are taught by traditional methods, create a feeling of irrelevance among students and result in their low performance. Hence the researchers have studied the impact on performance of students by adopting ICT and PBL to teach Statistics and Operations Research. The sample for the study comprises of students from three different batches of an Indian techno management institute, one control batch and two treatment batches. Data was obtained from two sources: One from students' survey and another students' CGPA obtained at the final exam of semester. CGPA data is collected for all three batches whereas survey data is collected for students of treatment batches only. The results of first, second and third semesters, for control batch and treatment batches are considered for present paper. The final results of treatment batches are compared with results of controlled batch.

KEYWORDS
openness in education, ICT, PBL, statistics, operations research, quantitative skills.

1. INTRODUCTION

Open education represents a broad movement in educational reform. Open education, also known as open classroom, is a type of educational reform [Hein, George E. (1975)]. The open classroom is defined by decentralized learning areas, freedom of movement from area to area, room to room, individual or group activities, and unstructured periods of study. The central tenet of this informal system is that students will learn naturally if left to their own initiative. The openness can be incorporated by allowing students to identify problem from real life and make use of ICT that helps the learning process to get experience within the limited time.

The potential of Information and Communication Technologies (ICTs) is to provide a rich learning environment for learners. The pedagogy, access, management, cost, and the work that engaged in distance education have been significantly impacted by technological changes. As published in UNESCO (2002) information and communication technology (ICT) may be regarded as the combination of 'Informatics technology' with other related technology, specifically communication technology like email. [Cited by Noor (2013)]. ICT helps students' in learning to the extent they use it [Kuh, G. D., & Hu, S. (2001)]. Also use of ICT in education has positive impact on teaching, learning and attitudes of students' [Noor (2013)]. Problem-based learning (PBL) is well suited for learning real life problems for ICT literate students. To empower students to conduct research, apply knowledge and to develop skills to solve a problem, PBL was used [Savery 2006]. It is now recognized as an innovative instructional methodology and is used across all disciplines [Duch, Groh, and Allen 2001].

2. LITERATURE REVIEW

The concepts learnt in class applied to real life problems [Joerding (2010)] helps in reducing the feeling of irrelevance about the subject. The subjects like Statistics (Stats) and Operations research (OR), when taught to undergraduate management students by traditional method, create a feeling of irrelevance among them [Papejoij (2008), Levin (2006), Kao (1997)]. Hence the article by Kao C. et al (1997) suggests looking into pedagogy and the need of students' realization about the importance of the Statistics (Stats) and Operations research (OR) subjects. These subjects have long been accepted as an inherent part of management studies in the US and hence have been replicated in Asian countries; however, the pedagogy of OR in most of the Asian countries has not received attention. The subjects OR and Stats help students' in improving their logical ability and enhancing their overall quantitative skills [Kao C. et al (1997)]. Hence Problem based Learning (PBL) is one of the approaches that help in learning Operations Research (OR) using real life problems [Chen, Z. (2002)].

3. RESEARCH METHOD

The objective of the research paper is to identify if students learn better when openness is mixed with the traditional teaching methods and ICT. Educating for successful problem-solvers is one of the main goals of PBL [Dochy, Segers, Van den Bossche, & Gijbels, 2003]. Although originally developed for medical training in Canada, the orthodox version of PBL has been modified and applied globally in many disciplines (Gijselaers, 1995). [As cited by Gijbels, D.et. al. (2005)]. In PBL, the problems are deliberately ill-structured (or open-ended) and are typically based on real-life situations; they are designed for thoughtful and careful analysis to help improve critical thinking skills by applying the learner's own expertise and experience to data collection, analysis, and formulation of a solution (Jonassen 1999). [Cited by Macklin, A. S. et. Al. (2008)]

- The PBL was adopted by teacher to help students understand the subjects'. The study was conducted at one of the Indian techno management institute. The sample for the study comprises of students from three different batches, one control batch and two treatment batches. The students' are taught Business maths (BM), Statistics (Stats) & Operations Research (OR) in first, second and third semester respectively. The present study took place in course of Statistics & Operations Research. Control batch (batch1) students were taught by only traditional method and have not gone through PBL in BM, Stats and OR. As no openness was introduced to batch1 students hence this batch is called as Control batch. Treatment batch (batch2, batch3) students went through PBL in Stats and OR learning. The openness (using PBL) and use of ICT contributes to 20% and Traditional teaching 80%, of total teaching. The instructions for PBL were given during the weekly lectures and through emails. The Google spreadsheet was used to monitor the progress of students. Google spreadsheet shared by teacher with students helped in better communication among them, such as information about groups of students, their domains, selection of appropriate statistical/OR technique to be used for analysis of data. The information, data collected about problem by students was stored in electronic form. Spread sheets and/s/w TORA [Taha 2006] was used by students to compute and data analysis. The analysis was discussed and concluded as report. This was summarized in open office writer/word. These reports were submitted to teacher through mail. Further the students defended results obtained in PBL by giving presentations.
- Out of three batches considered for the present study, final results of treatment batches are compared with results of controlled batch using CGPA in each semester. The students were encouraged towards initiation of the solution for real life challenges (PBL). They were encouraged to move out of the rigid boundary defined by the prescribed syllabus. Marks were allocated to this component and were included as part of the continuous evaluation process.
- The techno management students of all batches learn BM by traditional method in first semester. To differentiate the impact of components openness and ICT in treatment batch from control batch, researchers have considered the final results of each first, second and third semester for all batches (control and treatment batches). Students were asked to form groups of 3 to 5 students for Stats & OR for PBL. All the groups in respective semester were guided by only one teacher. The numbers of students participated in Statistics & OR for PBL are described in Table 1.

TABLE 1: NO. OF STUDENTS APPEARED FOR PBL ACROSS TWO BATCHES AND FOUR SEMESTERS

Semester ↓	Batch (No. of Students) →		
	Control Batch	Treatment Batches	
	Batch 1	Batch 2	Batch 3
Semester 2 (Statistics)	109	81	99
Semester 3 (Operations Research)	111	109	79

4. INSTRUMENTS

Data was obtained from two sources: source one is students' survey and another source is students' CGPA obtained at the final exam of each semester. The teacher introduced openness in the learning process by allowing the students to identify real life problems of their choice, collect data, store in electronic form, use software to compute and analyze, interpret and infer (PBL). The data collected by surveying these students, Pre admission performance (12^{th} marks) and their final results as Cumulative grade points (CGPA) are considered for present paper. The questionnaire for survey was designed by teacher to get feedback/response of student after completing PBL. Student attributes like names, their nationality, medium of instruction, pre admission data are collected as part of survey. The variables relating to openness and ICT and their impact are discussed in Table 2

TABLE 2: VARIABLES DESCRIPTION IN RELATION TO OPEN & ICT COMPONENT

Variable	Impact	Percentage of Students from batch2		Percentage of Students from batch3	
		Stats	OR	Stats	OR
1 Use of Internet for Course Material	Self-learning habit -ICT attitude	40%	25%	48%	33%
2 Freedom availed to select the domain	Self-learning habit & willingness to think beyond boundary of syllabus	95%	98%	96%	97%
3 Use of internet for Data Collection	Extraction from right sources, ICT and PBL	94%	2%	96%	1%
4 Store data in electronic form,	ICT – awareness	100%	90%	100%	81%
5 Use of computer (software) for Data Analysis	ICT –attitude	92%	84%	92%	72%

The students were asked questions related to variables 1-5 and responses were collected from students as response "yes/no" to the questions asked. The percentages of students answered "yes" are shown in Table 2. Researchers observe that students' are willing to use ICT for storing data in electronic form and its analysis. In stats students' are willing to use internet for data collection but for OR PBL, students need to visit organization to gather information hence very few students are using internet for data collection in OR PBL. The percentage corresponding to Freedom availed to select the domain reflects majority of students' are willing to think beyond boundary of syllabus and take up a new problem on their own.

Use of ICT essentially included, encouraging students to use Spread sheets [Levine (2006)] for organizing data and letting them make use of library functions for statistical data analysis. In case of Operations Research, students were encouraged to use spreadsheets or application software TORA [Taha]. Students were asked to articulate their experiences in word file and asked to present and defend their findings using Power Point presentations. Limited use of open source lecture management system also added up to the ICT component of the treatment. Use of shared Google docs, communication through emails and submission of reports in electronic form were the other aspects of ICT implemented by teacher.

The methodology of adopting PBL in teaching Statistics & OR was supported by Cochran (2009). He says that while operations research pedagogy was relatively static for several decades in the early life of the discipline, the landscape has changed rapidly and dramatically over the past two decades. Until approximately 1990 introductory operations research courses generally featured a heavy focus on the mathematical underpinnings of solution algorithms for various classes of problems but there are new approaches adopted like Active learning, Co-operative learning, Cases, Projects, Interdisciplinary course development, Software, Support Initiatives adopted by instructors in different institutions. The deep and long-lasting understanding of students' takes place when they explain and defend their ideas [Joerding, (2010)]. Hence students were asked to present their work done in PBL. The evaluation components adopted for three batches are depicted in following table.

TABLE 3: EVALUATION PATTERN FOR STATS AND OR ADOPTED FOR TWO BATCHES

Batch	Internal Evaluation Components							External Evaluation Result
	Sem 1 Business Maths		Sem 2 Statistics		Sem 3 Operations Research		Weight-age	CGPA
	PBL	Present-action	PBL	Present-ation	PBL	Present-ation	(Int. to Ext. Marks)	
Control Batch (Batch 1)	N	N	Y	Y	Y	Y	60:40	Available for all three semesters
Treatment Batch (Batch 2)	N	N	Y	Y	Y	Y	60:40	Available for all three semesters
Treatment Batch (Batch 3)	N	N	Y	Y	Y	Y	40:60	Available for all three semesters

Y- YES, N- NO, Int. - Internal, Ext. - External

The Table 3 shows that Batch one did not have PBL (open) and ICT component. Hence plays the role of Control in determining the contrasts. Batch one, two and three had the same teacher for stat and OR. Batch two and Batch three had PBL and ICT components incorporated. Batch two and Batch three participated in Post survey regarding their experience (as per response form designed by the teacher). Batch two and Batch three had PBL components and hence internal evaluation patterns differed from Batch 1 as indicated in Table 3. The internal to external weights changed from 60:40 to 40:60 only for the third batch. The Tables 4, 5 show distribution of domain of data collected, Distribution of Techniques used for Statistical Analysis by students' group for treatment batches.

TABLE 4: DISTRIBUTION OF TYPES OF DATA COLLECTED BY STUDENTS FOR PBL IN STATS

Type of Data↓	Control Batches→		
	Batch 2	Batch 3	Total No. of Students' group
General data	18	2	20
Time Series Data	20	18	38
Total No. of Students' group	*38	*20	*58

TABLE 5: DISTRIBUTION OF STATISTICAL TECHNIQUES PREFERRED BY STUDENTS' GROUP

Technique used↓	Control Batches→		Total No. of Students' group
	Batch 2	Batch 3	
Data Collection Only	1	0	1
Basic descriptive statistics	22	10	32
Basic descriptive statistics, Correlation, Regression & Time Series	15	10	25
Total No. of Students' group	*38	*20	*58

* for statistical analysis spreadsheet was used by all groups of students

TABLE 6: DISTRIBUTION OF NO. OF GROUPS ACCORDING TO DOMAINS FOR PBL IN OR ACROSS BATCHES

Domain selected for PBL in OR ↓	Control Batches→		
	Batch 2	Batch 3	Total No. of Students' group
Restaurant	14	5	19
Medicine	2	2	4
Auto mobile	1	5	6
Education	1	1	2
Software company	1	0	1
Jewelry	1	1	2
Petroleum	0	1	1
Clothing	0	2	2
Super shop	0	1	1
Total No. of Students' group	20	18	38

TABLE 7: DISTRIBUTION OF TOOLS USED IN OR

Tool Used in PBL for OR↓	Batches→		Total No. of Students' group
	Batch 2	Batch 3	
Spreadsheet	4	13	17
TORA	16	5	21
Total No. of Students' group	*20	*18	*38

The problems undertaken by students' were analyzed as represented in cross tables (Table 4 to Table 7) and following hypotheses were formulated: (i) H1: There is no significant difference between the choices of data in PBL for Stats (general & time series data, Table 4). (ii) H2: selection of techniques for PBL in Stats by students across batches is not significant (Table 5), (iii) H3: There is no significant difference between the choice of domain for PBL in OR across the batches (Table 6) (iv) H4: There is no significant difference between the choice of software for PBL in OR across the batches, (Table 7). The first, second and third hypotheses relate to measure openness and fourth hypothesis relates to use of ICT. Further the descriptive statistics of CGPAs is shown in Table-8. The comparison of past and present students' performances are shown in figures 1(a) to 1(e) using histograms.

TABLE 8: DESCRIPTIVE STATISTICS OF CGPAs (FINAL RESULTS) OF STUDENTS'

Descriptive Statistics↓	Batches→								
	Control Batch			Treatment Batch					
	Batch 1			Batch 2			Batch 3		
	Sem I	Sem II	Sem III	Sem I	Sem II	Sem III	Sem I	Sem II	Sem III
AM	2.29	2.52	2.78	2.37	2.41	1.96	2.47	2.29	2.69
Median	2.50	2.71	3.01	2.59	2.52	1.98	2.67	2.46	2.84
SD	1.20	1.02	0.85	1.02	1.00	1.26	1.04	1.17	0.93
CV (%)	52.34	40.37	30.84	43.24	41.53	64.54	42.29	51.28	34.5
Skew ness	-0.34	-0.64	-1.09	-0.71	-0.33	-0.10	-0.50	-0.29	1.01
Kurtosis	-1.156	-0.31	1.03	-0.40	-0.69	-1.48	-0.83	-1.24	0.9

FIG. 1 (A): FREQUENCY DISTRIBUTION OF MATHS MARKS OF STUDENTS IN 12TH

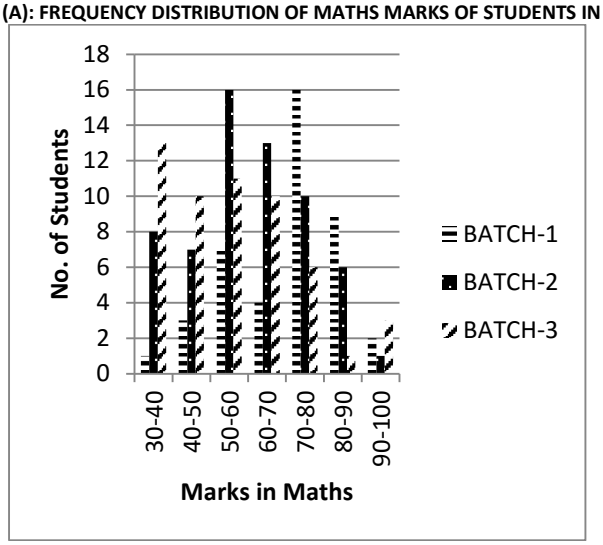


FIG.1 (B): FREQUENCY DISTRIBUTION OF AGGREGATE % OF STUDENTS IN 12TH

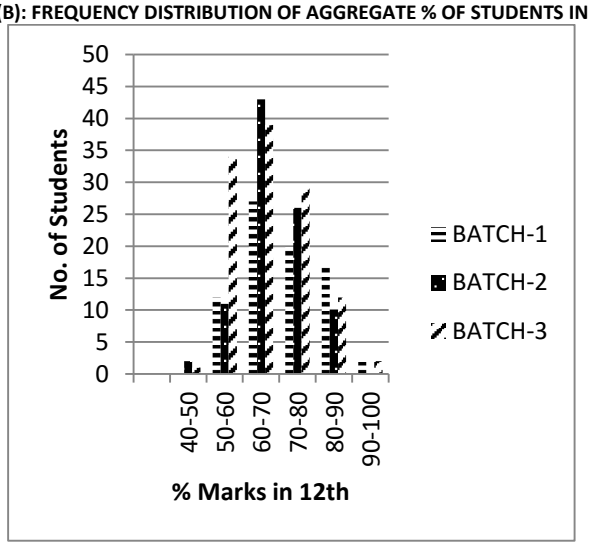


FIG. 1 (C): FREQUENCY DISTRIBUTION OF CGPA FOR CONTROL BATCH 1

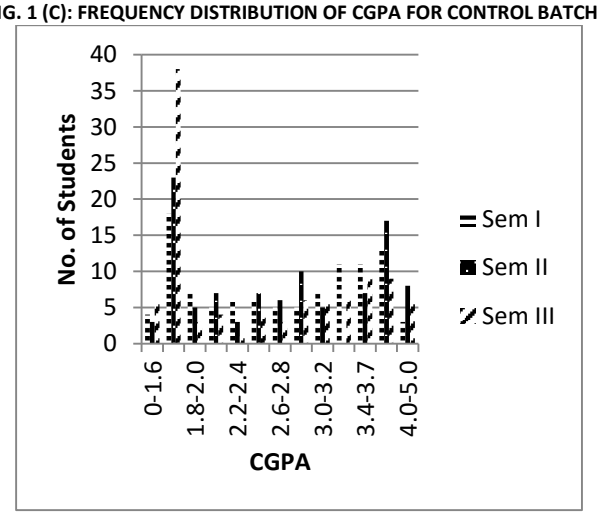


FIG. 1 (D): FREQUENCY DISTRIBUTION OF CGPA FOR TREATMENT BATCH 2

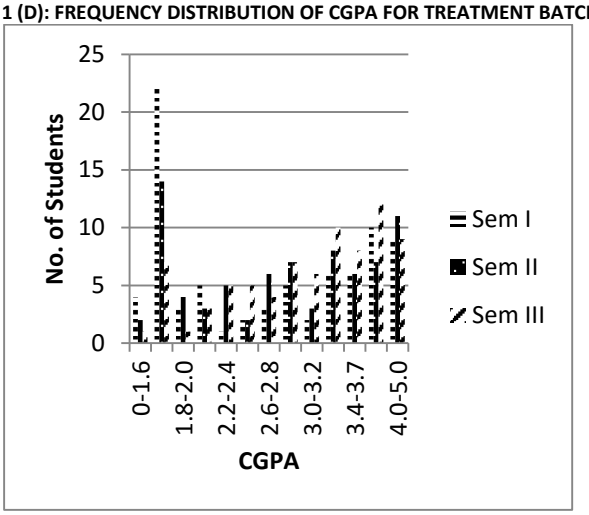
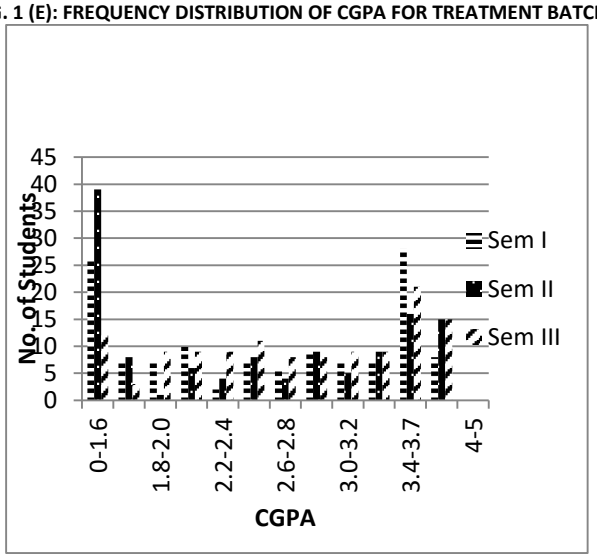


FIG. 1 (E): FREQUENCY DISTRIBUTION OF CGPA FOR TREATMENT BATCH 3



5. DATA ANALYSIS

The data analysis followed two steps process. First the survey data collected in response to PBL was tabulated in cross-tables. The Chi-square test was applied to test the hypothesis H1 to H4. The results obtained are summarized below in Table 9:

TABLE 9: RESULTS OF CHI-SQUARE TEST

Hypothesis	H1	H2	H3	H4
p-value	0.004	0.506	0.009	0.0012

The hypothesis H1, H3 and H4 are rejected at 5% level of significance. Hence it is concluded that (i) There is significant difference between the ways students choose data at 5% Level of significance for Stats PBL. (ii) There is no significant difference in selection of techniques for PBL for Stats by students across batches (iii) There is significant difference between the choice of domain for PBL in OR across the batches (iv) There is significant difference between the choice of software for PBL in OR across the batches. The Chi-square test applied to Hypothesis H1 to H4, helps to find students response towards openness in education. The Chi-square test applied to H4 finds use of ICT by students'. Descriptive statistics of CGPAs is discussed below.

The patterns of performance of the candidates prior to the admission at Techno management institute (Fig 1a,1b), and current performance using histograms (Fig 1c,1d,1e) noted the following interesting facts. Histograms of all past performances (Fig 1a, 1b) are all almost normal, with single mode and not very skewed. Histograms of CGPA, statistics and OR were mostly bimodal in all semesters and batches. Batch 1 happens to be the control. Batch 2 and 3 are the ones which were treated with allocation of independent projects.

Histograms show that of all three semesters for Batch 1 has maximum number of students scoring CGPA between 1.6 to 1.8. The variation in CGPA is least in Sem II and largest in Sem III. CGPAs are negatively skewed and platykurtic in nature for all semesters. In case of all three semesters for Batch 2,most number of students have got CGPA between 1.6 to 1.8 in Sem I, but in Sem II and Sem III maximum number of students have got CGPA between 3.7 to 4. There is reduction in variation as semester progresses and variation in CGPA is least in Sem III. CGPAs are negatively skewed and platykurtic in nature for semesters I and II, whereas negatively skewed and leptokurtic for semesters III. For two semesters of Batch 3, most number of students have got CGPA between 1.6 to 1.8 in Sem I but in Sem II maximum number of students have got CGPA between 3.7 to 4. The variation in CGPA of Sem III is larger than Sem II. CGPAs are negatively skewed and platykurtic in nature for both semesters.

Hence the past performances are almost symmetric distributions close to a normal distribution. However, the distribution of CGPA, an indicator of the total performance at techno management institute, is non symmetric and bimodal under the newer system of education (in Sem II & Sem III). The authors find most of the evidences point to the fact that traditional teaching, ICT and open education do lead to better learning of the students. Use of ICT in education helps to enhance performance of the student [Zahariev, P. et. Al. (2013), Vaičiūnienė, V. (2012), Morris, H. (2009, March) Macklin, A. S. (2008)].

The findings of this study indicated that when using a PBL approach to teach and reinforce ICT skills, students were able to formulate more sophisticated problem representations than they did on their own by sharing experiences and prior knowledge. Despite the fact that the sample size was small, students collectively Demonstrated a shift from weakly defined information goals, to well-articulated research needs, [Macklin, A. S. (2008)].

6. CONCLUSION

The results of the experiment have produced quite a few evidences in support of the argument that students learn better when openness is mixed with the traditional teaching methods and ICT. The researchers have observed use of ICT acts as a strong catalyst, especially when the students are comfortable with use of computers and naturally accept the assistance provided by the software. Software libraries provided a larger set of functions to choose from and students learn more by using rather that reading about them. However, attributing the changes only to openness and ICT may not be complete truth for better learning. The students' background, irrelevance feelings regarding quantitative subjects among students need to be considered along with PBL and openness to identify better learning.

REFERENCES

1. Asoodeh, M. H., Asoodeh, M. B., & Zarepour, M. (2012). The impact of student-centered learning on academic achievement and social skills. Procedia-Social and Behavioral Sciences, 46, 560-564.
2. Chen, Z. (2002). Application of Contemporary Education Strategies to the Teaching of Operations Research.
3. Cochran, J. J. (2009). Pedagogy in Operations Research: Where has the discipline been, where is it now and where should it go? *ORiON: The Journal of ORSSA*, *25*(2).
4. Gijbels, D., Van de Watering, G., Dochy, F., & Van den Bossche, P. (2005). The relationship between students' approaches to learning and the assessment of learning outcomes. *European journal of psychology of education*, *20*(4), 327-341.
5. Hein, George E. (1975) Humanistic and Open Education: Comparison and Contrast, Journal of Education, Aug75, Vol. 157 Issue 3, p27, 12p
6. Joerding, W. (2010). Teaching and learning with individually unique exercises. *The Journal of Economic Education*, *41*(2), 125-135.
7. Kao, C., Yeh, Q. J., & Tsai, Y. C. (1997). Teaching undergraduate operations research in some of the business schools in Asia. *Interfaces*, *27*(5), 93-103.
8. Kuh, G. D., & Hu, S. (2001). The relationships between computer and information technology use, selected learning and personal development outcomes, and other college experiences. *Journal of College Student Development*, *42*(3), 217-232.
9. *Levine D. M., Stephen D, Krehbiel T. C, and Berenson M, (2006) Statistics for Managers, Pub: Dorling Kindersley (India) Pvt Ltd (for Pearson Education, Inc.)*
10. Macklin, A. S. (2008). A PBL approach for teaching complex information and communication technology (ICT) skills in higher education. *Community & Junior College Libraries*, *14*(4), 233-249.
11. Morris, H. (2009, March). Linking of ICT to enhance education. In *Southeastcon, 2009. SOUTHEASTCON'09. IEEE* (pp. 60-65). IEEE
12. Noor-Ul-Amin, S. (2013). An effective use of ICT for education and learning by drawing on worldwide knowledge, research, and experience: ICT as a change agent for education. *Scholarly Journal of Education*, *2*(4), 38-45.
13. Papejoij Micheal W., (2008) Impact of Learning for Mid Career Adult Graduate Students in Public Administration and Public Health – A modified approach to teaching of Statistics. Public Administration Times, Oct 2008
14. *Render B, Stair R. M. Jr. and Hanna M. E. (2005), Quantitative Analysis for Management, Pearson Edu., (Singapore), Pvt Ltd.*
15. *Taha H. A. (2002, 7th edition): Operations Research, Pearson Education*
16. Vaičiūnienė, V. (2012). Dynamics of students' performance and attitudes to the use of ict in higher education. *Profesinis rengimas: tyrimai ir realijos*, (23), 160-168.
17. Zahariev, P., Bencheva, N., Hristov, G., & Ruseva, Y. (2013, May). ICT convergence challenges in education and their impact on both instructors and students. In *EAEEIE Annual Conference (EAEEIE), 2013 Proceedings of the 24th* (pp. 193-197). IEEE

RISK ANALYSIS OF EXCESS AND OBSOLETE INVENTORY IN A COMPUTER COMPANY: A CASE STUDY

KUSHAL NAGENDRA
STUDENT
SYMBIOSIS INTERNATIONAL UNIVERSITY
PUNE

DR. ASHA NAGENDRA
PROFESSOR
SYMBIOSIS INTERNATIONAL UNIVERSITY
PUNE

ABSTRACT

Risk Analysis is a systematic process of evaluating the potential risks that may be involved in a projected activity or undertaking. It is applied to projects, information technology, security issues and any action where risks may be analyzed on a quantitative and qualitative basis. Risk analysis is a component of risk management. This paper focuses on the risk analysis faced by a major computer company X. At X International Services, risk analysis was to be conducted because old inventory in terms of licenses was piling up, thus leading to blockage of funds. With Windows 10 being launched soon, company X wished to analyze the quantity of old inventory of licenses piled up, the cost of the licenses and the type of licenses. Besides, the company needed to assess the quantum of financial loss when some of these licenses would become excess and obsolete. Primary data regarding the inventory was obtained from the company itself. This data was massaged and run through a pivot table to generate a pivot chart. It was found that company X risks a write off of $20M against inventory greater than 30 days. It further revealed that inventory greater than 365 days costs $6.2M. It was concluded that most of the inventory is under the Work in Progress (WIP) category. Besides, following a robust return process for aging licenses and establishing inventory control mechanism would help the company in minimizing the inventory. Lastly, a piece part level forecast accuracy would also drastically reduce the inventory.*

KEYWORDS
excess and obsolete inventory, company X, risk analysis.

INTRODUCTION

Risk Analysis is a systematic process of evaluating the potential risks that may be involved in a projected activity or undertaking. Risk analysis is the review of the risks associated with a particular event or action. It is applied to projects, information technology, security issues and any action where risks may be analyzed on a quantitative and qualitative basis. Risk analysis is a component of risk management.

Risks are part of every IT project and business endeavour. As such, risk analysis should occur on a recurring basis and be updated to accommodate new potential threats. Strategic risk analysis minimizes future risk probability and damage. The risk management process involves a few key steps. First, potential threats are identified. For example, risks are associated with individuals using a computer either incorrectly or inappropriately, which creates security risks. Risks are also related to projects that are not completed in a timely manner, resulting in significant costs. Quantitative and/or qualitative risk analysis is applied to study identified risks. Quantitative risk analysis measures expected risk probability to forecast estimated financial losses from potential risks. Qualitative risk analysis does not use numbers but reviews threats, determines and establishes risk mitigation methods and solutions.

Why does obsolete inventory buildup? The root cause is uncertainty in both supply and demand. If one reduces the uncertainty, one can diminish one's exposure to obsolescence. Three tools can accomplish this: 1) sales and operations planning; 2) auto-replenishment systems; and 3) "ramp-up/ramp-down" discipline. If one is experiencing growth in obsolete inventory, missed forecasts, reduced earnings and increased backlogs, consider taking major action through sales and operations planning (S&OP). One of the key traps associated with demand planning is the optimistic view that new products or promotions will generate high sales. Many a company executive has been stranded with major amounts of excess inventory after ordering surplus materials/parts in anticipation of demand.

PROBLEM STATEMENT

At company X, risk analysis was to be conducted because old inventory in terms of licenses was piling up, thus leading to blockage of funds. With Windows 10 being launched in June 2015, Company X wished to analyze the quantity of old inventory of license which was piled up, the cost of the licenses and the type of licenses. Besides, it needed to assess the quantum of financial loss when some of these licenses would become excess and obsolete.

OBJECTIVE OF THE STUDY

To conduct an excess and obsolete risk analysis to assess the aging of licenses.

LIMITATIONS

The above project was limited to one company only, namely, company X. Other similar companies can be studied. Further, the study was limited to Windows Licenses Purchase and Inventory details carried out in the first quarter of the year. Other studies can be carried out on the hardware purchases such as CPUs, graphic cards and other hardware.

REVIEW OF LITERATURE

MacDiarmid (2003) notes that **risk analysis** must begin with risk identification. The potential adverse outcomes must be listed at the outset of the risk analysis process, and it is a good idea to include the marginal entries on the list. But how far does one go in carrying out a risk analysis? The answer is to go far enough to provide the decision-maker with as much assistance as possible, in the time and with the resources available. To accomplish this goal, risk analysis requires skillful judgement as well as scientific rigour. As MacDiarmid states, it is important to distinguish between risk assessment, risk management and risk communication. Risk analysis comprises all three of these elements. Risk management is the process of identifying and implementing measures which can be applied to reduce risk to an acceptable level and documenting the final import decision. Risk communication is the process by which the results of risk assessment and risk management are communicated to decision-makers and the public. Adequate risk communication is essential in explaining official policies to stakeholders. Stakeholders may be interested in the details of the risk analysis, as well as the overall results. Often the analysis process leads to important insights motivating the choice of a risk management alternative. When stakeholders understand these insights, they are better able to understand why the decision taken was a good one - even if it may involve some additional cost or risk to their interests.

Porras and Decker (2007) evaluated the excess and obsolete inventory in a mass production company. They reported that the phenomenon of slow-moving stock in case of parts for machinery and equipment, to some extent, allows one to assess the level of excess and obsolete inventory which mainly result from the necessity to maintain security stock. The ranges established for observing the movement of a storage item are established individually depending on the needs of an enterprise. An important issue is the possession of machinery stock since, depending on a type and age of the applied production equipment, it is possible to observe diverse movements of stocks. A common division of inventory analysis by the time when spare parts take up storage space in a warehouse, expressed in the number of days, distinguishes the following periods:

- 1 - 180 days,
- 181 - 360 days,
- 361 - 720 days,
- 721 - 1080 days,
- more than 1080 days.

Excessively gathered stocks consist of both obsolete spare parts, which currently are not used in the production activity, and the ones which are excessively gathered, i.e. not adjusted to the level of use. A high level of spare parts inventory maintained in enterprises is frequently not justified economically since spare parts stocks corrode, date or get damaged but, most of all, freeze capital. They calculated that the main reasons of the occurrence of excess and obsolete inventory result from: – technological changes in technical equipment (27%), – changes in the production structure (42%), – ordering parts at the level exceeding the actual needs for providing service to technical objects (23%), – errors and mistakes in orders, resulting from differences in technical and construction parameters (8%). Excess and obsolete inventory gathered in an enterprise ought to be sold, scrapped or used as soon as possible. The appearance of this type of spare parts inventory generates unnecessary costs and freezes capital. It is assumed that for these parts there are no economic and technical grounds for the purposefulness of their storage in a warehouse.

Excess and obsolete spare parts inventory constitutes one of the key problems of production management. On the one hand, the enterprise, while aiming at the maintenance of continuity of production, must provide spare parts inventory for machinery, and, on the other, slow moving stock goods may lose usability and value.

Martin (2011) says that **excess and obsolete inventory write-offs** are chronic supply chain problems costing businesses billions of dollars each year. Unfortunately, improvement projects that are deployed to eliminate these problems often have a short-term focus. In other words, the current levels of excess and obsolete inventory are usually addressed, but not the root causes of the problem. Often such inventory is reduced by selling it below standard cost or donating it to charitable organizations. He reports that Lean Six Sigma methods have been shown to be very effective in finding and eliminating root causes, and thus preventing arbitrary year-end reductions in inventory investment.

HIGHER- AND LOWER-LEVEL ROOT CAUSES

An analysis of excess and obsolete inventory often shows that its major root causes are associated with long lead times, poor forecasting accuracy, quality problems or design obsolescence. However, according to Martin, these higher-level causes can be successively broken down into lower-level root causes as shown in the figure below.

FIGURE 1: HIGHER- AND LOWER-LEVEL ROOT CAUSES

As the figure suggests, from an inventory investment perspective, a long lead time may be caused, in part, by large lot sizes. The actual reasons for large lot sizes would have to be investigated by a Lean Six Sigma improvement team. The root causes of long lead times also could be due to complicated processes having numerous rework loops and non-value-adding operations as well as scheduling problems and/or late deliveries. Martin goes on to say that the second major cause of excess and obsolete inventory is poor demand management practices. Some lower-level root causes may include inaccurate historical demand data, a poor forecasting modeling methodology or other issues such as overly optimistic sales projections.

Pay (2010) reports that **obsolete inventory** is one of the largest components of inventory cost and often is larger and more costly than executives are willing to admit. Many suggest optimistically (and often sheepishly) that there is no such thing as obsolete inventory because it will sell someday. He has developed a new three-letter acronym for this to go along with JIT (Just in Time), RAW, WIP (Work in Progres) and FGI. It is "GSM" for "Glacially Slow Moving"! Studies related to inventory cost and inventory reduction prove that obsolete inventory does in fact exist, along with the warehouses, containers and trailers to hold it. Most companies are busy searching for ways to return, sell, give or throw away obsolete inventory, but the important question is not how to get rid of it, but how to avoid it in the first place.

RESEARCH METHODOLOGY

The research was conducted in two phases. The **first phase** included study of research papers and industry white papers to understand the risks associated with excess and obsolete inventory in general. The **second phase** was based on actually identifying the risk analysis of excess and obsolete inventory at the company. The data was provided by the company. It was massaged and analysed to generate the desired results.

Data regarding the aging of the licenses was given by the company in two parts. The first set of data consisted of all the information but it was not classified according to the age of the inventory. The second set of data had the aging details in it. However, it only consisted of data of age 31 days and above. To get the inventory aged between 0 to 30 days, the two data sets had to be compared.

Finally, the resultant data was put through a pivot table and a pivot chart was generated.

RESULTS

FIGURE 2: QUANTITY AND COST OF LICENSES CATEGORIZED AGE WISE

(Short forms used are types of inventory identification given by the company)

Inventory Bucket	PRE_PROD	RAW	TO_RETURN	WIP	Grand Total
Inventory (K Units)	270	152	83	484	990
Royalty Cost (K$)	$18,839	$9,438	$695	$36,487	$65,459

License Group	BING	CHINA	PRO	SST	STF	WIN-DM	WIN-EM	Total
Inventory (K Units)	58	114	476	27	58	184	73	990
Royalty Cost (K$)	$348	$ -	$47,940	$977	$70	$12,486	$3,637	$65,459

ANALYSIS

Average daily Digital Product Key (DPK) Inventory is ~**1 Million** units, adding to ~**$65 Million** in cost, out of which inventory <30 days is ~**$45 Million** in cost and inventory >31 days is ~**$20 Million** in cost. Hence it was seen that the company risked a write-off of ~**$20 Million** against inventory.

DISCUSSION

The above table shows the quantity and the cost of the licenses categorized into different age brackets. It can be seen that inventory greater than 30 days is $20 Million in cost. It can also be noted that the inventory greater than 365 days is $6.2 Million in cost. From the first table, it can be seen most of the inventory is under the Work in Progress (WIP) category.

CONCLUSIONS & RECOMMENDATIONS

It can be concluded that company X risks a write off of $ 20M against inventory greater than 30 days. It further revealed that inventory greater than 365 days' costs $6.2 Million. Hence, it can be concluded that most of the inventory is under the WIP category. Moving the aging licenses from WIP Inventory to RAW inventory would increase the pool of available licenses thereby reducing further purchases.

Following a robust return process for aging licenses and establishing inventory control mechanism would help the company in minimizing the inventory. Lastly, a piece part level forecast accuracy would also drastically reduce the inventory.

REFERENCES

1. Fischhoff, B. (1994). "What forecasts (seem to) mean" *International Journal of Forecasting* 10:387-403.
2. Huber, O., Wider, R. and Huber, O. (1997) "Active Information Search and Complete Information Presentation in Naturalistic Risky Decision Tasks" *Acta Psychologica* 95:15- 29.
3. Kunreuther, H. Novemsky, N. and Kahneman, D (2001) "Making Low Probabilities Useful" *Journal of Risk and Uncertainty* 23: 103-120.
4. Martin, James W. (2011). Lean Six Sigma to Reduce Excess and Obsolete Inventory. http://www.isixsigma.com/operations/supply-chain/lean-six-sigma-reduce-excess-and-obsolete-inventory. Accessed on 8th June 2015.
5. McDiarmid S.C. (2003). - Risk analysis and the importation of animals and animal products. In Risk analysis, animal health and trade (R.S. Morley, ed.). Rev. sci. tech. Off. int. Epiz., 12 (4),1093-1107.
6. Pay Rick, President, The R Pay Company (2010). Avoiding Obsolete Inventory- Possession is 9/10ths of the Problem –LLC May 18 2010.
7. Porras E., Dekker R., (2007). The Evaluation of Excess and Obsolete Inventory in a Mass Production Company – A Case Study. *European Journal of Operational Research* 2007, p.2

A STUDY ON PURCHASE BEHAVIOR OF CONSUMERS TOWARDS E-RETAILING

DR. G. PRAKASH RAJ
ASST. PROFESSOR
SACRED HEART COLLEGE
TIRUPATTUR

DR. A. PAPPU RAJAN
ASST. PROFESSOR
ST. JOSEPH'S INSTITUTE OF MANAGEMENT
ST. JOSEPH'S COLLEGE (AUTONOMOUS)
TIRUCHIRAPPALLI

DR. J. MICHAEL SAMMANASU
ASSOCIATE PROFESSOR
ST. JOSEPH'S INSTITUTE OF MANAGEMENT
ST. JOSEPH'S COLLEGE (AUTONOMOUS)
TIRUCHIRAPPALLI

ABSTRACT

Consumer behavior is the study of individuals, groups, or organizations and the processes they use to select, secure, and dispose of products, services, experiences, or ideas to satisfy needs and the impacts that these processes have on the consumer and society. It blends elements from psychology, sociology, social anthropology and economics. It attempts to understand the decision making process of buyers, both individually and groups. It studies characteristics of individual consumers such as demographics and behavioral variables in an attempt to understand people's wants. In this paper the researchers examined the usefulness of analytical techniques and tools in analyzing the purchase behavior of online shoppers, influencing factors for purchase, and the expectations of consumers purchasing from different e-tailing websites.

KEYWORDS
internet usage, online shopping, purchase behaviour, e-retailing.

1.0 INTRODUCTION

E-commerce in India has come a long way from a timid beginning in the years 1999-2000 to a period where one can sell and find all sorts of stuff from a high end product to a meager peanut online. Computers and the Internet have completely changed the way one handles day-to-day transactions; online shopping is one of them. The Internet has brought about sweeping changes in the purchasing habits of the people. The number of users logging on to the Internet is growing by leaps and bounds. The number of Indians who are online has touched 240 million as revealed by a study undertaken across 32 emerging economies of the world in March 2015. This is 8.33% of the world population using internet making India the 3rd country with the largest number of internet users Online shopping has become the latest trend among shoppers. Indians are becoming more comfortable with e-commerce. The consumer's attitude has been evolving towards online purchases.

2.0 REVIEW OF LITERATURE

Jarvenpaa et al. [2000] tested a model of consumer attitude towards specific web base stores, in which perceptions of the store's reputation and size were assumed to affect consumer trust of the retailer.

In the research conducted by Vellido et al. [2000], nine factors associated with users' perception of online shopping were extracted. Among those factors the risk perception of users was demonstrated to be the main discriminator between people buying online and people not buying online.

Harun R Khan [2014], in this article titled as Digital India: Emerging challenges and Opportunities for the banking sector discussed the migration from cash to electronic payments. RBI conducted number of awareness programs to increase mobile banking users. The plan of digital India is to connect all the Gram Panchayat through broadband network by 2014.

James Taylor [2014], Predictive analytics is the use of data, statistical algorithms and machine-learning techniques to identify the likelihood of future outcomes based on historical data. Most modern organizations use predictive analytics to determine customer responses or purchases, as well as promote cross-sell opportunities. Predictive models help businesses attract, retain and grow the most profitable customers and maximize their marketing spending.

3.0 RESEARCH DESIGN

3.1 RESEARCH OBJECTIVE

1. To study the purchase behavior of consumer towards e-tailing

3.2 SPECIFIC OBJECTIVES

1. To find out the reasons behind customers preferring to purchase products online
2. To do a frequency analysis of the products purchased online
3. To identify the influencing factors for purchase
4. To find out the expectations of consumers purchasing from different e-tailing websites
5. To give suggestions on customer retention to online e-tailing sites.

3.3 RESEARCH FRAMEWORK

In the first phase of the study different factors influencing the online purchase behavior were identified by studying the existing models of consumer's purchase behavior. In the second phase of the study a model was proposed using the predicative analysis tools enlisting various factors that lead to online shopping. The data was collected only through Questionnaires. The questionnaires were administered both Paper-and-pencil and Computer-assisted web interviewing.

3.4 DATA COLLECTION METHOD

Primary data collection method is used to collect data. The questionnaire was used mainly to test the model proposed for consumer perception towards online shopping. Likert five point scales were used for ranking the perceptions of the respondents in all Questions. The data collection was done over a period of 8 weeks. The questionnaires were administered both personally and through emails.

3.5 SAMPLING

The sample size for the study is 200 respondents and the method of sampling is Non-Probability Sampling.

3.6 TOOLS USED

The data collected were analyzed using MS EXCEL 2013 and SPSS Version 21.0 The tests used for analysis are Cross tabulation analysis and Friedman's test.

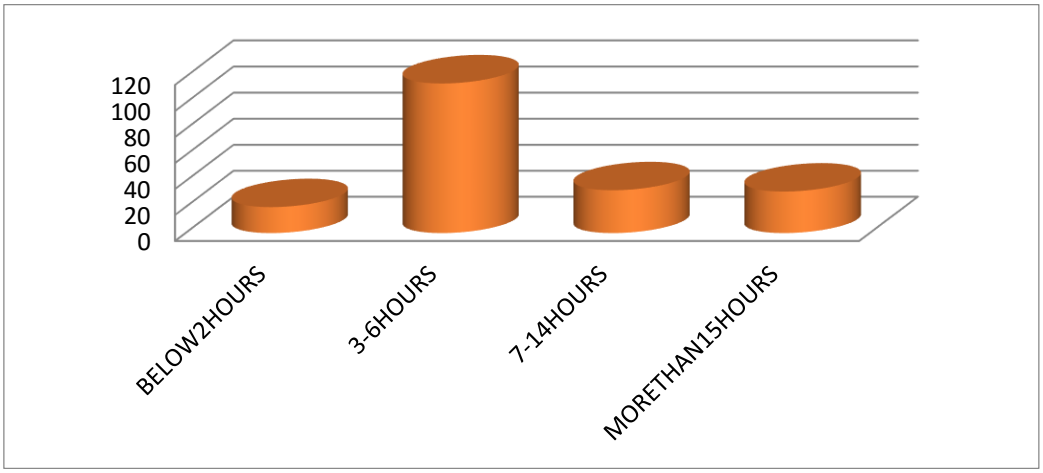
4.0 RESEARCH DATA ANALYSIS AND INTERPRETATION

TABLE 1.0: INTERNET PROFICIENCY OF THE RESPONDENTS

Internet Proficiency	Frequency	Percent
Novice	90	45
Intermediate	93	46
Advanced	17	9
Total	200	100

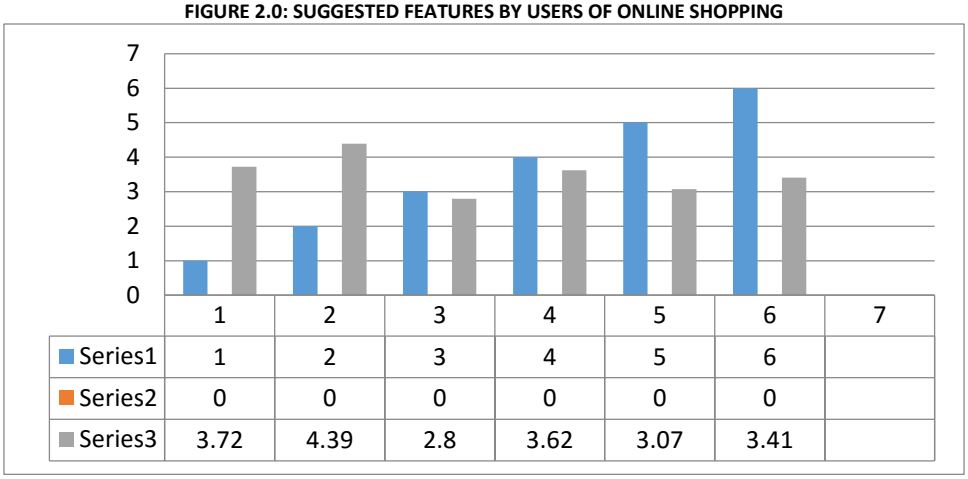
The Table 1.0 shows the users internet proficiency. The researcher comes to know that 45 percent of the respondents (90 respondents) are novice in using the internet, 46 percent of the respondents (93 respondents) are intermediate in using internet and 9 percent of the respondents (17 respondents) are advanced in using the internet. Therefore, most of the respondents are in the intermediate level in using the internet.

FIGURE 1.0: TIME SPEND FOR SURFING ON NET



The Figure 1.0 shows the time spent by the respondents on web in a week. The researcher comes to know that 9.8% the respondents (20 respondents) spend less than 2 hours on usage of internet per day, 56.4% of the respondents (115 respondents) spend their time in using of internet for 3-6 hours per day, 16.2% of the respondents (33 respondents) spend 7-14 hours using the internet per day, where 15.2% of the respondents (32 respondents) spend more than 15 hours using the internet per day.

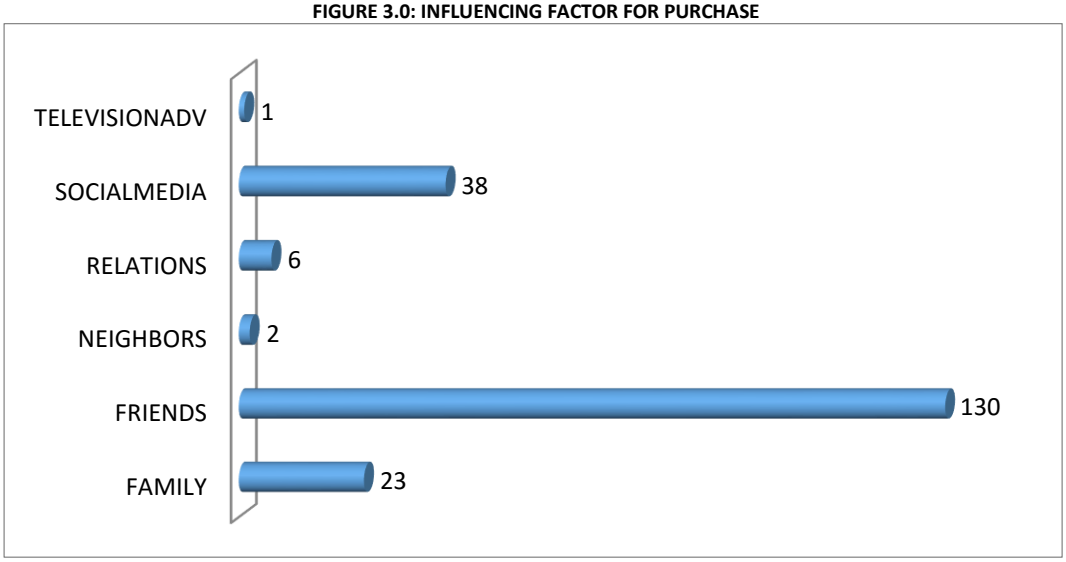
FIGURE 2.0: SUGGESTED FEATURES BY USERS OF ONLINE SHOPPING



	1	2	3	4	5	6	7
Series1	1	2	3	4	5	6	
Series2	0	0	0	0	0	0	
Series3	3.72	4.39	2.8	3.62	3.07	3.41	

The figure 2.0 shows the results of Friedman test for suggested features by users of online shopping. From the Figure 2.0 the researcher comes to know that the Integration of social networking with the online shopping websites is the feature that will increase the business of e-tailing sites (4.39%). The second prominent suggestion was the provision of multiple payment gateways (3.72%). This is because of the fact that some payment gateways were not accessing 3.62% users have suggested that better privacy and secure checkout options should be offered to the shoppers while shopping online. 3.41 % of the respondents have suggested for the customer friendly sites for online shopping, because the users were difficult to search the categories in some online sites. 3.07% of the respondents were suggested that design should be improved so that the online sites will attract the users while surfing, and only 2.80% of the respondents have suggested more credibility for online shopping users.

FIGURE 3.0: INFLUENCING FACTOR FOR PURCHASE



When it comes to influencing factor the above Figure 3.0 shows that 11.3% of the respondents says that family influences them to purchase, 63.7% says that friends influence them, 1% says that neighbor, 2.9% says that relations, 18.6% says that social media influences them, 0.5% says that they get influenced by television advertisements.

4.1 MAJOR FINDINGS

- Internet plays a critical role in determining the choices of people in today's scenario. Almost all people except very few access the internet in order to know about the products which they want.
- People use internet for the basic purpose and at the least they use internet to solve some complicated issues. People use internet to cope with their basic and next level needs
- The usage of the internet has become a part in the day to day life of individuals and as day posses internet attracts more users.
- A part from spending time in day to day activities individuals also spend notable time in internet by going online
- Internet have various purpose and reasons to deal with normally individuals use internet for certain purposes like getting information about a product surfing, social media, job searching, internet shopping
- Number of people preferring internet shopping to traditional shopping is increasing.
- Among the factors restricting the internet users to do online shopping, fear of losing money, lack of awareness of the benefits are identified as the most important ones.
- Online shopping is used by individuals for personal purpose rather than business and other purposes
- Friends, family and social media peer groups were found to influence an individual in choosing the method of shopping. Friends and Family are considered to be the most powerful group that influences the choice of an individual regarding the online or traditional shopping followed by social media peer groups
- Laptops and mobile phones are considered to be the most preferred medium for online purchasing because of the comfort and security they provided during the transactions.
- When it comes to online shopping it was found that people tends to purchase certain types of products more through online e-tailing services. The products that are frequently purchased online are apparels, books, mobiles, bags, belts, wallets, watches, and cameras. Other products like laptops, tablets, kitchen items, sun glasses, are also purchased through online but not as frequently.
- The most expected feature from the shopper's point of view is the social media integration and the provision of multiple payment gateways.
- When it comes to payment in the online shopping through e-tailing websites, shoppers mostly prefer cash on delivery. Debit cards and Credit cards have been only the secondary options and only few shoppers prefer bank transfers and third party transfers. They prefer more cash on delivery in order to minimize the risk.
- Many of the online shoppers agree that shopping online saves their time. They feel that online shopping enables us to shop during their convenient times. Availability of different payment options is another advantage pointed out by the respondents. Most of the shoppers feel that the delivery of products takes more time and they prefer online if only the price in online shopping is lesser than the offline shopping.
- Waiting time for receiving the ordered product, risk in getting the correct product for which the shopper pays for, difficulty in returning the faulty product, privacy of bank details are some factors that the online shoppers use in deciding their preferred e-tailing website.

5.0 SUGGESTIONS

Today traditional shopping is at the downfall. Brick and motor stores are seeing a hit. People are moving towards online shopping. To keep up the momentum the e-tailing websites should concentrate on the attributes like user friendliness, multiple and easy payment gateways, and faster delivery return arrangements and availabilities of products so that they will be preferred. Today online shopping service is getting popular day by day and it is getting the attraction of the customers. As the customers' preferences are fast changing it is suggested for the traditional shops to have online presence also in addition to the shops they already have. This is important if they don't want to be completely overtaken. The E-tailing websites may make their services more personalized by developing their own applications across various platforms to make the shopping experience more comfortable. The E-tailing service providers should continuously innovate to retain their customers. They should integrate the shopping experience with the social media and provide multiple payment gateways for their customers.

6.0 CONCLUSION

It is believed that electronic commerce will become a huge industry in the coming years and online shopping is now becoming a significant part of the consumers' daily life to meet their never ending requirements in a convenient way.

More consumers are indulging into Internet shopping as shown by the various research studies because of the value proposition it offers to a customer such as convenience, 24x7 shopping, doorstop delivery, broad product selection and the ever-expanding range of unique and unusual gift ideas as well as increased consumer confidence in shopping on the internet. The main motivating factor seen during the research was the convenience and customer service which drives the people to online shopping. In the coming days the Government should take efforts to increase the broadband penetration in the country which will take the online shopping to the next level.

REFERENCES

1. Amin.S (2009). Why do so many people shop online? Viewed on 1st November, 2015 http://www.articlesbase.com/print/1335596, Articlebase.com.

2. Anonymous (2009). How to shop online more safely. View on 1st, October, 2015. http://www.microsoft.com/ protect/fraud/finances/shopping_us.aspx, Microsoft.com.
3. Dahiya Richa, (2012). Impact of demographics factors of Consumers on Online shopping behavior: A Study of Consumers in India. International Journal of Engineering and Management Sciences, Vol3(1). pp.43-52.
4. Forouhandeh, B., Nejatian, H. and Ramanathan.k (2011). The online shopping adoption: barriers and advantages, In Proceeding of the 2nd International Conference on Business and Economic Research, pp.2149-2171.
5. IBM Software Business Analytics (2010). White Paper Titled The Future of Market. Views on 11/10/2015 from http://www.ibm.com
6. Jayawardhena, C., Wright, L. T. and Dennis, C. (2013). Consumers Online: Intentions, Orientations and Segmentation. International Journal of Retail and Distribution Management, 35(6), pp. 515 -599.
7. Kerr, M. M., & Nelson, C. M. (2010). Strategies for addressing behavior problems in the classroom (6th ed.). Boston, MA. Pearson.
8. Kothari. C. R (2010). Research Methodology Methods and Techniques. Second Edition. New Age International Publishers.
9. Lim, H. and Dubinsky, A.J., (2004). Consumers' perceptions of e-shopping characteristics: An expectancy-value approach. The Journal of Services Marketing, Vol. 18, Issue No. 6, pp. 500-513.
10. Nielsen Report (2010). Global Trends in Online Shopping, Retrieved on April 20, 2013 from http://hk.nielsen.com/documents/Q12010OnlineShop-pingTrendsReport.pdf.
11. Perotti, V. Widrick, S. (2005). Attitude and age differences in online buying. International Journal of Retail and Distribution Management, Vol. 33, No. 2/3, pp. 122-132.
12. Peterson, R. A., Bal Subramanian, S., & Bronnenberg,B. J. (1997).Exploring the implications of the Internet for consumer marketing. Journal of Academy of Marketing Science, Vol. 24, No. 4, pp. 329-346.
13. Pappu Rajan.A (2013). A study on security threat awareness among students using social networking by applying data mining techniques. International journal of research in Commerce, IT & Management, Vol. 3, Issue 9, ISSN: 2231-5756.
14. Pappu Rajan.A, Dr.V.Kannan (2016).A Study on Utility of Mobile Banking Technology in Tiruchirappalli City, Tamil Nadu. International Journal of Applied Research.Vol.2(1). Pp.30-33.
15. Pappu Rajan.A. Micheal John (2015). Job Satisfaction and its Influence in the Work Environment. International Journal of Management Research Review. Vol.5.Issue 7.No.7/554-562.
16. Pappu Rajan.A, G.Prakash Raj, Rosario Vasantha Kumar.P.J. (2013) A study on application of data and web mining techniques to enrich user experience in libraries and on line book stores, International Journal of Research in Computer Application & Management, ISSN 2231-1009, Volume No. 3, Issue No. 8.
17. Retail Store (2012), Times of India. Retrieved on 10-10-2015 from http://articles.timesofindia.indiatimes.
18. Sanjeev Kumar, Savitha Maana (2014). Status and Scope of Online Shopping: An Interview Analysis through Literature Review. International Journal of Advance Research in Computer Science and Management Studies. Vol.2. Issue 12, pp. 100-108.
19. Sherry, L. (2008). Make safety first online. Consumer Action News. Retrieved on December 10,2008, from http://www.consumeraction.org/news/articles/in-ternet_commerceissue_spring_2008/#Topic_02
20. The Tech Faq, (2008). Top reasons why people shop online. Viewed on 10-09-2014 from http://www.thetechfaq.com

TRAINING FOR SKILL UP-GRADATION IN SELECTED IT ORGANIZATIONS: A SAMPLE SURVEY

S. S. K. SASTRY AKELLA
RESEARCH SCHOLAR, JNIAS-JNTUH, HYDERABAD; &
DY. GENERAL MANAGER (RETD.)
CMC LTD.
HYDERABAD

DR. K. VENKETESWARA RAO
ASSOCIATE PROFESSOR
DEPARTMENT OF OPERATIONS & IT
IBS
HYDERABAD

ABSTRACT

This paper is an attempt to study the current status of skill up-gradation in Indian IT (Information Technology) industry. The objective of the study is to identify the level of penetration of skill up-gradation activities and their shortcomings. The paper will suggest suitable strategies and focus areas for IT managements to improve skill level of employees. The study is conducted by means of online survey. The study is conducted in three IT organisations operating in Hyderabad and Secunderabad. Some of the responses are collected through social networking sites from few other IT organisations. The analysis is done using statistical averages. It has been observed that IT industry is focusing on formal training as well as certifications of its employees. The average number of training programs attended and certifications obtained is fairly good. But, it appears that all the employees are not uniformly trained or certified. They are considerable number of employees with very little training/certifications where as some employees are having fairly large number of trainings/certifications. Also, employees are allocating fairly large percentage of time for on the job learning. However, the study has not collected data on number of days employee has attended training programs and the nature of training programs attended. The managements are advised to make it compulsory to participate in training programs for all employees every year. The managements are advised to provide financial and training assistance to all employees for certification on relevant skills. The project managers are advised to plan for on the job learning during the effort and schedule finalization of the projects.

KEYWORDS
IT organizations, skill up gradation, training, certifications.

ABBREVIATIONS

CDAC	Center for Development of Advanced Computing (Govt. of India)
CMC	CMC ltd. (a TATA enterprise)
CTS	Cognizant Technology Solutions
HR	Human Resource
IBM	International Business Machines
IT	Information Technology
N	Frequency at Mode
JNIAS	Jawaharlal Nehru Institute of Advanced Studies
JNTU	Jawaharlal Nehru Technology University
MNC	Multi National Corporation
OTHERS	Represents IT companies of the participants. The IT Companies include: AISFM, AT & T global Business solutions, Excelian, GSS Infotech, Harsco India services ltd., Napier, Mphasis, CTS,TCS,IBM, UGH
TBSS	TATA Business Support Services Ltd. (A TATA enterprise)
TCS	TATA Consultancy Services Ltd.
UHG	United Health Group

1. INTRODUCTION

Information Technology (IT) industry is growing very fast in India. Computer science is still not a mature science and IT industry is evolving with time. This industry is dependent on highly skilled and motivated work force. There is a need to continuously train the work force to meet challenging customer requirements. Here is an attempt to study the focus on formal training by Indian IT industry. The paper will identify areas of improvement for skill building activity and suggest suitable strategy and policy changes.

The study is based on survey conducted in few IT organization employees. The focus is on formal training programs and certifications obtained. Also, the percentage of time for on the job training is collected. However, the survey does not cover nature of the topic and duration of formal training. The analysis is done using SOFA, a statistical tool. The statistical averages calculated are presented in Note 1 at the end of the paper.

The study clearly shows that IT industry has focus on formal training. There is evidence of formal training programs being organized by IT firms but there is no evidence that all the employees have time and opportunity to attend these training programs. Also employees need a good percentage of time for on the job training. It can be concluded that, there is focus on formal training, but special focus is required to cover all the employees. There is a need to study further whether on the job training is essential, if so is it planned by the project managers. The managements have to suitably modify Human Resource policies so that each employee will attend a certain minimum days of training and obtain certifications on regular basis on contemporary technologies.

2. REVIEW OF LITERATURE

Innovation and competitiveness are essential for growth of the enterprise. Skilled and capable employees are key for innovation. Enterprise competitiveness as well as regional competitiveness are impacted by enterprise training (Padilla Raman, 2007). Investments in human capital have positive impact on firm level productivity (Yang Chih-Hai, 2010). Local and small enterprises are more concerned about the need to acquire technology and be technologically updated (Ciravegna Luccano, 2001). The motivation levels of employees and employee retention are essential for any enterprise, more so in IT industry. It has been established that training investments improve motivation levels, increase employee retention and reduce attrition (Damaraju Sirisha, 2013, Katsimi Margarita, 2008).

Another important concern is even though qualified graduates are produced from the colleges, there is lack of requisite skill (Upadhya Carol 2007, Li Xiaoqing, 2011). Job obsolescence can be a major concern, if regular training is not provided to employees. Workers need to take more responsibility for management of

their learning (Guglielmino Paul J,1987). But, training provided by employers is portable across employers. Even in case of training financed by employers, the employees pay through reduced static wages. The training means a formal class room training. But, in industry as well as academy, active learning is gaining importance day by day. Facilitation and coaching rather than lecture are essential for motivating the students. Team based models of training and development appear to be encouraging organizational commitment, job satisfaction and co-worker satisfaction and thereby reducing attrition (Kennett Geraldine, 2013). It is recommended that 2-4 hours of training time is provided per week (Damaraju Sirisha, 2013). Small units have no system to ascertain training needs (M Srimanna-rayana, 2006). Majority of local entrepreneurs lack social ties with professional abroad. Even MNC directors have less means and incentives to establish linkages that foster technological learning (Ciravegna Luccano, 2001).

3. NEED/IMPORTANCE OF THE STUDY

The importance of training and skill building is well understood. But, how much of the effort by the managements in IT organizations is actually converted to actual skill building needs to be established. In view of the above it is proposed to study the skill building activity in Indian IT industry. The skill building activity is measured by the number of training programs attended and the number of certifications obtained by it's employees. Also, percentage of time for on the job learning by IT employees is studied.

4. OBJECTIVES OF THE STUDY

The objectives of this study are given below:

1. To access and inform IT companies the level of penetration of their skill building initiatives like formal training and certifications.
2. To suggest strategies and policy changes to Indian IT companies for improvement of skill up-gradation of IT employees.
3. To stress the importance of on the job learning to the managements for taking suitable actions.

5. HYPOTHESES

The literature clearly established that IT corporates have to focus on formal training to its employees to stay competitive in the business. Even fresh recruits need proper training to be productive and IT work force needs continuous training. Training not only improves productivity but also increases employee retention also. In order to test the effectiveness of training plans of Indian IT industry the following Hypotheses are proposed to be tested in this study.

Hypothesis 1: The Indian IT enterprises are providing regular training to employees.

Hypothesis 2: The training programs are covering all the employees.

Hypothesis 3: All the employees are having required certifications.

6. RESEARCH METHODOLOGY

The study is based on online survey conducted. Three IT organisations are selected including one government organization. One large sample is selected by random selection process from total population of the organization. The other two samples are from selected firms based on simple random sampling. The survey is administrated to all the members of the selected sample. The fourth sample is from social networking sites. Actual survey is conducted for employees with experience up-to 35 years of service. However, the data pertaining to employees with experience up-to 15 years only is considered. The main purpose is to focus on current generation and avoid extreme values which may affect statistical analysis.

The variables considered are Training, Recent training, Certifications, Recent certifications and On the job training. Training is the number of training programs attended during the entire duration of employment. Recent training is the number of formal training programs attended during the last one year of service. Similarly, certifications is the number of certifications obtained by each individual during his entire career. Recent certifications are the number of certifications obtained by the individual during the last one year. On the job training is the percentage of time an individual is utilizing for On the job learning during the project execution.

The data is analyzed to test the hypotheses by statistical analysis. Arithmetic averages have been computed to understand the per head quantities. The coefficient of skewness is computed to understand the uniformity of distribution. Also Pearson's constant is calculated to understand the relation between experience and training/certifications. The SOFA the Statistics Open for All an open source tool is used for analysis.

7. RESULTS & DISCUSSION

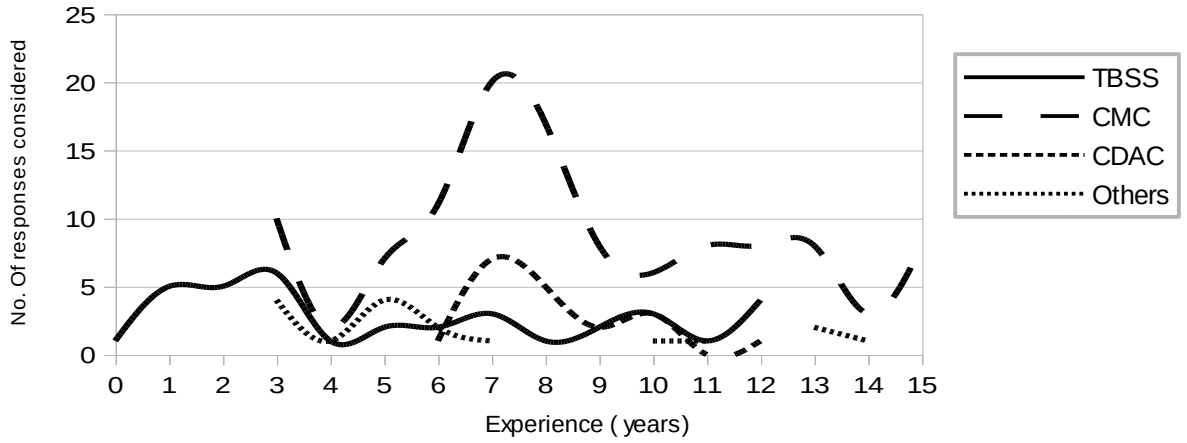
The sample is mainly from three companies. Two companies, CMC and TBSS belong to TATA group. One more sample is from Government of India center CDAC. The fourth sample from social networking sites is comprising of employees from companies like TCS, UHG, Napier, IBM, CTC etc. and is referred as OTHERS. As mentioned earlier, the abbreviations are given in Note 2 at the end of the paper. For CMC 400 employees are selected randomly and questionnaire was mailed. Only 144 have completely responded to the survey. From the TBSS technology support team, all the selected employees have been mailed the online survey. Out 50 employees contacted by mail 38 employees have completely responded to the survey. For CDAC, Hyderabad unit was selected and around 40 regular employees were mailed the survey. However, 21 employees have completely responded to the survey. Around 33 IT professionals have tried to respond to survey through social networking sites (Facebook / LinkedIn). Only 19 professionals have responded completely. The details are tabulated below Table Sample Sizes (Table 1)

TABLE 1: SAMPLE SIZES

Organization	Sample size	Response	Response considered
CMC	400	144	116
TBSS	50	38	37
CDAC	40	21	21
OTHERS	33	19	18

Out of the responses received, only responses from employees of experience up-to 15 years is considered for analysis. The focus is mainly on work force and middle management. Top management and Senior management is not considered to minimize the effect of extreme values on averages. The experience vs number of responses are plotted on line graph and presented below as Experience Graph (Graph 1):

GRAPH 1: EXPERIENCE GRAPH

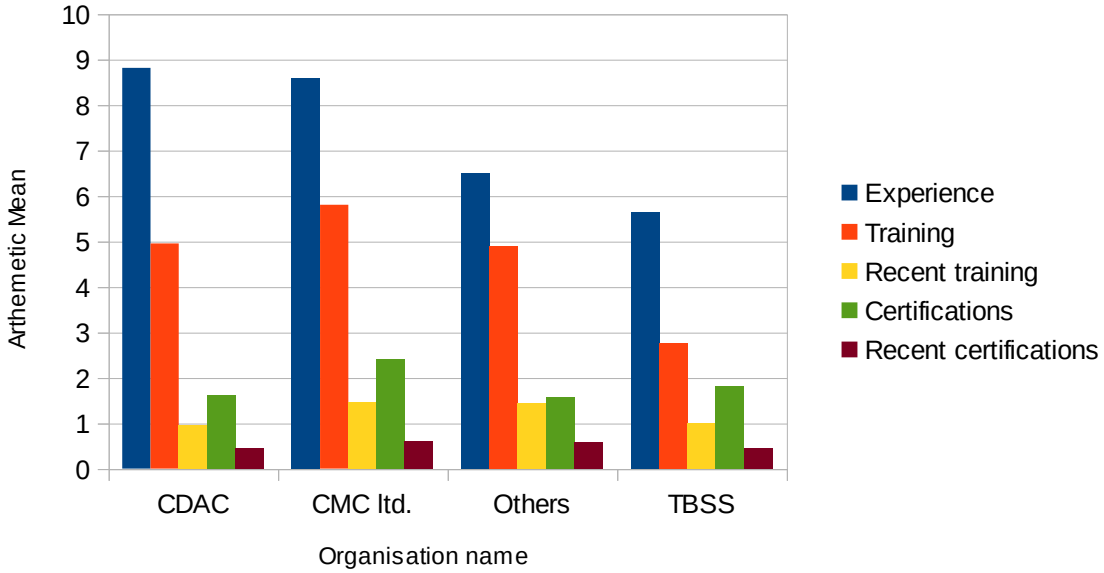


Each line represents one organization. X axis represents experience in years and Y axis represents number of responses considered for the given experience. Both CMC and CDAC have more respondents in 7-8 years' experience range. For TBSS peak is in 1-3 years range, but has representation across. The responses from social networking sites has representation across but there is no participation for 8-9 years' experience range.

The statistical averages are accepted measure of central tendency. The statistical averages are calculated and presented in the **Note 1**. The arithmetic mean is plotted as bar graph for each organization representing Experience, Training, Recent training, Certifications and Recent certifications.

The arithmetic means are shown below bar graph: Skill Building (Graph 2).

GRAPH 2: SKILL BUILDING

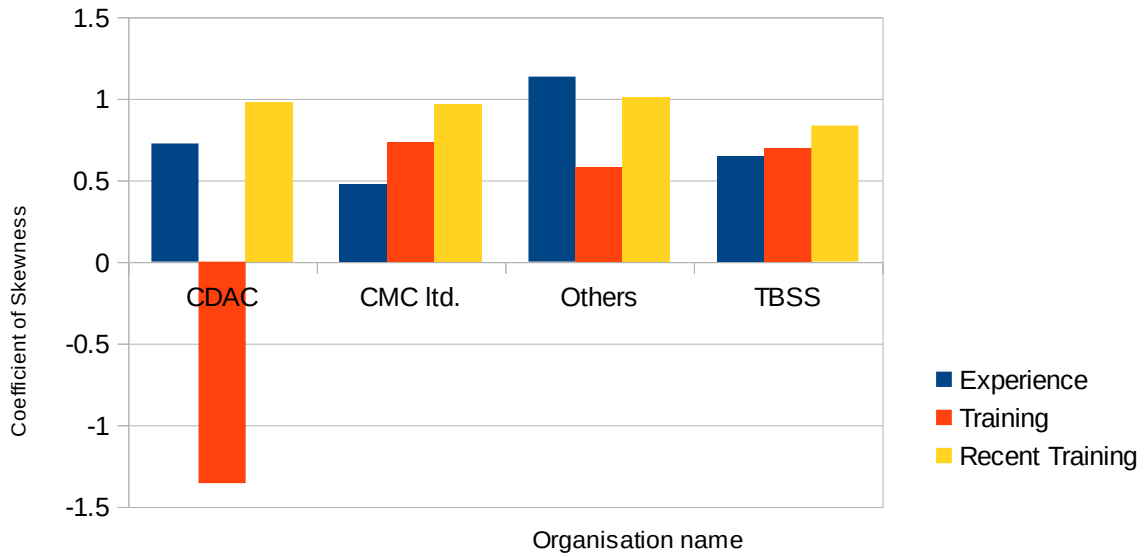


The graph indicates that average experience is 6-9 years and average training programs in the career are 3-6 programs. On the average each employee is attending at least one training program in every one and half to two years. However, the Recent training graph i.e. training program in last one year shows that each employee has attended at least one training program on average. Similarly, the employees have around one and half to two certifications on the average. The recent certifications show that average is half certificate meaning every alternate employee is certified in the last one year. We can safely conclude that the organization have focus on training their employees and employees are improving their skills by certifications.

With the above reasoning we conclude that Hypothesis 1: "The Indian IT enterprises are providing regular Training to employees" is true.

Then the important question is whether all the employees are covered. Are these training programs uniformly distributed among all employees or some employees are trained more and others are not getting an opportunity. The coefficient of skewness is a clear measure of dispersion. The sample covers wide range of experience 1-15 years, but the respondents are not uniformly distributed over the range. Coefficient of skewness gives distribution of the sample. If all the employees are given uniform opportunity, the coefficient of skewness for Training will be same as coefficient of skewness for Experience. The Training Skewness graph (Graph 3) below shows coefficient of skewness for Experience and Training for the selected organisations.

GRAPH 3: TRAINING SKEWNESS



The graph clearly shows that except for TBSS the coefficient of skewness for Experience and Training are not same and hence, the training imparted is not uniform for all the employees. The coefficient of skewness for Recent training is also not near to the coefficient of Experience.

Another important indicator of dispersion is frequency(N) at mode and range. Please refer to Note 1 again. The Mode for experience is 7 and N is 7 whereas average is 8.81 for CDAC. Similarly, for CMC Mode is 7 and N is 20 whereas average is 8.59. The difference between Mean and Mode is small (less than 2) and Range is 9 for CDAC and 12 for CMC. We can conclude dispersion of experience in selected sample is reasonably uniform and average is not very much affected by extreme values.

In case of training Mean is 4.95 and Mode is 10 with frequency of 4 (out of population of 19) for CDAC. For CMC Mean is 5.8 and Mode is 2 with frequency of 13 (out of population of 98). The range for CDAC is 10 and CMC Range is 36. Mode is far away from Mean in both cases. These numbers indicate that training is not uniformly distributed among the employees across various experience levels. Even Standard Deviation is high supporting above argument.

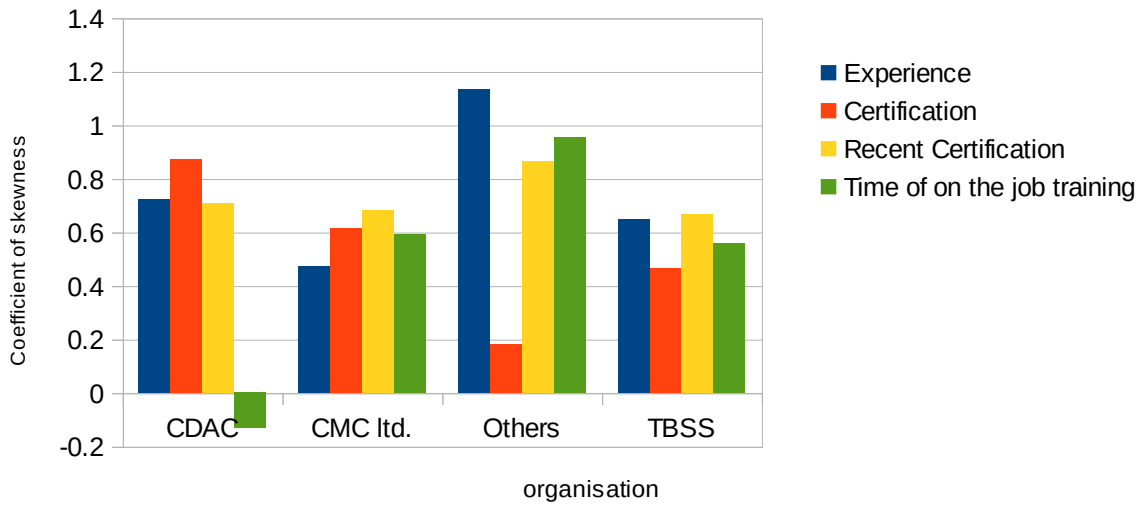
If we look at recent training values, Mean is 0.95 and Mode is 0 for N value of 8 out of 19 and Range of 3 for CDAC. For CMC the Mean is 1.47 Mode is 0 for N value of 30 out of 94 and Range 8. It clearly shows that more than 30% for employees are not trained in recent past. Another important observation are some employees are trained thrice in CDAC and 8 times in CMC in last one year. It clearly shows that organisations are providing opportunity to training all the employees in the recent past, but only few employees are enjoying the benefits of training and the benefit is not reaching all the employees. Even for TBSS the training Mean is 2.75 but Mode is 1 and range is 11. For OTHERS the Mean is 4.88 and Mode is not well defined (3&4) but range is 20.

The above discussion statistically shows that training is planned to cover all the employees but not reaching all the employees. Hence, the hypothesis 2 “The training programs are covering all the employees.” is not true. The training programs are not covering all the employees.

Certification is another important indicator of skill of employees. Organizations are said to be having focus on certifications. As per Note 1 we will examine the average certifications for the samples studied. The average number of certifications are 1.61 (CDAC) 2.4 (CMC) 1.81(TBSS) and 1.58(OTHERS). This clearly shows that average is more than one certificate for employee for all organisations. But, Mode is 0 for CDAC and OTHERS. Mode is 1 for CMC and TBSS. But ranges are 5(CDAC), 10(CMC), 7(TBSS) and 4(OTHERS). The average number of certifications in the recent past are 0.44(CDAC), 0.6(CMC), 0.69(TBSS) and 0.58(OTHERS). If the certifications are uniformly distributed one of every two employees are certified in recent past. But, the mode is Zero for all (CDAC, CMC, TBSS and OTHERS) with N as CDAC:11(18), CMC: 53(90), TBSS: 18(28), OTHERS: 6(12) indicating that 61% of CDAC 58% of CMC, 64% TBSS and 50% of OTHERS are not certified in the recent past. The ranges are 2(CDAC), 4(CMC), 2(TBSS) and 2(OTHERS). The above observations clearly show that organisations have focus on certifications and the focus increased in the recent past.

The coefficient skewness for certifications is shown in Certification Skewness (graph 4) graph below:

GRAPH 4: CERTIFICATION SKEWNESS



It can be observed that coefficient of skewness for experience and certification is not same in any one of the selected organizations. The observation is that employees are certified but certification is not distributed as per experience. The coefficient of skewness for Experience and Recent certification are very near for CDAC and TBSS. The near coefficient of skewness indicates that there is similarity in distribution of Experience and Recent certification. We can conclude that in CDAC and TBSS even experienced employees are focusing on certifications. But, For CMC and OTHERS the values of coefficient of skewness for Experience and recent certification are different. For CMC only time spent On the job training and Recent certifications are near, indicating similar distribution. We may conclude that employees are utilizing on the job learning to get certified.

It can be summarized that there is focus on certifications and average certification is good, but all the employees are not certified. Hence, the hypothesis 3 "All the employees are having required certifications." is not true.

In IT industry employees change organizations frequently. When we talk about experience vs total training or certifications, current organization may not have much of an impact. Hence, here is an attempt to understand the relation between experience and skill building by considering all the employees surveyed ignoring the current organization. In order to understand correlation between various factors Pearson's test of linear Correlation is calculated.

The results are tabulated below in the Pearson's Linear correlation (Table 2):

TABLE 2: PEARSON'S LINEAR CORRELATION

Parameter 1	Parameter 2	Two tailed p value	Pearson's R static	Degree of freedom	Slope	Intercept
Experience	Training	0.001	0.241	169	0.304	2.722
Experience	Recent Training	0.405	-0.066	161	-0.025	1.504
Experience	Certifications	0.014	0.191	162	0.108	1.286
Experience	Recent Certifications	0.969	0.003	151	0.001	0.55
Experience	On the job training	0.004	-0.206	197	1.403	37.935

The p value is small for Experience Vs. Training, Experience vs Certifications and Experience Vs. On the job training. Statistically there is leaner relationship between these set of variables. Recent training and recent certification have no relation with experience as p value is large. Logically also, all the employees need training and certification. Experience need not warrant less or more skills as IT Industry needs continuous skill building. Hence, recent certifications and training need not have correlation with experience. But, employees with longer experience is expected attend more training programs and get more certifications during their total career. The correlation between experience and training/certifications is expected to be very strong. But, from the above table person's r static is nearer to zero rather than one. Hence, we have to conclude that the correlation is very low. Across the organisations, IT industry is focusing on training and skill building, but all the employees are not equally trained or certified.

8. LIMITATION OF THE STUDY

The study has collected data on number of training programs attended. But, nature of training and duration of training are not collected. Hence, we do not have data to understand number of days' employees have attended formal training. Also, we do not know, whether the training programs are technical training programs and are with hands on experience. Another important observation is employees are utilizing considerable amount of time On the job training. We do not know whether the projects have allocated that much time for learning for each individual or whether employees are spending additional time in office due to necessity.

9. CONCLUSION AND RECOMMENDATIONS

The IT industry is based on evolving technology and fast growing. The employees need continuous training to be innovative and deliver the products/projects as per customer requirements. The fresh work force recruited is qualified but doesn't seem to be possessing required skills to be productive from day 1. Even the currently working and active employees need to be trained in latest technologies on regular basis. The IT industry has the need and has a focus to train the employees on regular basis. Also, today, IT industry is heavily depended on external certifications to assess the skill level of their employees on state of the art technologies.

The study has proved that IT industry has the focus on skill building and their employees are attending training programs. The employees are certified. But, it is also observed that all the employees are not given equal opportunity to attend the training programs. Some employees are attending more programs where as some are not attending any training program. Similarly, average certification is good but, all the employees are not certified. Another important observation is more employees are trained and certified in the recent past. It may be required to identify the reasons for unequal participation in skill building and take corrective action.

Based on the conclusions above the following recommendations are made.

1. IT companies to mandate all employees to attend at least one training program in a year.
2. IT companies to mandate certain number of training days for each employee per year.
3. IT companies to provide financial and training support to all employees on regular basis to take certification examinations.

Sample survey clearly established that IT companies have to further strengthen their HR policies to improve the skill up-gradation on regular basis.

10. SCOPE OF FURTHER RESEARCH

Further study can be done to asses relevance and quality of training imparted to the employees.

ACKNOWLEDGMENTS

I am sincerely grateful to Prof. Arif A Waqif, Honorary Director, SMAT-JNIAS-JNTU, Hyderabad, for his valuable guidance in finalising this paper. However, only the author is responsible for any remaining errors of omission or commission.

REFERENCES

1. Ciravegna Luccano, 2001, "FDI, Social Ties and Technological Learning in New Silicon Valley Clones. Evidence from the Costa Rican ICT Cluster", "***Journal of development studies***",Vol 47,No. 8, August 2011, pp 1178-1198
2. Damaraju Sirisha, 2013, "Learning and Development in Information Technology(IT) Companies", "***International Journal of Research in Commerce and Management"***, ISSN 0976-2183, Volume no 4(2013) Issue no 7(July) pp 121-122
3. Guglielmino Paul J, Guglielmino Lucy M., Long Huey B, 1987, "Self Directed Learning Readiness and Performance in the work place: Implications for Business, Industry and Higher Education", "***Higher Education***" Vol. 16, No. 3 (1987), pp 303-317
4. Katsimi Margarita, 2008, "Training, Job Security and Incentive Wages", "***Scottish Journal of Political Economy"***, Vol 55, No 1, February 2008, pp 67-78
5. Kennett Geraldine, 2013, "The Impact of Training practices on Individual, Organization and Industry Skill development", "***Australia Bulletin of Labour",*** Vol 39, No 1 2013, pp 112-135
6. Li Xiaoqing, Faulkner David, Yan Yanni, 2011, "The Strategic stages of China – UK educational alliances an empirical study", "***Asia Pacific Business Review***", vol 17, No. 1, January 2011, pp 7-24
7. M Srimannarayana, 2006, "Human resource management in Small Business", "***Indian Journal of Industrial Relation***", vol 41, No.3 (January 2006), pp 313-334
8. Padilla Raman, Juarez Miriam, 2007, "Effects of training on competitiveness in the manufacturing sector", ***"CEPAL Review 92"***, august 2007, pp 45-60
9. Upadhya Carol, 2007, "Employment, Exclusion and 'Merit' in the Indian IT industry", ***"Economic and political weekly"***, Vol no 42, No 20, May 19-25,2007, pp 1863-1868
10. Yang Chih-Hai, Lin Chun-Hung, Ma Daw, 2010, "R&D Human Capital Investment and Productivity: Firm level Evidence from China's Electronic Industry", "***China & World economy***/72-89", Vol 18 No. 5, 2010 pp72-89

ANNEXURE

NOTE 1

STATISTICAL AVERAGES

EXPERIENCE

Organization	Mean	Std. Deviation	Median	Mode with N	N	Range	Coefficient of skewness
CDAC	8.81	2.5	8	7(7)	21	9	0.724
CMC	8.59	3.36	8	7(20)	116	12	0.4732
OTHERS	6.5	3.97	5	3,5(4)	18	13	1.1335
TBSS	5.65	4.09	5	3(6)	37	14	0.6479

TRAINING

Organization	Mean	Std. Deviation	Median	Mode with N	N	Range	Coefficient of skewness
CDAC	4.950	3.72	5	10(4)	19	10	-1.3575
CMC	5.8	5.19	5	2(13)	98	36	0.7321
OTHERS	4.88	4.57	4	3,4(4)	16	20	0.5776
TBSS	2.75	2.51	2.5	1(7)	32	11	0.6972

RECENT TRAINING

Organization	Mean	Std. Deviation	Median	Mode with N	N	Range	Coefficient of skewness
CDAC	0.95	0.97	1.0	0(8)	19	3	0.9793
CMC	1.47	1.52	1	0(30)	94	8	0.9671
OTHERS	1.44	1.31	1	1.0,2.0(5)	16	5	1.0076
TBSS	1.0	1.2	1	0.0(12)	29	5	0.8333

CERTIFICATIONS

Organization	Mean	Std. Deviation	Median	Mode with N	N	Range	Coefficient of skewness
CDAC	1.61	1.85	1	0.0(7)	18	5	0.872
CMC	2.4	2.28	2	1.0(26)	97	10	0.614
OTHERS	1.58	1.31	1.5	1.0,2.0(3)	12	4	0.1832
TBSS	1.81	1.74	1	1.0(13)	31	7	0.4655

RECENT CERTIFICATIONS

Organization	Mean	Std. Deviation	Median	Mode with N	N	Range	Coefficient of skewness
CDAC	0.44	0.62	0	0.0(11)	18	2	0.7096
CMC	0.6	0.88	0	0.0(53)	90	4	0.6818
OTHERS	0.58	0.67	0.5	0.0(6)	12	2	0.8656
TBSS	0.46	0.69	0	0.0(18)	28	2	0.6666

ON THE JOB TRAINING

Organization	Mean	Std. Deviation	Median	Mode with N	N	Range	Coefficient of skewness
CDAC	27.86	16.32	30	30.0(6)	21	60	0.1311
CMC	24.49	24.5	15	10.0(19)	116	100	0.5914
OTHERS	25.67	21.62	20	5.0(3)	18	70	0.956
TBSS	36	32.22	30	10.0,50.0(6)	37	100	0.5586

INFORMATION TECHNOLOGY AND INDIAN ECONOMY: A DISCUSSION

DR. BANDANA PATHAK
READER
S. B. WOMEN'S COLLEGE
CUTTACK

ABSTRACT

The Information Technology is now a great help to the development of Indian Economy particularly in service sector. It's effectiveness is felt in each and every sector. Starting from Education to Tourism in all field it has a great role to play. This article discusses the growth of Information Technology and its impact on Indian economy}

KEYWORDS

information technology, software, hardware, development, economy.

INTRODUCTION

Indian economy is now a fast growing economy. With the changing scenario of the entire world. Indian economy is now advancing with this information technology due to its young working force. Information technology essentially refer to the digital processing, storage etc. An example of IT's broader impact comes from the case of so called IT enabled services, a broad category includes different kinds of data processing and voice interactions that use some IT infrastructure as inputs, but do not necessarily involve the production of IT inputs.

DEFINITIONS AND MEANING

Information technology can be defined by what it does. The meaning as well as definition of Information Technology can be defined as follows;

The technology used for the study, understanding planning, design, construction, testing distributing support and company related systems for the purpose of data, information and knowledge processing.

It also can be referred to as an industry that has evolved to include the study, science and solution for all aspects of data information and knowledge management and processing

The organization is an enterprise or business that is held responsible and accountable for the technology used for planner, design connections, distribution support and operations of software, computers and computer related systems that exist for the purpose of data information and knowledge, management and processing. (Vijayosri G. V.)

Information Technology as meant in India is an act of processing, storage and dissemination of vocal, pictorial, textual and numerical information by a micro-electronic based combination of computing and telecommunication. Information technology (IT) is the industry, which through the use of computer and other supplanting equipment's helps in the spread of knowledge. IT for some time was synonymous to computer. But the rapid and advancement in various information delivery system such as Radio, TV. Information Technology refers to the entire gamut of Media and devices used to transmit and process information for use by various target groups in the society. It has therefore been right trend at information and combination revolution. (Vijayosri G. V.2013)

The Information Technology Association of America (ITAM) defines it as the technology (hard ware and software) require for in processing of data that encom-passes all forms of use to store exchange and use information in its various forms (business data, voice conservation, still images, motion pictures, multi-media presentation and other forms including those not yet concerned. It is a convenient term for industry both telephone and computer technology in the same word. It is the technology that is deriving what has often been called "the information revolution"

These definition shows the importance and impact of Information Technology Sector. This study aims at analysing the role of IT sector in Indian economy by taking into account secondary data. The data referred for IT sector decomposition is from 1994-95 to 1999-2000, and for comparison with GDP the period of 1994-95 to 2000-01 is taken which is just after the reform period in India. The objective of study is as per following:

- to know the importance of IT sector in Indian market structure
- to examine the role of IT in Indian employment sector
- to know the present status of IT sector in India
- to discuss the future of this sector in context of Indian Economic progress.

DISTINCTION BETWEEN HARDWARE AND SOFTWARE

The basic distinction between hardware and software is the former refers to the physical components of processing storage devices and communication devices, the latter refers to the instruction that govern the flow of processing of information in digital form within and between hardware devices and components. The design of hardware actually involves the development and use of appropriate software code, so they have definite overlaps in the two categories. It is also possible to substitute software for hardware in the basic design of it. The actual production of hardware is classified within the manufacturing sector and is more distinct from development of software preferably manufacturing semi produce and other sophisticated hardware components that require infrastructure large scale investments capacity and accumulated expenses that India does not possess and is not in a position to acquire easily. India's development path despite its emphasis on impact substituting industrilisation has not supported the growth of a robust worldwide class manufacturing industry such as has arising in many East Asian countries. (Singh N. 1014)

TABLE 1: INDIA'S IT SECTOR DECOMPOSITION (Rs. billion)

Year	Hardware	Software	Other	Domestic	Export
1994-95	23.8	26.1	13.6	34.6	21.1
1995-96	36.8	41.9	20.2	59.0	26.6
1996-97	48.1	63.1	25.8	68.4	49.8
1997-98	52.4	100.4	33.8	88.4	73.4
1998-99	42.5	158.9	36.4	105.4	110.3
1999-2000	65.7	243.5	61.6	152.7	176.3

Source: www.nasscom.org/it_industry/index_statistics,asp.

SOFTWARE EXPORT

India's software export went from a five million dollars by 1995-96 and $4.2 billion in 2000-01. despite the global slowdown, software exports exceeded the 2000-01 figure by 31% dollar terms crossing 68 billion. While growth has slowed down from the earlier 50% rate the dollar increases are as high while the NASSCOM Mckinsey target of $50 billion in software exports revenue by 2008 may be overoptimistic the resilience of software exports in a difficult economic climate has proved pessimist wrong. (Singh N. 2002)

IT Enabled services: IT enabled services are not necessarily related to the production of software or IT in general but use IT to make the provision of services possible to consumer call centers as for one example where India's have been training to speak with American ascent, in order to deal with customer queries from

the US. Accounting services are a 2nd example. NASSCOM provides a categorization of 10 different type of IT enabled services varying wider in terms of skills required and value added. The ten categories overlap to some extent but they give a good idea of the scope of the industry. (Singh N. 2002)

- Customer interaction services
- Business Process Outsourcing/ Management Back office operation
- Insurance claim processing
- Medical Transcription
- Legal Database
- Digital content
- Online Education
- Data Digitalisation/GIS
- Pay bill/ HR services
- Website Services

IT industry in the country has played a major role in placing India on the international map. The Indian IT industry mainly comprises of instance system Integration Software experiment, Custom Application development and Maintenance (CADM) network and IT solution. According to the analysis done by the annual report 2009-10 prepared by the Department of Information Technology (DIT) the IT-BPO industry was expected to achieve a revenue aggregate of US $ 73.1 billion in 2009-10 as compared to US $ 69.4 billion in 2008-09 growing at a rate of over 5%. The report even produces that the Indian IT-BPO revenue may reach US $225 billion in 2020. (Singh N. 2002)

HISTORY

The Indian IT industry comprises of software industry and information technology enabled source (ITES) which even includes business process outsourcing(BPO) industry. Indian industry is considered as a pioneer in software development and a favourable destination for IT enabled services. In 1974 the origin of IT industry in India can be traced when the main frame manufacturer Burroughs asked its India sales agent Tata Consultancy Service (TCS) to export programming for installing system software for U.S. client. (Singh N. 2002). The Indian IT industry was began by the Bombay based conglomerates that entered the business by supplying programmers to global IT firms located overseas. During 1970s the Indian economy was state controlled remained hostile to the software industry. Even the import tariffs were high like 135% in hardware and 100% on software. Even the exporters were ineligible for bank finance. In 1984 Rajiv Gandhi became Prime Minster and the government policy towards IT sector changed. The New Computer Policy (NCP-1984) consisted of a package of reduced import tariffs on hardware and software which reduced to 60%. Even during this time, the recognition of software exports as a "delicious industry" was done so that banks were eligible for finance free from license permit raj, there was even the permission for foreign force to set up wholly owned subsidiaries. All such policies are reason for the development of a world class Indian IT industry. Tata consultancy Services(TCS) Wipro, INFOSYS, HCL are well known in the global market for their IT competency Metro cities like Bangalore, Mumbai, Delhi, Chennai and Hyderabad has become the favorite destination for all the big banners like HSBS, DELL, Microsoft, GE, Hewlett, Packard and several Indian multinationals like Infosys, Techno, Wipro and Micro band have set up their offices in those cities. As the cities offer good infrastructure with large flow space and great telecom facilities. This could be reason for the basis of the high growth. Status of India and the changing outlook of the companies towards India. The Indians IT industry has grown up to US $5.7 billion in 1999-2000 with the annual growth rate, not sliding below 50% since 1991. (Singh N. 2002)

INFORMATION TECHNOLOGY IN INDIA

IT comprises of two major components, IT services and business process outsourcing (BPO). The sector has increased its contribution to India's GDP from 1.2% in 1998 to 7.5% in 2012. According to NASSCOM the sector aggregated revenues of US $100 billion in 2012, where in exports revenue stood at US $ 69.1% billion and domestic at US $ 31.7 billion growing by over 9%. India's economy underwent economic reforms in 1991, leading to a new of globalization and international economic integration. Economic growth of over 6% annually was seen during 1993-2000. The economic reforms was driven in part by significant the international usage in the country. The Atal Bihari Vajpayee 1991 government which placed the development of Information Technology among its top five products, forward the Indian National Task Force on IT and software development. The new telecommunication policy 1999 (NTP 1999) helped further, India's telecommunication sector. The Information Technology Act 2000 created legal procedure for telecom transaction and e-commerce. Throughout the 1990s another waves of Indian professionals entered the US. The number of Indian American reached 1.7 million by 2000. This immigration consisted largely of highly educated technologies knowledge prefer workers. The success of IT in India not only had economic repercussions but also had far reaching political consequences.

Recently IT committee was set up by the Ministry of Information Technology. Govt of India, comprising Non residential Indians (NRI) professionals from U.S. to seek expertise and advice also to step up U.S. (Singh N. 2002)

GROWTH IMPACT OF INFORMATION TECHNOLOGY ON INDIAN ECONOMY

India's IT industry recorded phenomenal growth over the last decade. During the period from 1991-2001, the component annual growth rate of the Indian IT services industry has been over 50%. The software sector in India has grown at almost double the rate of the US software sector. The IT industry in India has seen massive change, growth and development over the year. The future of this industry seems bright with more growth being predicted.

- ❖ Promoting the growth of human resource development in the IT sector with the aim of creating quality based industry
- ❖ Promoting R & D in the sector by education identifying thrust areas and drawing up a blueprint for action

India's most prized reason is today's knowledge economy to its readily available technical work force. India has over 4 million technical workers over 1832 educational institution and polytechnics, which retain more than 107,755 computer software professionals every year. Government of India is stepping up the number and quality of training facilities in the country to capitalist on this extraordinary human resource. It is the knowledge industry that will help to take the Indian economy to a sustained higher rate of growth and the policy makers are fully aware of this. (Vijoyosri G. V. 2012)

FINANCIAL CONSTRAINT: A striking feature of the Indian economy pre-reform was its inefficient use of capital. Relatively high savings rates were associated with relatively low growth rates. Financial sector reform on India has focused on making the country's organized capital markets more efficient. Simple institutional improvements such as electronic trading and settlement, guidelines for corporate governance have been introduced. An important beginning was made by a committee, on ventures capital appointed by the Securities and Exchange Board of India (SEBI), India's chief financial regulator investment in India's sector. The committee is chaired by Minister of Information Technology Government of India, and the members include secretary, Ministry of Information Technology and a large number of important Indian American IT entrepreneurs.

LATEST DEVELOPMENT: As per confederation of Indian Industry (CII) Report, the Indian IT industry is growing at an annual rate of 35%.

NATIONAL e-GOVERNANCE PLAN (NeGP): The government of India plan together high priority to improve the quality to the citizens by providing basic services at their doorstep for which it has formulated a NeGP covering IT mission made projections.

STATEWISE AREA NETWORK(SWANs): The Governemnt has started a scheme for establishing SWANs across the country in 29 states with a total estimates of US $ 682.27 million over a period of five years.

STATE DATA CENTRES (SDCs): SDCs have been identified important core infrastructure of supporting e-governance initiative under NeGP.

COMMON SERVICE CENTRE (CSCs): The main objective of CSCs is to develop a platform that can enable government private and social sector organisation to cater to the social and commercial goals for the benefit of the rural population in the country with a combination of IT based as well as non –IT based services.

COMMUNITY INFORMATION CENTRE(CIC): Government has initiated the CICs in the hills and far-dwelling rural areas of the country with main objective to bring benefits of ICT to the people for the purpose of socio-economic development.

NANOTECHNOLOGY Department of IT started nano-technology development programme during the 10th plan with the aim of creating infrastructure for research in non-electronics and non-meteorology at National level.

FUTURE USE OF IT IN DIFFERENT SECTOR IN INDIA

Former Indian Prime Minister Sir Atal Bihari Bajpayee once described IT as "India's to-morrow". With the convergence of computing, communication and electronics. The scope of IT is changing as the key industries such as following:
Transportation (road, rail, air,sea and urban transport)
Financial services (banking, insurance and stock trading)
Hospitality (hotels, restaurants and tourism)
Automatic and Aerospace
Core industries (oil, gas, steel and mining)
Services (education and health care)

CONTRIBUTION OF INDIA'S IT INDUSTRY'S TOWARDS ECONOMIC PROGRESS

The flourishing Indian economy has helped the IT sector to maintain its competitiveness in the global market. The IT and IT enabled service industry in India recorded a growth rate of 22.4% in the last fiscal year. The total revenue from this sector has valued at 2.46 trillion Indian rupees in the fiscal year 2007. Out of this fiscal the domestic IT market in India accounted for 900 billion rupees. So the IT sector in India has played a major role in drawing foreign funds in to the domestic market.

RURAL DEVELOPMENT

There are many efforts underway in India and other developing countries to demonstrate the concrete benefits of IT for the rural population and to do so in a manner that makes economic sense. The general presumption behind these efforts is that resources spent in this manner have a positive return on development large enough to justify a possible diversion from other users that directly address those basic needs. (Singh N & S. Singh 2014)

e-COMMERCE

It can be interpreted broadly to include business to business transaction on even internal process. In fact, developing countries have the opportunity to leap frog over older, more expertise approaches such as Electronic Data Interchange which represent significant legacy investments in countries such as the U.S. Indian e-commerce sites have to adopt to the Indian Scenario in terms of logistic payments systems and legal mechanisms. The use of cash on delivery in private companies and the important thrust and reputation have allowed e- commerce transaction to gain a foot holder in Indian retailing. Recent moves to allow FDI in multi-brand retail in India. One area where e-commerce can have some impact on rural India is not from the perspective of consumer but of producers. It is possible to use IT specifically the internet, to market rural handicrafts to widely disbursed consumer in developed countries. (Singh N. 2014)

MANUFACTURING SECTOR

Compared to many other developing countries India's manufacturing sector has played an unusual role in the natural growth experience. In 1950-51, the first year for which comparable data available, manufacturing was approximately 9% of GDP. By 1979-80 the rate had risen close to 15% but thereafter has hardly increased. The highest share of manufacturing year was in 1991-97 at 16.6% after then the figure has hovered either side of 16% even in the year where India's GDP grew at over 9% annually. In the context the new National Manufacturing Policy (NMP: 2012) explicit goal of increasing manufacturing share to 25% by 2022 is extremely ambitious. (Singh N. 2014)

e-GOVERNANCE

There are many examples of IT use in governance in India and we will discuss some of them briefly especially in the context of their impacts on expenditure quality and service delivery. Citizen facing public service delivery from two potential problems. First all transactions costs are often quite high, relatively uniformly across use and independent of the effort of services providers (Government officials). In the language of economies, the production technology is inefficient. If IT can be implemented to reduce these transaction costs by making access to information easier or executing procedures (e.g. application, for documents and certificates or making payment for facilities. This could be reason for the basis of the high growth status of India and the changing outlook of the companies thereby India. The Indians IT industry has grown up to US $ 5.7 billion in 1999-2000 with the annual growth rate, not sliding below 50% since 1991

THE ROLE OF THE INFORMATION AND COMMUNICATION TECHNOLOGY

Unbound from the structure of the PTI days ICT has become the foundation of every sector of every economy. (Kremer J.W, Jenkins B. Kate R.S. 2007)

- Offer immediate connectivity, voice data visual, mproving efficiency transparency, such as physical transaction
- Substitute for other: more experience means of communicating and transactions, such as physical trade
- Increase choice in the market place and provide access to otherwise unavailable goods and service
- Under the geographic scope of potential market.
- Channel knowledge and information of all kinds
- Reduce transaction costs and there by improve productivities.

NEW AND EXPANDING MARKETS

Low income individuals and households based on household income survey 110 countries and standardized expenditure survey in 36 countries, the World Resource Institute and International Finance Corporation estimate that the four billion people worldwide currently earning less than $4 a day have a collective purchasing power of around $ 5 trillion. The market for ICTs among these four billion is fast growing. It is still relatively small to be sure, according for just over $50 billion or rough 1% of total purchasing power in these segments.

MOBILE TELECOMMUNICATION

It took 20 years to reach One billion users, but only three years to reach two billion and forecasts suggest, another two years to reach three billion. Nine of the 10 markets for new connections are emerging markets.

SMALL AND MEDIUM SIZED ENTREPRENEUR

SMEs are the backbone of all economic large and small developed and developing countries. While the precise causal relationship between SMEs growth and poverty have not been conclusively determined, the number do reveal some close interaction between SMEs and overall economic health. It appears that the more advanced a country, the larger the formal sector SME sector. In developed countries SMEs contribute 60% of employment and 50% of gross domestic product (GDP). In developing countries, the figures are only about 30% and 17% respectively. (Kramer W. J., Jenkins B, Katz R. S. 2007)

CREATIVE INCLUSIVE BUSINESS MODELS

Inclusive business models in the ICT sector seem to take one of two primary types, they can target local individual, household and SME market for sales of technologies and services. They can also support the development of local partner networks in developing countries, creating opportunities for local business to start up and grow.

DEVELOPING LOCAL PARTNER NETWORKS

Like other large firm, large ICT companies today have extensive value chain, often referred to as partner networks or ecosystems spanning from component and equipment manufacturer to independent software developers and vendors to distributors and retailers to systems architects to technical support services. Mobile telecommunication earners also funding a great deal of scope for local partners in developing countries. In the Philippines, SMART and Globe have created a business worth more than $200 million a year to more than a million small retailer by adopting business models based on prepaid, rather than subscription based usage. These air tune retailer, found in Kiosks and shops all over the country, play many roles for their larger partner.

The table below shows the GDP at current prices and on comparative statement of IT sector in rupees and dollars.

TABLE 2: INDIA's GDP AND IT SECTOR

Year	GDP Current Prices (Rs billion)	IT sector (rs billion)	IT sector(US $billion)
1994-95	9170	63	2.0
1995-96	10,732	99	2.9
1996-97	12,435	137	3.8
1997-98	13,900	187	5.0
1998-99	16,160	248	6.1
1999-2000	17,865	371	8.7
2000-2001	19,895	554	12.2

Source: GDP www.adborg.IT sectorwww.nasscom.org/it_industry/ india_statistics_asp

RESEARCH AND DEVELOPMENT

The research in the industry was earlier concentrated towards programming technologies like JAVA in the recent times, the research focus changed towards technologies like mobile, company drawn computing and software as a service. This shift is attributed to preference of checks towards the ubiquitous computing over stand alone, computing and the growing demand for low cost computing solution.

IMPORTANCE OF INFORMATION TECHNOLOGY

1. IT has entered almost all industry verticals for instance railways, airways and sea networks are connected with the help of IT, as information plays a vital role in the smooth functioning in those sector and lack of even for a second can create havoc
2. Banking is another sector that depend a lot on IT. From carrying out imported transfer to storage of confidential data.
3. IT has made several complicated and time consuming work a lot simple and faster with considerable amount of safety. In fact, e- commerce has made on line banking as well as outline purchase and selling of commodities and service much easier and faster adding to the commerce of the common man.
4. The travel and tourism sector all over the world has benefited a lot from the development of IT industry.
5. IT plays a major role in simplifying various organizational process. Most business enterprises rely on the power of information technology for carrying out their daily tasks conversely and faster
6. The field of education has also been blessed with the benefits of IT. Online application to universities, checking results, study materials and much more has made the reach of education broad and easier. (Vijoyosri G.V. 2013)

The growth and prosperity of India's IT industry depends on some crucial factor. This factors are as follows.

- India is home to large number of IT professionals, who have the necessary skill and expertise to meet the demands and expectations of the global IT industry
- The cost of skilled Indian work force is reasonably low compared to the developed nations. The Indian IT services highly cost efficient and this is also the reason as to why the IT enabled services like business process outsourcing and knowledge process outsourcing have expanded significantly in the Indian job market
- India has a huge pool of English speaking IT professionals. This is why the English -speaking countries like the U.S. and the U.K. depend on the Indian IT industry for outsourcing their business process. The IT enabled sector of India absorbs a large number of graduates from general stream in the BPO and KPO firms. All these have solved to some extent the unemployment problem. The industry continues to be a net employment generator expected to add 2,30.000 jobs in FY 2012 thus providing direct employment to about 2.8 million and directly employing 8.9 million people. However, the sector continues to face challenges of competitiveness in the globalised and modern world, particularly from countries like China and Philippines. The Indian IT market currently focuses on providing low-cost solution in the services.

DIGITAL INDIA

Digital India is an initiative by the Government of India to ensure that Government services are made available to citizens electronically by improving on line infrastructure and by increasing internet connectivity. It was launched on 1st July 2015 by Prime Minister Sri Narendra Modi. The initiative includes plans to connect rural areas with high speed internet network.

Digital India has three core components

- The creation of digital infrastructure
- Delivering services digitally
- Digital literacy

A two-way platform will be created where both the service providers and the consumers stand to benefit. The scheme will be monitored and controlled by the Digital India Advisory Group which will be chaired of the Ministry of Communication and IT. It will be an inter-Ministerial initiatives. Where all ministers and departments shall offer their own services to the public health care, Education, Judicial services etc. The Public – Private partnership model shall be adopted selectively. In addition, there are plans to restructure the National Information Centre. The project is one among the top priority projects of Modi Administration

There are nine pillars of Digital India programme

1. Broadband Highways
2. Universal Access to mobile connectivity
3. Public Internet Access Programme
4. e–governance- reforming Government through technology
5. e-kranti electronic delivery of services
6. Information for all
7. Electronics Manufacturing
8. IT for jobs
9. Early Harvest programme

DIGITAL LOCKER

Digital locker facility will help citizens to digitally store their important documents like PAN card passport, mark sheets and degree certificate, Digital locker will provide secure access to government issued documents. IT users authentically service provided by **Aadhar**. It is aimed at eliminating the use of physical documents and enable sharing of verified electronic documents, across government agencies.

The average purchasing power of the common people of India has improved substantially. The consumption spending has reached as all-time high. The aggregate demand has increased as a result. All these improved the gross production of goods and services in the Indian Economy. Even a common man in India is using the facility of Information and Technology Starting from a child to adult all are now exposed to some extent about this technology. IT sector is now linked with education, health, public services and other basic services. It is linked with market. So in the conclusion it can be said that the growth of IT industry has been instrumental in facilitating the economic progress of India.

REFERENCES

1. Abhinav International Monthly Referred Journal of Research in management and Technology Volume II August 13 ISSN-2230 –0073 The role of Information technology (IT) in India by G.V. Vijoysri available at www.abhonavjournal.com
2. Information technology and India's Economic Development by Nirvikar Singh Revised July 2002
3. Information Technology and its Role in India's economic Development: A review by Nirvikar Singh Aurora chain of Sikh and Punjabi studies, University of California Santa Cruz Revised April 2014
4. www.nasscom.org/it_industry/spectrum.asp

DIGITAL ACCESS SKILL IN THE WEB AMONG LIBRARY USERS OF PATRICIAN COLLEGE STUDENTS: A STUDY

G. MEENAMBIKA
RESEARCH SCHOLAR, BHARATHIAR UNIVERSITY, COIMBATORE;
LIBRARIAN
PATRICIAN COLLEGE OF ARTS & SCIENCE
CHENNAI

S. MAIDHILI
RESEARCH SCHOLAR, BHARATHIAR UNIVERSITY, COIMBATORE;
LIBRARIAN
MEENAKSHI COLLEGE FOR WOMEN
CHENNAI

DR. N. THILAGAVATHY
LIBRARIAN
DR. M. G. R. JANAKI COLLEGE OF ARTS & SCIENCE
CHENNAI

ABSTRACT

This study focuses mainly on students' access pattern in online. This study is limited with students doing projects and research works using web e-resources. Using "The information seeking behavior on the web model" created by Choo, Dettor & Turnbull (1998) information seeking skill level in online environment is measured. The primary goal of this study is to create awareness about library subscribed resources. This is a follow up study of "Patrician College Library user study 2014-15" which concluded that most of the students first information search starts from Google and suggested to provide more computers with internet access facility. This article focuses on student's requirement of e-resources and to improve the digital services in library.

KEYWORDS
digital access skill, digital environment, information seeking pattern, user study, digital library user study.

1. INTRODUCTION

Patrician College of Arts and Science located in the centre of city Adyar was established in 2001 Christian minority co-educational self-financing institution affiliated to the University of Madras, catering to the educational needs of students. The study is the follow up study of previous minor research entitled "Information seeking behavior of students of patrician college of Arts and Science College Library". In previous study it is found that most of the students' first search of information starts in internet. To find students digital information literacy level and their satisfaction in internet search and to create awareness about lack of authenticity of information available and encourage to use digital resources subscribed by patrician college.

2. OBJECTIVES OF STUDY

- To study the internet users Digital access skill among students of Patrician College.
- To study web users, search behavior
- To study users' perceptions on e-resources
- To find internet users mindset and their preferences
- To know the use and usage of source of information and format available in internet and
- To create awareness about digital services provided by library.
- To measure PCAS students' satisfaction level in searching internet e-resources.
- To create awareness about authenticated information available under library subscribed e-resources.
- To make them to utilize subscribed e-resources under NLIST Programme.

3. SCOPE OF STUDY

- The study is limited to Patrician College of Arts and Science College library users.
- Period of study is between June and December, 2015
- Study is limited to students referring project related search in internet

4. METHODOLOGY

Using "The information seeking behavior on the web model" created by Choo, Dettor and Turnbull (1998) Internet usage and online behavior is collected through direct interviewing direct observation method. Survey method is used for data collection. 100 questionnaires were distributed among the students and only 85 filled in questionnaires were obtained from them.

Simple percentage method is used for data analysis. Direct Observation of student's access pattern, direct interview and transaction log is observed to get clear view of student's information access pattern in online. Collected data is analyzed using Simple percentage method.

CHOO'S INFORMATION SEEKING BEHAVIOR ON THE WEB MODEL[1]

Choo, Dettor and Turnbull New behavior model for information seeking identifies four modes of information seeking on the web.

1. Undirected viewing
2. Conditioned viewing
3. Informal Search
4. Formal Search

4.1. UNDIRECTED VIEWING

Searching directly in internet browser without any clear idea about what to find and what to do and navigating all source of links available in the web. Ellis's moves, starting and chaining dominate this mode.

4.2. CONDITIONAL VIEWING

In this mode the seeker views information on a selected topic. The moves anticipated are browsing, differentiating and monitoring.

4.3. INFORMAL SEARCH

The active search of information and understanding of the topic can be broadened and deepened. Moves anticipated are differentiating, extracting and monitoring.

4.4. FORMAL SEARCH

In this mode searching is planned, structured and deliberate. The searcher is prepared to invert time and effort on the searching. The search is called format because it follows a method. The moves anticipated are extracting and monitoring

'Behavior model of information seeking on the web'

	Starting	Chaining	Browsing	Differentiating	Monitoring	Extracting
Undirected view	x	x				
Conditioned view			x	x	x	
Informal Search				x	x	x
Formal Search					x	x

5. DATA ANALYSIS

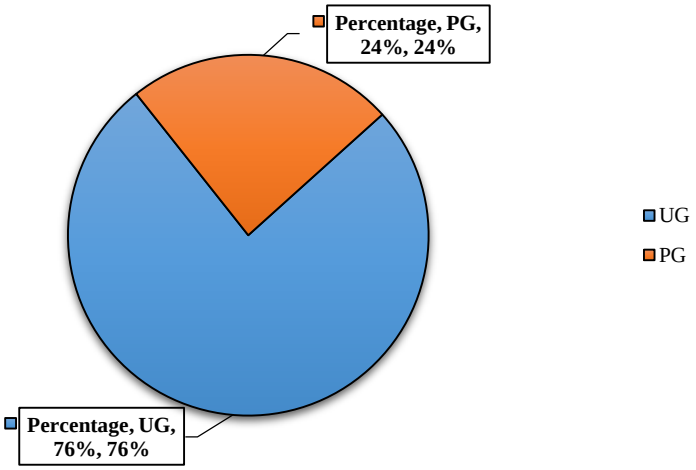
This study is the follow up of previous study that most of the student's information search starts with internet. In order to know their ability to search information, find relevant information, navigating information, differentiating information, monitoring information and extracting information. Through this module it is easy to find their behavior skill level.

TABLE 1: DEGREE WISE RESPONDENTS

Degree	Observant	Percentage
UG	70	76%
PG	22	24%
Total	92	100%

Table 1 depicts the data of users of library among 92 Observant UG students are more (76%) followed by PG students 24%

FIG. 1: DEGREE WISE DISTRIBUTION OF RESPONDENTS



5.1 INFORMATION SEEKING MODES AND MOVES ANALYSIS

Students search moves for their project is observed and interviewed directly in e-cabin of library are analyzed through four modes of information seeking

5.1.1. STARTING AND CHAINING

Title search, Company related information related searches are in this moves starting, Chaining.

5.1.2. BROWSING, DIFFERENTIATING, MONITORING

After some idea about title of the project and company next level of moves are browsing, differentiating and monitoring.

5.1.3. DIFFERENTIATING, MONITORING, EXTRACTING

Extracting finalized company for internship by differentiating, Monitoring, Extracting for further comparison with other companies.

5.1.4. MONITORING, EXTRACTING

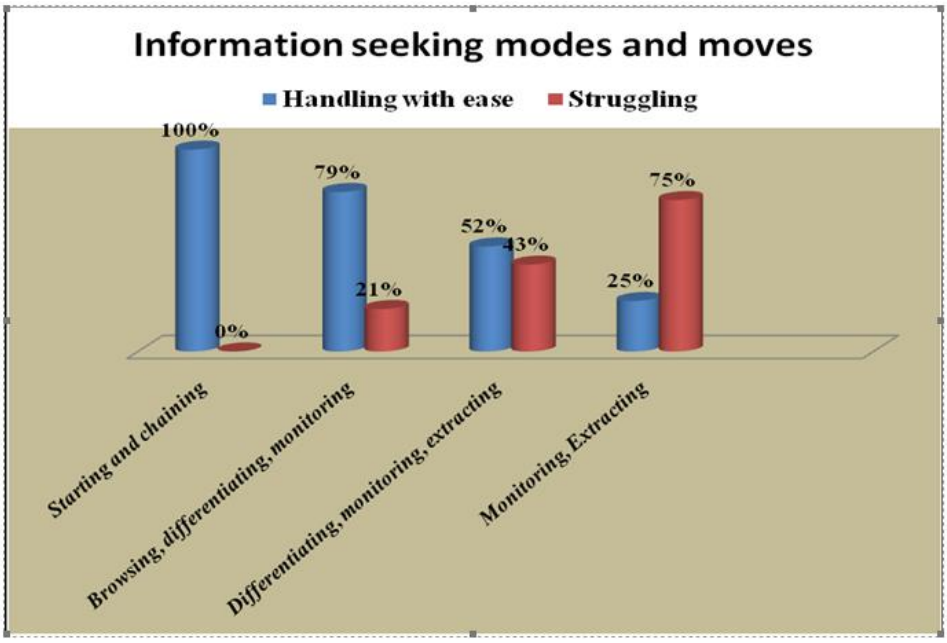
Experienced research scholars are in this moves, keeping on track of updates and keeping alert of interested information for their research work.

TABLE 2: INFORMATION SEEKING MODES AND MOVES

Information seeking modes and moves	Direct Observation & Interview of students			
	Handling with ease	Percentage	Struggling	Percentage
Starting and chaining	92	100%	0	0%
Browsing, differentiating, monitoring	73	79%	18	21%
Differentiating, monitoring, extracting	48	52%	40	43%
Monitoring, Extracting	23	25%	69	75%

Above table shows that respondents as they are digital natives (100%) of students are familiar of internet usage and not struggling in first mode of starting and chaining. In second mode whereas (79 %) of respondents are handling with ease while (18%) are struggling in browsing, differentiating and monitoring. In third mode of differentiating, monitoring, extracting handling with ease minimized with (48%) and (42%) of respondents are struggling in this stage. In the last monitoring, extracting mode most of respondents (75%) are struggling and only very few (25%) are capable of handling information properly.

FIG. 2: INFORMATION SEEKING MODES AND MOVES



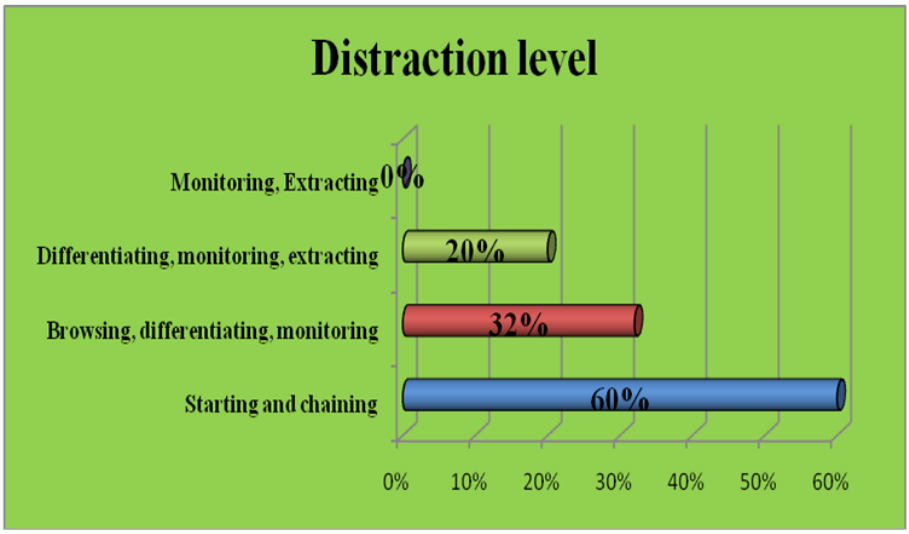
5.2 DISTRACTION DURING INFORMATION SEARCH IN WEB

TABLE 3: DISTRACTION DURING INFORMATION SEARCH IN WEB

Information seeking mode and moves	Direct Observation & Interview of students	
	Distracted	Percentage
Starting and chaining	55	60%
Browsing, differentiating, monitoring	29	32%
Differentiating, monitoring, extracting	18	20%
Monitoring, Extracting	0	0%

The above table depicts distraction level among respondents is more 60% in first mode itself, second mode 32% of respondents gets distracted from their search of information due to irrelevant navigation links. In the third mode only few 20% are distracted from their search whereas respondents are not all gets distracted when they are in final stage of information search monitoring, extracting and they are in more confident in this final mode.

FIG. 3: DISTRACTION DURING INFORMATION SEARCH IN WEB



6. MAJOR FINDINGS

- Among 92 respondents 100% are handling easily in Digital environment but distraction level is high in First Stage 'Starting, Chaining' of searching 60%
- Out of 92 respondents 73 are handling with ease only 18 of them are struggling in Second Stage 'Browsing, Differentiating, Monitoring' in navigating links and out of 92 respondents 29 are distracted to other sites from their information search.
- Nearly 52% of students are handling easily in filtering their information search with relevant information available in web and 48% are struggling in handling authentic information, Distraction level is minimized in Third Stage 'Differentiating, Monitoring, Extracting' mode of search.
- Very few 25% of respondents are skilled in searching and making alert facility in different forum and updating their research activities, but maximum re-spondents 75% are struggling in Extracting information and lack of skill in updating but distraction among respondents is nil in Forth Stage 'Monitoring, Extracting'.

7. SUGGESTIONS

- Digital natives are familiar in internet usage but they lack in filtering their required information. Lack of awareness on authenticated e-resources, using mostly first page of Google search as preferred information without taking more effort, for them authenticated websites are recommended.
- Printed Projects are not allowed to borrow, hence E- project submission to library is suggested.

- Orientation for students on authenticated databases is in need to avoid distraction during their research.

8. CONCLUSION

According to American Library Association Presidential Committee on Information Literacy's January 10, 1989 report, "Information Literate people are those who have learned how to learn. They know the way to learn because they have learnt how knowledge is organized, how to find information and how to use information in such a way that others can learn from them. They are people ready for lifelong learning, because they can always find the information needed for any task or decision at hand" (ACRL, 2015b) [2]

Students busy with Google search are given opportunities to use internet in library after their class hours and observed their information literacy in using internet e-resources. Students information search and satisfaction is higher in UG level as they need only search in general. In PG level students, the case is different needed more information for their research work. Students are not aware of E-resources subscribed in Library. Digital Information literacy programme is suggested for the effective usage of library subscribed e-resources for both faculty and students.

REFERENCES

1. http://www.slideshare.net/2548233/information-seeking-behaviour-models
2. Abraham, Laila, T (2015), Need for developing information skills in E-learning environment, Paradigm shift in Libraries A Festchrift to Rev. Fr. Jose Viruppel pp.52-58 (accessed on 21/01/2016) available at http://eprints.rclis.org

AN APPLICATIONS OF DATA WAREHOUSING

PADMANJALI.A.HAGARGI
ASST. PROFESSOR
INFORMATION SCIENCE & ENGINEERING DEPARTMENT
GURU NANAK DEV ENGINEERING COLLEGE
BIDAR

ABSTRACT

Data-driven decision support systems, such as data warehouses can serve the requirement of extraction of information from more than one subject area. Data warehouses standardize the data across the organization so as to have a single view of information. Data warehouses (DW) can provide the information required by the decision makers. The data warehouse supports an on-line analytical processing (OLAP), the functional and performance requirements of which are quite different from those of the on-line transaction processing (OLTP) applications traditionally supported by the operational databases. Data warehouses provide on-line analytical processing (OLAP) tools for the interactive analysis of multidimensional data of varied granularities, which facilitates effective data mining. Data warehousing and OLAP have emerged as leading technologies that facilitate data storage, organization and then, significant retrieval. Both are essential elements of decision support, which has increasingly become a focus of the database industry. This paper provides a detailed overview of Data warehousing (DW), exploring the features of it, applications and the architecture of DW over Data Mining, Online Analytical Processing (OLAP), On-line Transaction Processing (OLTP) technologies.

KEYWORDS

data warehousing, data mining, OLAP, OLTP, decision making and decision support & managerial decision making.

1. INTRODUCTION

Data Warehousing is a collection of decision support technologies, aimed at enabling the knowledge worker (executive, manager, analyst) to make better and faster decisions for smooth functioning of the enterprise. It serves as a physical implementation of a decision support data model and stores the information on which an enterprise needs to make strategic decisions. It provides architecture and tools for business executives to systematically organize, understand and use their data to make strategic decisions. Data Warehouse is a database of historical, summarized and consolidated data is more important than detailed, individual records used for reporting and analysis. It refers to the database that is maintained separately from an organization's operational databases which contains consolidated data. The data stored in the data warehouse is uploaded from the operational systems, over potentially long time they tend to be much larger than operational databases. DW systems allow for the integration of a variety of application systems. They support information processing by providing a solid platform of consolidated historical data for analysis. DW technologies have been successfully deployed in many industries: manufacturing (for order shipment and customer support), retail (for inventory management), financial services (for credit card analysis, risk analysis, and fraud detection), utilities (for power usage analysis), and healthcare (for outcomes analysis). This paper presents an overview of data warehousing technologies, focusing on the special requirements that data warehouses place on Database Management Systems (DBMSs).

Bill Inmon (father), the world-renowned expert, said that the definition for a Data Warehousing was and still is today. "A source of data that is subject-oriented, integrated, nonvolatile, and time-variant for the purpose of management's decision processes".

Subject oriented — The data are logically organized around major subjects of the organization, e.g., around customers, sales, or items produced.

Integrated — All of the data about the subject are combined and can be analyzed together.

Time variant — Historical data are maintained in detail form.

Nonvolatile — The data are read only, not updated or changed by users.

Most queries on data warehouses are ad hoc and are complex queries that can access millions of records and perform a lot of scans, joins, and aggregates. Due to the complexity query throughput and response times are more important than transaction throughput.

A DW (or smaller-scale data mart) is a specially prepared repository of data designed to support decision making. The data comes from operational systems and external sources. To create the data warehouse, data are extracted from source systems, cleaned (e.g., to detect and correct errors), transformed (e.g., put into subject groups or summarized), and loaded into a data store (i.e., placed into a DW).

2. BENEFITS OF USING DATA WAREHOUSE IN DECISION MAKING

1. Improvements in turnaround time for data access and reporting generation.
2. Improved productivity of analytical staff due to availability of data
3. Standardizing data across the organization so that there will be one view of information.
4. Merging data from various source systems to create a single information source system.
5. Reduction in costs to create and distribute information and reports.
6. Business improvement resulting from analysis of warehouse data.
7. Encouraging and improving fact-based decision making.

The data warehouse supports OLAP, the functional and performance requirements of which are quite different from those of the OLTP applications traditionally supported by the operational databases.

OLTP covers most of the day to day operations of an organization such as purchasing, inventory, manufacturing, banking, payroll, registration and accounting. An OLTP system is customer oriented and is used for transaction and query processing by clerks, clients and information technology professionals. It manages the current data that, typically, are too detailed to be easily used for decision making. An OLTP system focuses mainly on the current data within an enterprise or department, without referring to historical data or data in different organizations. The access patterns of OLTP systems consist mainly of short, atomic transactions. Such system requires concurrency control and recovery mechanisms.

DW systems, on the other hand, are targeted for decision support. It serves users or knowledge workers in the role of data analysis and decision making. Such systems can organize and present data in various formats in order to accommodate the diverse needs of the different users.

An OLAP system is market-oriented and is used for data analysis by knowledge workers, including managers, executives, and analysts. These systems manage large amount of historical data, provides facilities for summarization and aggregation, and store and manages information at different levels of granularity. These features make the data easier to use in informed decision making. An OLAP system typically adopts either a star or a snowflake model and a subject-oriented database design. This system often spans multiple versions of a database schema, due to the evolutionary process of an organization. These systems also deal with information that originates from different organization, integrating information from multiple data stores. Because of their huge volume, OLAP data are stored on multiple storage media.

To facilitate complex analysis and visualization, the data in a warehouse is typically modeled multi dimensionally. For example, in a sales data warehouse, time of sales, sales district, salesperson, and product might be some of the dimensions of interest. Often these dimensions are hierarchical; time of sale may be organized as: day – month – quarter – year hierarchy, product as a product-category-industry hierarchy.

An operational database is designed and tuned from known tasks and workloads such as indexing and hashing using primary keys, searching for a particular record and optimizing 'canned' queries. On the other hand, data warehouse queries are often complex. They involve the computation of large amount of data at summarized levels and may require the use of special data organization, access and implementation methods based on multidimensional views.

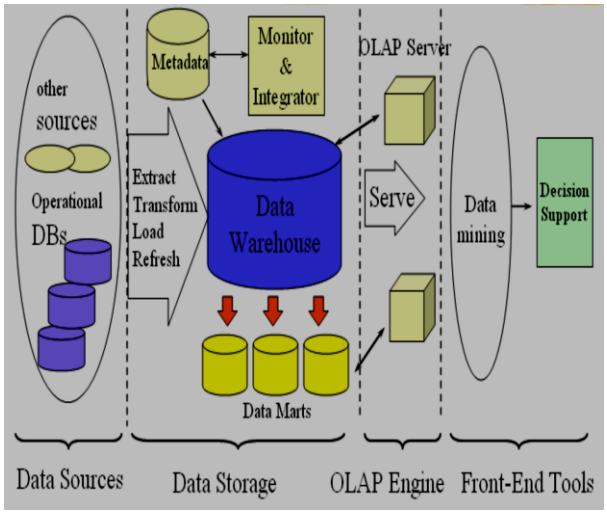
Data warehouse might be implemented on Relational OLAP (ROLAP) servers. These are the intermediate servers that stand in between a relational back-end server and client front-end tools. They use a relational or extended-relational DBMS to store and manage warehouse data, and OLAP middleware to support missing pieces. They support extensions to SQL and special access and implementation methods to efficiently implement the multidimensional data model and operations.

In contrast, Multidimensional OLAP (MOLAP) servers support multidimensional views of data through array-based multidimensional storage engines. They map multidimensional views directly to data cube array structures.

There is more to building and maintaining the data warehouse than selecting an OLAP server, defining a schema and some complex queries for the warehouse. Different architectural alternatives exist. Many organizations want to implement an integrated enterprise warehouse that collects information about all subjects spanning the whole organization. However, building an enterprise warehouse is long and complex process. Some organizations are settling for data marts instead, which are departmental subsets focused on selected subjects. These data marts enable faster roll out since they do not require enterprise-wide consensus.

3. ARCHITECTURE AND PROCESS DESIGN

FIGURE 1: OLAP WITH DATA WAREHOUSING ARCHITECTURE



A DW can be built using a top-down approach, a bottom-up approach, or a combination of both. The top-down approach starts with the overall design and planning. It is useful in cases where the technology is mature and well known, and where the business problems that must be solved are clear and well understood. The bottom-up approach starts with experiments and prototypes. This is useful in the early stage of business modeling and technology development. It allows an organization to move forward at considerably less expense and to evaluate the benefits of the technology before making significant commitments. In the combined approach, an organization can exploit the planned and strategic nature of the top-down approach while retaining the rapid implementation and opportunistic application of the bottom-up approach.

The design and construction of the DW consists of the following steps: planning, requirements study, problem analysis, warehouse design, data integration and testing, and finally deployment of the DW.

1. Choose a business process to model, for example, shipments, inventory, sales etc
2. Choose the grain of the business process. The grain is the Fundamental, atomic level of data to be represented in the fact table for this process.
3. Choose the dimensions that will apply to each fact table record.
4. Choose the measures that will populate each fact table record.

Once a data warehouse is designed and constructed, the initial deployment of the warehouse includes initial installation, roll out planning, training and orientation. Designing and rolling out a data warehouse is a complex process, consisting of the following:

- Define the architecture, do capacity planning, and select the storage servers, database and OLAP servers, and tools.
- Integrate the servers, storage, and client tools.
- Design the warehouse schema and views.
- Define the physical warehouse organization, data placement, partitioning, and access methods.
- Connect the sources using gateways, ODBC drivers, or other wrappers.
- Design and implement scripts for data extraction, cleaning, transformation, load, and refresh.
- Populate the repository with the schema and view definitions, scripts, and other metadata.
- Design and implement end-user applications.
- Roll out the warehouse and applications.

4. BACK-END TOOLS AND UTILITIES

Data warehouse systems use back-end tools and utilities to populate and refresh their data.

Data Cleaning: Data cleaning routines attempt to fill in missing values, smooth out noise while identifying outliers, and correct inconsistencies in the data. Since a data warehouse is used for decision making, it is important that the data in the warehouse must be correct. Some examples where data cleaning becomes necessary are: inconsistent field length, inconsistent descriptions, inconsistent value assignments, missing entries and violation of integrity constraints.

Load: After extracting, cleaning and transforming, data must be loaded into the warehouse. Additional preprocessing may still be required: checking integrity constraints; sorting; summarization; aggregation; and other computations to build the derived tables stored in the warehouse. In addition, load utility also allows the system administrator to monitor status, to cancel, to suspend and resume a load, and to restart after failure with no loss of data integrity. The load utilities for data warehouses have to deal with much larger data volumes than for operational databases

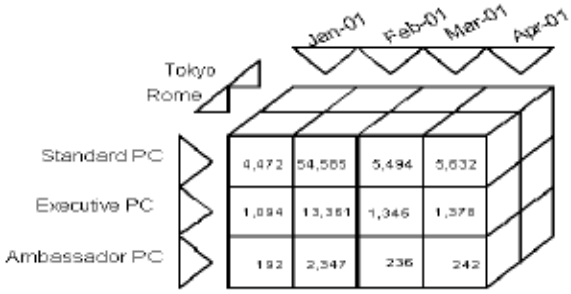
Refresh: Refreshing a warehouse consists in propagating updates on source data to correspondingly update the base data and derived data stored in the warehouse. There are two sets of issues to consider: when to refresh and how to refresh. Usually, the warehouse is refreshed periodically. The refresh policy is set by the warehouse administrator, depending on user needs and traffic, and may be different for different sources. Refresh techniques also depends on the characteristics of the source and capabilities of the database servers. Replication servers can be used to refresh a warehouse when the sources change.

5. MULTIDIMENSIONAL DATA MODEL

Data warehouse and OLAP tools are based on a multidimensional data model. This model views data in the form of a data cube. A data cube allows data to be modeled and viewed in multiple dimensions. Dimensions are perspectives or entities with respect to which an organization wants to keep records. Each dimension has a table associated with it, called a dimension table, which further describes the dimension.

A multidimensional data model is typically organized around a central theme. This theme is represented by a fact table. The fact table contains the names of the facts, or measures, as well as keys to each of the related dimension tables.

FIGURE 2: A LOGICAL VIEW OF REPRESENTATION A MULTIDIMENSIONAL DATA MODEL IN AN OLAP CUBE



6. FRONT-END TOOLS

The multidimensional data model grew out of the view of business data popularized by spreadsheet programs that are extensively used by business analysts. One of the popular operations that are supported by the multidimensional spreadsheet is pivoting. Pivot also called rotate, is a visualization operation that rotates the data axes in view in order to provide an alternative presentation of the data. Other operations are roll-up, drill-down, slice and dice. The roll-up operation performs the aggregation on a data cube, either by climbing up the concept hierarchy for a dimension or by dimension reduction. Drill-down is the reverse of the roll-up. It navigates from less detailed data to more detailed data. The slice operation performs a selection on one dimension of the cube. The dice operation performs a selection on two or more dimensions.

7. DATA MINING

Data Mining is the extraction or "Mining" of knowledge from a large amount of data or data warehouse. To do this extraction data mining combines artificial intelligence, statistical analysis and database management systems to attempt to pull knowledge form stored data. Data mining is the process of applying intelligent methods to extract data patterns. This is done using the front-end tools. The spreadsheet is still the most compiling front-end application for OLAP. The challenges in supporting a query environment for OLAP can be crudely summarized as that of supporting spreadsheet operation effectively over large multigigabytes databases. To distinguish information extraction through data mining from that of a traditional database querying, the following main observation can be made. In a database application the queries issued are well defined to the level of what we want and the output is precise and is a subset of operational data. In data mining there is no standard query language and the queries are poorly defined. Thus the output is not precise and do not represent a subset of the database. Beside the data used not the operational data that represents the today transactions. For instance, during the process of building a data warehouse the operational data are summarized over different characteristics, such as borrowings during 3 months' period. Queries can be of the type of "identify all borrowers who have similar interest" or "items a member would frequently borrow along with movies", which is not a precise as the list of books borrowed by a member. The nature of the database and the query result in extracting non-subset of data. In supermarkets such relationships have already been identified using data mining. Thus related items such as "bread and milk' or "beer and potato chips" would be kept together. Mobile companies decide on peak hours, rates and special packages based similar market research. Users can use data mining techniques on the data warehouse to extract different kinds of information which would eventually assist the decision making process of an organization Such knowledge could only be discovered through sharing experiences of librarians or by capturing the knowledge through database and integrating them as done when building DW. DSS tools assist users in discovering knowledge.

8. OLTP AND OLAP

Previously, the job of on-line operational systems was to perform transaction and process the query. So, they are also termed as OLTP. Data warehouse systems serve users or knowledge workers in the role of data analysis and decision-making. Such systems can organize and present data in various formats in order to accommodate the diverse needs of the different users. These systems are called OLAP systems.

PRE-REQUISITE OF DATA WAREHOUSING AND OLAP

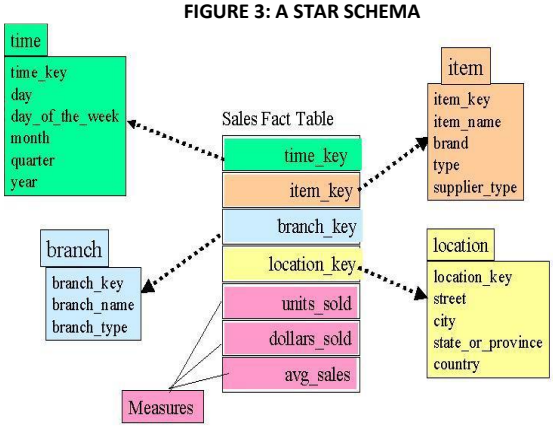
Data warehousing developed, despite the presence of operational databases due to following reasons:

- An operational database is designed and tuned from known tasks and workloads, such as indexing using primary keys, searching for particular records and optimizing 'canned queries'. As data warehouse queries are often complex, they involve the computation of large groups of data at summarized levels and may require the use of special data organization, access and implementation methods based on multidimensional views.
- An operational database supports the concurrent processing of multiple transactions. Concurrency control and recovery mechanisms, such as locking and logging are required to ensure the consistency and robustness of transactions. While and OLAP query often needs read-only access of data records for summarization and aggregation. Concurrency control and recovery mechanisms, if applied for such OLAP operations, may jeopardize the execution of concurrent transactions.
- Decision support requires historical data, whereas operational databases do not typically maintain historical data. So, the data in operational databases, though abundant, is always far from complete for decision-making.
- Decision support needs consolidation (such as aggregation and summarization) of data from heterogeneous sources; and operational databases contain only detailed raw data, which serves as base for decisions which are outputs of the decision process one has to identify the problem first to arrive at proper decision.

9. DATABASE DESIGN

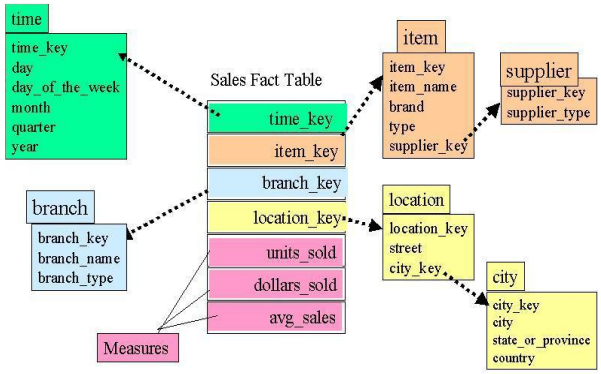
Most data warehouse use a star schema to represent the multidimensional data model. The database consists of a single fact table and a single table for each dimension. Each tuple in the fact table consists of a pointer to each of the dimension that provides its multidimensional coordinates and stores the numeric measures for that coordinates. Each dimension table consists of columns that correspond to attributes of the dimension.

FIGURE 3: A STAR SCHEMA



The Snowflake schema is the variant of the star schema model, where some dimension tables are normalized, thereby further splitting the data into additional tables. The resulting schema graph forms the shape similar to a snowflake.

FIGURE 4: A SNOWFLAKE SCHEMA



The major difference between the snowflake and star schema models is that the dimension table of the snowflake model may be kept in normalized form to reduce redundancies. Such a table is easy to maintain and saves storage space.

10. METADATA REPOSITORY

Metadata are data about data. When used in a data warehouse, metadata are the data that define warehouse objects. Metadata are created for the data names and definitions of the given warehouse. Administrative metadata includes all of the information necessary for setting up and using a warehouse; description of the source databases; back-end and front-end tools. Business metadata includes business terms and definitions; ownership of the data. Operational metadata includes information that is created during the operation of the warehouse; monitoring information such as usage statistics, error reports, and audit trails. Metadata repository is used to store and manage all the metadata associated with the warehouse. The repository enables the sharing of the metadata among tools and processing for designing, setting up, using, operating and administering a warehouse.

Metadata play a very different role than other data warehouse, and are important for many reasons. For example, metadata are used as a directory to help the decision support system analyst to locate the contents of the data warehouse, as a guide to the mapping of the data when the data are transformed from the operational environment to the data warehouse environment. So, metadata should be stored and managed persistently.

11. CONCLUSION

Data warehouses have become base for effective tool for taking effective decisions. how this help in strategic decision making, which are required to be taken by top management of organization to run it effectively and successfully reaching to achieve the objective of business. Next, is construction the architecture of the data warehouse and the process of a data warehouse design by integrating data from multiple heterogeneous sources to support and /or adhoc queries, analytical reporting and decision making. Data warehouses provide on-line analytical processing (OLAP) tools for the interactive analysis of multidimensional data of varied granularities, which facilitates effective data mining. Data warehousing and online analytical processing (OLAP) are essential elements of decision support, which has increasingly become a focus of the database industry. OLTP is customer-oriented and is used for transaction and query processing by clerks, clients and information technology professionals. The job of earlier on-line operational systems was to perform transaction and query processing. Data warehouse systems serve users or knowledge workers in the role of data analysis and decision making. Next is designing of data warehouses, data mining, distinguished between data warehouse and other techniques (OLAP, OLTP etc).

Data warehouse do not contain the current information. However, data warehouse brings high performance to the integrated heterogeneous database system. It can store and integrate historical information and support complex multidimensional queries. As a result, data warehousing has become very popular in industry.

12. ACKNOWLEDGMENT

Author would like to acknowledge and extend heartfelt gratitude to the following persons for their vital support which made the completion of this paper possible:

1. Sri. Anilkumar Hargargi, Faculty Member, Department of Management Studies & Research, Gulbarga University, Gulbarga.
2. Sri. Ganapati B. Sinnor, Asst. Professor, School of Business Studies, Central University of Karnataka, Gulbarga.

REFERENCES

1. Abiteboul, S.; Clue, S.; Milo, T.; Mogilevsky, P.; Simeon, J.: Tools for Data Translation and Integration.
2. Bernstein, P.A.; Dayal, U.: An Overview of Repository Technology.
3. Bouzeghoub, M.; Fabret, F.; Galhardas, H.; Pereira, J; Simon, E.; Matulovic, M.: Data Warehouse Refreshment.
4. Chaudhuri, S., Dayal, U.: An Overview of Data Warehousing and OLAP Technology.
5. Inmon, W.H.: Building the Data Warehouse

6. Jiawei Han, Micheline Kamber and Jian Pei: Data Mining Concepts and Techniques.
7. Jones, K." 'An Introduction to Data Warehousing: What are the Implications for the Network'. *International Journal of Network Management*.
8. Kimball, R.: The Data Warehouse Toolkit: Practical Techniques for Building Dimensional Data Warehouses.
9. Lee, J., Podlaseck, M., Schonberg, E. and Hoch, R.: 'Visualization and Analysis of Clickstream Data of Online Stores for Understanding Web Merchandising'. *Journal of Data Mining and Knowledge Discovery*.
10. Lee, M.L.; Lu, H.; Ling, T.W.; Ko, Y.T.: *Cleansing Data for Mining and Warehousing*.
11. March, S., Hevner, A.: 'Integrated Decision Support Systems: A data warehousing perspective'. *Decision Support Systems*.
12. Nemati, H. R., Steiger, D. M., Lyer, L. S. and Herschel R. T.: 'Knowledge Warehouse: an architectural integration of knowledge management, decision support, artificial intelligence and data warehousing'. *Decision Support Systems*.
13. Paulraj Ponniah: Data Warehousing Fundamentals.
14. Pieter Adriaans and Dolf Zanting: Data Mining.
15. S. Nagabhushana: Data Mining OLAP and Data Mining.
16. Sam Anahory and Dennis Murray: Data Warehousing in the Real World.
17. Subramanian, A., Smith, L. D., Nelson, A. C., Campbell, J. F. and Bird, D. A.: 'Strategic Planning for Data Warehousing'. *Information & Management*.
18. Summer, E. and Ali, D. L.: 'A Practical Guide for Implementing Data Warehousing'. *Computers and Industrial Engineering*.
19. Surajit Choudhary: Data Warehousing and OLAP technology.
20. Tseng, F. S. C. and Chou, A. Y. H.: 'The concept of document warehousing for multidimensional modelling of textual-based business intelligence'. *Decision Support Systems*.
21. Umeshwar Dayal: An overview of data warehousing and technology.
22. Vassiliadis, P., Bouzeghoub, M. and Quix, C.: 'Towards Quality-Oriented Data Warehouse Usage and Evolution'. *Information Systems*.
23. Wand, Y. and Wang, R.: 'Anchoring Data Quality Dimensions in Ontological Foundations'. *Communications of the ACM*.
24. Waston, H. J., Goodhue, D.L. and Wixom B. H.: 'The benefits of data warehousing: why some organizations realize exceptional payoffs'. *Information & Management*.
25. Watson, H. J., Haley, B.: 'Data warehousing: A framework and survey of current practices'. *Journal of Data Warehousing*.
26. Wixom, B. H. and Waston, H. J.: 'An Empirical Investigation of the Factors affecting Data Warehousing Success'.

WEBSITES

27. http://docs.oracle.com/cd/B10501_01/server.920/a96520/concept.htm
28. http://lambda.uta.edu/cse6331/spring03/papers/dw1.pdf
29. http://research.microsoft.com/pubs/76058/sigrecord.pdf
30. http://system-services.com/dwintro.asp
31. http://www.123helpme.com/data-wharehouse-paper-view.asp?id=164499
32. http://www.1keydata.com/datawarehousing/dimensional.html
33. http://www.carolla.com/wp-dw.htm
34. http://www.cs.sunysb.edu/~cse634/presentations/DataWarehousing-part-1.pdf
35. http://www.peterindia.net/DataWarehousingView.html
36. http://www.peterindia.net/DataWarehousingView.html

A REVIEW OF E-BANKING SERVICES IN INDIAN BANKING INDUSTRY

DR. AVNEET KAUR
ASST. PROFESSOR
KHALSA COLLEGE
CHAWINDADEVI

ABSTRACT

E-banking is the term that signifies and encompasses the entire sphere of technology initiatives that have taken place in the banking industry. E-banking has broken the barriers of branch banking. E-banking involves use of internet for delivery of banking products and services. E-banking is reducing the transaction costs and is winning the trust of customers and roving to be an appropriate model for customer service of commercial banks in India. So the E-banking has a greater role in customer service of commercial banks in India. In the past couple of years ATMs, Internet Banking, M-Banking and Virtual Banking have changed the face of banking services. Customers can send money anywhere in India through E-banking. This makes E-commerce a necessity for the future. In the new millennium, people will be able to do their entire banking over the net without even going to the bank. Within this context this paper has undergone a critical literature review of previous researchers with an objective to examine the impact of E-banking on consumer's behaviour to e-service quality.

KEYWORDS

e-banking, profitability, customer service, information and technology, ATM, debit card, credit card.

INTRODUCTION

The banks have become an essential component of most of the economies as banking services are described as "engine for economic growth" or act as 'conduits towards promoting economic growth". The world is becoming a global market, characterized by economic interdependence. National boundaries have become less significant with the interlinked effect of technology, information flows and foreign investment mobility. The marvelous kinds of innovation in technology and hard line blend of it with information technology made a paradigm shift in the banking industry. Technology increasingly playing a significant role in improving the services in the banking industry of India too. It has also witnessed a tremendous development due to drastic changes that are taking place in the information technology. Electronic banking has emerged from such an innovative development.

Electronic banking is the use of internet as a delivery channel to perform various banking activities for example-transferring money, bills payment, balance inquiry, transaction history, loan applications and insurance services. [Bankers online, 2010]. It provides universal connection from any location worldwide and is universally accessible from any internet enabled computer. Internet offers the cheapest delivery channel for banking products as it allows the entity to reduce their branch networks and minimize personnel requirement. Due to the dawn of E-banking, quality of service has been enhanced as compared to conventional banking services. E-banking plays a pivotal role in providing satisfaction to the customers, reducing the cost of transaction processing and thereby improving the banker-customer relationship.

The progress in E-banking in Indian banking industry is measured through various parameters such as computerization of branches, ATMs (automated teller machines), transactions through retail electronic payment methods etc. Banks today operate in a highly globalized, liberalized, privatized and a competitive environment. In order to survive in this environment banks, have to use IT because it was realized by banks that the internet can be an effective distributive channel. Revolutionary developments in information and communication technology have changed the way how banks deal with their bank customers.

This research is an attempt to review the tremendous progress took place in the field of technology which has reduced the World to a global village and brought as remarkable changes in the banking industry and to review the impact of E-banking on services of commercial banks in India.

REVIEW OF LITERATURE

Various studies have revealed out the impact of E-banking services on banking industry. A customer entered in a bank must get maximum satisfaction from the quality of E-banking services offered by them. Service quality has been found as one of the important factor in making a difference in products and services (Balachandher,et.al 2001).

According to Basel Committee on banking supervision, (1998 and 2003) E-banking is defined as the provision of retail and small value banking products and services through electronic channels. Such products and services can include deposit taking, lending, account management, the provision of financial advice, electronic bill payment and the provision of other electronic payment products and services such as electronic money. The term "electronic banking" or E-banking covers both computer and telephone banking, it refers to use of information and communication technology by banks to provide services and manage customer relationship more quickly and most satisfactorily (Charity-Commission, 2003).

Says V Chandrasekhar, GM (Chief Technology Officer), Bank of Baroda, "IT has changed the way a bank reaches out to its customers. Gone are the days where IT was deployed for automating accounting/back office functions to remove drudgery of employees. It is now massively being deployed for customer interfacing/interaction."

It is an empirically established fact that introduction of technology in banking has a direct positive relationship with profitability. Ceteris paribus, investment in E-banking increase the profit margin of banks by reducing costs and increase in non-interest income, which in turn will lead to rise in Return in Assets and Return on Equity (Sinkney, 1998). The integration of the banking services with e-commerce and emergence of e-cash would positively affect the efficiency scores of the banks (Scott, 1999).

EVOLUTION OF E-BANKING

E-banking came into being in UK and USA in 1920s. It became prominently popular during 1960s through electronic funds transfers and credit cards. The concept of E- banking came into existence in Europe and USA in the beginning of 1980s. It has been estimated that around 40 percent of banking transaction would be done through NET.

E-BANKING IN INDIA

In India E-banking is of fairly recent origin. The traditional model for banking has been through branch banking. Only in the early 1990s there has been start of non-branch banking services. The good old manual systems on which Indian Banking depended upon the centuries seem to have no place today. The credit of launching internet banking in India goes to ICICI Bank. Citibank and HDFC bank followed with internet banking services in 1999. Several initiatives have been taken by the Government of India as well as the Reserve Bank to facilitate the development of E-banking in India. The Government of India enacted the IT act, 2000 with effect from October 17, 2000 which provided legal recognition to electronic transactions and other means of electronic commerce. The Reserve Bank is monitoring and reviewing the legal and other requirements of E-banking on continuous basis to ensure that E-banking would develop on sound lines and E-banking related challenges would not pose a threat to financial stability.

To cope with the pressure of growing competition, Indian commercial banks have adopted several initiatives and E-banking is one of them. The competition has been especially tough for the public sector banks, as the newly established private sector and foreign banks have leaders in the adoption of E-banking. Indian banks offer to their customers following E-banking products and services:

- Automated Teller Machine (ATM),
- Credit Cards,
- Debit Cards,
- Smart Cards,
- Electronic Funds Transfer (EFT) System,
- Real Time Gross Settlement (RTGS)/NEFT,
- National Electronic Clearing Service (NECS),
- Mobile Banking,
- Internet Banking,
- Telephone Banking,
- Door step Banking

The three board facilities that E-banking offers are:

- **CONVENIENCE**- Complete your banking at your convenience in the comfort of your home.
- **NO MORE Qs**-There are no queues at an online bank.
- **24*7 SERVICE**-Bank online services is provided 24 hours a day, 7 days a week and 52 weeks a year.

The main advantages of E-banking are to lower operating cost per unit services for the banks and to offer convenience to customers as they are not required to go to the bank premises and also the customer can easily transfer the funds from one place to another place electronically. E-banking is a technological advancement that has brought about such a change. The banking industry has adopted virtual banking to improve business process, infrastructure, and customer relationships. These changes have had a major impact on the banking business, but more transparently on the customers of online banking. The matrix measures for the improvements added by online banking can be evaluated on comparable levels of service, efficiency and cost satisfaction, for both the provider and consumer of this technology. The numbers of customers are normally not the same as numbers of their accounts, because number of accounts can be linked to the one customer number. The customer will link to the customer number any of those accounts which the customer controls, which may be cheque, savings, loan, credit card and other accounts. Customer numbers will also not be the same as any debit or credit card issued by the financial institution to the customer and ATMs are at your doorstep, therefore the customer can obtain funds at any time from ATM machines. Therefore, in order to survive in this environment banks, have to use IT and the objective of the present paper is to analyze the impact of adopting E-banking services, through the use of ATMs, credit cards and debit cards in the banking industry.

IMPORTANCE OF THE STUDY

This paper is to create awareness about E-banking services and also provide some fruitful suggestions to make this service for effective.

OBJECTIVES

The study has been undertaken with the following specific objectives in view:

- Giving an insight in to the concept of E- banking and inherent benefit accruing from the adoption of E- banking, from the view point of commercial banks.
- To study and analyze the progress made by Scheduled Commercial banks in adoption of E-banking products and services in recent years.

RESEARCH METHODOLOGY

The study is based on secondary data and is analytical in nature. Statistical and mathematical tools such as simple growth rate, percentages and averages are used. Report on trends and progress of Banking in India published by Reserve Bank of India, Mumbai is the main source of secondary data. The parameters of the study are number of Automated Teller Machines and Transactions through Retail Electronic Payments Methods such as Electronic Clearing services (ECS)-debit and credit. To analyze progress made by Indian banking industry in adoption of technology, averages, percentages and simple growth rate is calculated. In this study, simple growth rate is indicated by GR. GR = $Y^t - Y^0 / Y^0 * 100$ where Y^t indicates value of given parameter in current year and Y^0 indicates value of given parameter in base year.

RESULTS AND DISCUSSION

Indian banking has changed terrifically in the past few years. The changes are multiple and at a fast pace in the term of transformation of technology advancement. It has become completely dependent on technology as the service/product channel. Up-gradation of technology, innovation and modernization are the key factors of having excellence in banking sector.

It becomes necessary for a bank to differentiate its products from others. The differentiation can be in terms of specialization, new products, increasing added value by technology convergence. Technology in banking sector is one of the focus areas of banks. The banks in India are using Information Technology (IT) not only to improve their own internal processes but also to increase facilities and services to their customers. Technological innovation not only enables a broader reach for consumer banking and financial services, but also enhances its capacity for continued and inclusive growth. Various innovations are as follows:

1. **Automated Teller Machine (ATM):** ATM is modern electronic machine which allows to customer to withdraw or deposit funds, check account balances, transfer fund, and check statement information, purchasing online products, train tickets reservations, products from shopping mall, donating to charities, claque processing module, adding pre-paid cell phone/mobile phone credit, advertising channels for own or third party products and services, pay premium.

TABLE 1.1: AUTOMATED TELLER MACHINES (ATMS) OF SCHEDULED COMMERCIAL BANKS (as at end March)

Year/Category	On-Site	Growth Rate	Off -site	Growth Rate	Total	Growth Rate	Off site as percentage of total ATMs	On site as percentage of total ATMs
2011	40729	-	33776	-	74505	-	45.4	54.6
2012	47545	16.73	48141	42.53	95686	28.43	50.31	49.69
2013	55760	36.90	58254	72.47	114014	53.03	51.09	48.91
2014	83379	104.71	76676	127.01	160055	114.83	47.91	52.09
2015	89061	118.67	92337	173.39	181398	143.47	49.10	50.90
Average	63294.8		61836.8		125131.6			

Source: Report on Trends and Progress of Banking in India, RBI, Mumbai, Various Issues

Table 1.1 indicates the progress made by ATMs of Scheduled Commercial Banks for the period 2011-2015. While ATMs are an innovative means to provide basic banking services to customers in a much faster and cost-efficient manner, within these; off-site ATMs are particularly more cost-efficient since they operate without the paraphernalia of a bank branch. It has been revealed that the On-site ATMs are more as compared to Off-site ATMs though the number of both has increased in period of five years. In 2013 the per cent of Off-site ATM is much better than On-site ATM but it started declining in 2014 and again showed an increase in 2015. The growth rate has remarkably increased in 2015 in case of both On-site and Off-site ATMs taking the year 2011 as base year. It has been revealed from the study that customers are taking keen interest in E-banking services provided by Scheduled Commercial Banks as their number is increasing year by year.

TABLE 1.2: BANK GROUP/CATEGORY-WISE AUTOMATED TELLER MACHINES (ATMS) OF SCHEDULED COMMERCIAL BANKS (As at end March 2015)

Bank Group/Category	On site ATMs	Per cent of total	Offsite ATMs	Per cent of total	Total Number of ATMs	Per cent of total	On site ATMs as per cent of total ATMs	Offsite ATMs as per cent of total ATMs
1. Public Sector Banks	**69902**	**78.48**	**58909**	**63.80**	**128811**	**71.01**	**54.27**	**45.73**
1.1 Nationalized Banks	47267	53.07	27422	29.70	74689	41.17	63.29	36.71
1.2 SBI Group	22635	25.41	31487	34.10	54122	29.84	41.82	58.18
2. Private Sector Banks	**18897**	**21.22**	**32593**	**35.29**	**51490**	**28.39**	**36.70**	**63.3**
2.1 Old Private Banks	15733	17.67	28397	30.75	44130	24.33	35.65	64.35
2.2 New Private Sector Banks	3164	3.55	4196	4.54	7360	4.06	43	57
3. Foreign Banks	**262**	**.3**	**835**	**.91**	**1097**	**.60**	**23.88**	**76.12**
All Banks	**89061**		**92337**		**181398**		**49.10**	**50.90**

Source: Report on Trends and Progress of Banking in India, RBI, Mumbai, Various Issues

Table 1.2 indicates category-wise ATMs of Scheduled Commercial Banks. The Public sector banks have highest number of ATMs in case of both Onsite and Offsite which is 71.01 percent of total ATMs in the country. In per cent terms ATMs in case of Nationalized Banks is 41.17 percent and 29.84 in case of SBI group. The new private sector banks has major share of ATMs (24.33) as compared to Old private sector banks (1.65). Foreign have 1097 ATMs in 2015 which is just .60 per cent of total ATMs.

2. **Electronic Clearing Cards: -** Now a day's Electronic cash is being used in place of hard cash. Electronic clearing cards such as debit and credit cards. Debit card allows 'anywhere any time accesses' to the customers with their savings or current account. A customer possessing a debit card need not carry cash. Credit card also serves as convenient medium of exchange. It enables a customer to purchase goods or services within prescribed limits for certain authorized retail and service establishments without making immediate cash payments. It is also called plastic money. The most important difference between a credit card and debit card is that while credit card is a post-paid and debit card is pre-paid.

TABLE 1.3: OUTSTANDING NUMBER (IN MILLIONS) OF DEBIT CARDS AND CREDIT CARDS ISSUED BY SCHEDULED COMMERCIAL BANKS

CATEGORY	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Credit Cards	17.67	17.7	19.5	10.61	21.12
Debit Cards	263.80	278.4	331.2	394.45	553.45

Source: Report on Trends and Progress of Banking in India, RBI, Mumbai, Various Issues.

Table 1.3 shows Outstanding number of debit cards and credit cards issued by Scheduled commercial banks as at end March 2015. The number of credit cards has increased from 17.67 million in 2010-2011 to 21.12 in 2014-2015 which show a Growth Rate of 19.52 per cent while in case of debit card the number arose from 263.80 in 2010-2011 to 553.45 in 2014-15. This increase remarked the progress made through the use of debit card in banking industry.

FINDINGS

1. As customers are now technology savvy, therefore, it becomes indispensable to consider the use of technology to react to their continuous needs.
2. The penetration of ATMs in India increased in 2012-13 with the total number of ATMs crossing 1, 00,000 clocking a double growth during the year.
3. This growth was driven primarily by private sector banks with their share in total ATMs picking up rapidly to about 38 per cent.
4. Despite the convenience, high security of E-banking, there are benefits of E-banking like 24 hours a day access, a monthly cost savings and security that match the security of banking in person.
5. Decreased cost due to E-banking came to be most commonly reported reason for increased business growth in all sectors of banking industry. However, this is significantly higher in private sector banks as compared to public sector banks.

RECOMMENDATIONS

1. Banking industry should create awareness among people about E-banking products and services. Customers should be made literate about the use of E-banking products and services.
2. Special arrangements should be made by banks to ensure full security of customer funds. Technical defaults should be avoided by employing well trained and expert technicians in field of computers, so that loss of data can be avoided.
3. Seminars and workshops should be organised especially to those who are ATM or computer illiterate.
4. Government should make huge investments to upgrade infrastructure of Indian banking industry.
5. Special training sessions for enhancing technological knowledge of bank's employees is must.
6. E-banking services should be provided in regional languages to make it in reach of common person.

CONCLUSIONS

The study has revealed that E-banking and hence Information and Communication Technology has impacted positively on customer service and profitability of banks though there are a number of challenges. It is recommended that there should be 24*7 monitoring of the Automatic Teller Machines(ATMs) so that any failure is addressed as soon as possible to guarantee customer retention. It can be concluded that the government should provide adequate regulatory framework that will ensure customer protection and security of transactions; and again to achieve competitive advantage periodic training programmes on ICT should be organised by the banks to ensure that their employees are always abreast with current trends and programs in ICT. Internet facility must be made available at all the branches of the bank across, proper training to customers for using E-banking should be given. Use of technology should be increased substantially on banks to cope with rising volumes and reduce transaction cost and processing time. The IT Act 2000 should be implemented in totally to handle legal issues. E-banking helps in improving the quality of service offered by bank and provide a choice to customers by offering multi service delivery channels. The element of convenience has increased as customers can access his account as per his convenience. Thus these delivery channels have reduced cost, waiting period, and paper work. They have eliminated wastages, uncertainties and they have created positive impact on cost, speed, efficiency and enhanced customer satisfaction.

LIMITATIONS

There are limitations that need to be acknowledged and addressed regarding about the present study. Various E-banking services are available but scope of present study is limited only to use of ATMs, debit cards and credit cards.

SCOPE FOR FUTURE RESEARCH

E-banking in India is gaining momentum at a faster pace but it is a new phenomenon for banks and for Indian banking customer also. It includes a lot of issues that can be considered for various perspectives. This study highlights some of the service quality features that are contributing towards customer loyalty. There is still room for further area of research as how banks should incorporate all these service features in gaining customer loyalty and customer retention. Further research can be o making comparisons of different developed economies banks with Indian banks like American, European banking websites and their E-banking practices with Indian banking websites and its E-banking practices for studying service quality variables that enhance the customer loyalty in banks. The ongoing technological innovations in Indian banking sector o regular basis can always be a good area of further research.

REFERENCES

1. Angur, M.G., Nataraajan, R. and Jahera, J.S(1999), "Service Quality in the banking industry: an assessment in a developing economy," International Journal of Bank Marketing, Vol.17, No.3, pp.116-123.
2. But could not be considered due Reserve Bank of India, Report on Trend and Progress of Banking in India, RBI Mumbai, Various Issues.
3. Carlson J., Furst K., Lang W. W. and Nolle D. E. (2001), "Internet Banking: Market Developments and Regulatory Issues", Manuscript, the Society of Government Economists, Washington D.C.
4. Chaoprasert, C., and Elsey, B. (2004), "Service quality improvement in Thai retail banking and its management implications," ABAC Journal, Vol.24, No.1,pp. 47-66.
5. Claeys, S. and Vennet, R. V. (2004), "Bank Interest Margins in the CEEC: A Comparison with the West", Working Paper, Ghent University.
6. Demirguc-Kunt, A. and Huizinga, H. (2000), "Financial Structure and Bank Profitability", World Bank Policy Research WP 2430.
7. DeYoung, R (2001a), "The Financial Performance of Pure Play Internet Banks", Economic Perspectives, Vol. 25 No. 1, pp. 60-75.
8. DeYoung, R. (2001b), "The Financial Progress of Pure-Play Internet Banks", BIS Papers No 7, November and Huizinga, H. (2000), "Financial Structure and Bank Profitability", World Bank Policy Research WP 2430.
9. DeYoung, R. (2005), "The Performance of Internet-based Business Models: Evidence from the Banking Industry", Journal of Business, Vol. 78 No. 3, pp. 893-947.
10. DeYoung, R. and Rice, T. (2003), "Noninterest Income and Financial Performance and its Reform, Beyond Laissez-faire", Policy Research Working Paper 1171, World Bank.
11. Economic Times, ET Banking Survey 2009, 21 December 2009, p.11.
12. Mishra, A.A. (2009), "A study on Customer Satisfaction in Indian Retail Banking, IUP Journal of Management Research, Vol.8, No.11, pp.45-61.
13. Rajput, N. and Gupta, M (2011), "Impact of IT on Indian Commercial Banking Industry: DEA Analysis," Global Journal of Enterprises Information System, Vol.3 No.1, pp.17-31.
14. Sharma Himani, "Banker's Perspective on E-banking", NJRIM, Vol. 1, No.1, June 2011, pp.71-84.

ASSESSMENT OF TEMPERAMENT, EMOTIONAL STABILITY AND SELF-CONFIDENCE AMONG DEAF AND HARD OF HEARING ADOLESCENT STUDENTS IN VELLORE DISTRICT

K. ELAMATHI
ASST. PROFESSOR
INDIAN COLLEGE OF EDUCATION
VELLORE

ABSTRACT

This study was conducted to know the temperament, emotional stability and self-confidence of deaf and hard of hearing adolescent student in Vellore District. Survey method was adopted for the study. Two hundred and sixty students in the age group of 12 -19 years studying in aided and self-finance schools and ITI in Vellore district were select as sample by using Simples Random Technique. The sample was administered with the modified and validated, 'Dimensions of Temperament Scale developed by Chadha & Chandna (1984), Emotional Stability Scale developed by Gupta & Singh (1985) and Self - Confidence Questionnaire developed by The Inner Coach (April 2009). The statistical techniques employed were mean, SD, t-test, correlation and ANOVA. The obtained results were analyzed accordingly. The results of the study revealed that the temperament of deaf and hard of hearing adolescent students have influenced in their emotional stability and self-confidence. Thus it could be concluded that teachers and parents should provide the healthy atmosphere of deaf and hard of hearing students in their classes and home to achieve their goals and betterment of future development in particular.

KEYWORDS
hearing adolescent students, Vellore.

THE AFFECTS OF DEAFNESS ON ADOLESCENT DEVELOPMENT

Adolescence is a time of rapid physical, emotional, and mental development, which is occasionally complicated by the high school setting, increased responsibilities, and the desire to become an adult. Researchers describe it as; "The period from approximately eleven to eighteen, can be seen as a 'way of life' different from childhood to adulthood. Problems of emancipation, independence, and freedom from the family occupy the early stage, while problems of social role and personal purpose within the wider world occupy the later stage. Over the whole span of adolescence, the developmental task is to integrate earlier elements into a true sense of identity as a separate individual, no longer taking a partial or external view of self." (Schlesinger, 2000, pg.356) The process tests even the "normal" teenager, but what is the process like for someone who can't hear? Deaf children go through the same experiences as hearing children. Does being deaf affect their development, ability to participate in school, or impact their relationship with their parents? The answers to all these questions is a resounding yes, being deaf affects adolescent development, in mainstream settings, which are made more complicated in today's auditory/visual world versus, deaf adolescent development in Deaf settings. "Deaf students face considerable challenges in developing interpersonal communication skills. This presence of an auditory disability means that spoken language is largely inaccessible." (Akamatsu & Musselman, 1999, pg. 305) This does not mean that deaf adolescents are dumb or slow; it only means that their deafness impacts their lives, especially in school, and in ways hearing people probably don't even realize.
The word deaf literally means someone who can't hear. This however is a broad generalized term. "The level of hearing a person has is determined through hearing tests, to discover the amount of decimals of hearing lost at various sound cycles." (Spradley, 1987, pg. 42).

VIEW DEAFNESS

Our culture used to view deafness as a defect in the brain that left you unable to think, and so we used the term deaf and dumb to describe people who couldn't hear or talk. This view is completely unorthodox and there is no scientific research anywhere to prove that deaf people are dumb. Most deaf students are in fact quite smart; the only thing they struggle with is learning how to communicate. "All of the existing research assumes that cognitive development in deaf children follows the same course as that found in hearing children, although the rate of development may differ, most of the differences are based on the fact that learning, comprehension, and cognition all require an understanding of language, and the understand of language is a struggle for some deaf children." (Clark, Marschark & Karchmer, 2001, pg. 130) From this statement it is fair to assume that deaf adolescent's development is affected because of their language barrier in a hearing world.

NEED FOR THE STUDY

In deaf children, visual attention, which is typically used to focus and sustain attention (Ruff & Rothbart, 1996) may play an even more critical role in development of behavior problems because of the loss of auditory input. If children cannot monitor their environment auditorially, they may have to rely on visual monitoring of the world, which places increased demands on visual attention and reduces children's ability to sustain attention (Quittner et al., 2007). Previous studies have consistently found marked deficits in visual attention in this population (Mitchell & Quittner, 1996; Quittner, Smith, Osberger, Mitchell & Katz, 1994; Smith et al., 1998), with associated elevations in behavior problems reported by teachers and parents (Mitchell & Quittner, 1996). Beyond the increased demands on visual attention, these children may also struggle because they do not have the language to help scaffold the internal regulation of attention (Bell, Wolfe & Adkins, 2007). To date, previous studies of visual attention in deaf children have assessed school-age children, providing little information about how early these deficits emerge. Moreover, only one study has examined the relationship between visual attention and behavior problems (Mitchell & Quittner, 1996) and none have examined the broader relations among language, attention, and behavior problems in hearing-impaired children. Hence, keeping the above background in mind and in recognition of these problems, the investigator felt the need in this age of industrialization, competition, stress and tension: and keeping in mind the concept of emotional stability as defined in the literature cited above the present study was undertaken to assess the temperament, emotional stability and self-confidence of deaf and hard of hearing adolescent students in Vellore district. This study is essential to know the present situation.

OPERATIONAL DEFINITIONS

- **TEMPERAMENT**

"Temperament refers to the characteristic phenomena of an individual's nature including his susceptibility to emotional situations, his customary strength mood, and all the peculiarities of fluctuation and intensity of mood, these being phenomena regarded as dependent on constitutional make up and therefore largely hereditary in origin". ***(Allport, 1961).***

- **EMOTIONAL STABILITY**

"Emotional control may impair performances in situations which require flexibility and adaptability on the part of the person or pupil. If the pupils have no or very little emotional control, it may lead to anxiety, inferiority feeling and guild". ***(Frandsen, 1961).***

- **SELF CONFIDENCE**

"The personality pattern is a unified multidimensional structure in which the concept of self is the core or centre of gravity". ***(Breckenridege and Vincent, 1965).*** In to this structure are integrated many patterns of response tendencies, known as 'traits' which are closely related to and influenced by the concept of self. Self-confidence is one such personality trait. The self is a composite of a person's thoughts and feeling, strivings and hopes, fears and fantasies, his view of what he is,

what he has been, what he might become, and his attitude pertaining of his worth. Self-confidence is a positive attitude of oneself towards one's self-concept. It is an attribute of perceived self.

- **DEAF AND HARD OF HEARING**

Defining deafness is not an easy task. Unlike blindness, there is no "legal limit" for someone to be considered deaf ***(Holt, 1994).*** Consequently, there is more than one term to describe a person who has difficulty hearing, and these words may vary in definition. However, there are a few expressions that will be defined here according to their generally agreed-upon definitions. First, the term "deafness" generally refers to partial or total hearing loss, and generally also assumes the inability to hear and understand speech. A second word, "hearing impaired" is simply used to describe a person with any degree of hearing loss. A third phrase, "hard of hearing," refers to a person who experiences hearing loss but is still able to hear and understand speech. ***(Higgins, 1996)***.

- **ADOLESCENT**

"(Of a young person) in the process of developing from a child into an adult"- ***The Oxford Advanced Learner's Dictionary***

OBJECTIVES OF THE STUDY

1. To study the Temperament of deaf and hard of hearing adolescent students.
2. To study the Emotional stability of deaf and hard of hearing adolescent students.
3. To study the Self – Confidence of deaf and hard of hearing adolescent students.
4. To draw the relationship among temperament, emotional stability and self – confidence of deaf and hard of hearing adolescent students.
5. To study whether there is any significant difference in Temperament of deaf and hard of hearing adolescent students belonging to different groups based on
   i. Gender
   ii. Type of institution
   iii. Level of school
6. To study whether there is any significant difference in Emotional stability of deaf and hard of hearing adolescent students belonging to different groups based on
   i. Gender
   ii. Type of institution
   iii. Level of school
7. To study whether there is any significant difference in Self-confidence of deaf and hard of hearing adolescent students belonging to different groups based on
   i. Gender
   ii. Type of institution
   iii. Level of school

HYPOTHESES

1. The Temperament of deaf and hard of hearing adolescent students will be moderate.
2. The Emotional stability of deaf and hard of hearing adolescent students will be moderate.
3. The Self-confidence of deaf and hard of hearing adolescent students will be high.
4. There is no significant difference between male and female deaf and hard of hearing students in their Temperament, Emotional stability and Self-confidence.
5. There is no significant difference between deaf and hard of hearing adolescent students of Aided and Self –Finance institutions in their Temperament, Emotional stability and Self-confidence.
6. There is no significant difference among deaf and hard of hearing students belonging to Middle schools, High schools, Higher Secondary Schools and ITI in their Temperament, Emotional stability and Self-confidence.
7. There will be linear relationship among Temperament, Emotional stability and Self-confidence of deaf and hard of hearing adolescent students.

METHODOLOGY

In order to achieve the objectives of the study, the survey method was used.

POPULATION AND SAMPLE DESCRIPTION AND SELECTION

POPULATION

The target population of the present study was deaf and hard of hearing adolescent students studying in middle schools, high schools, higher secondary schools and ITI in Vellore district.

SAMPLE CHARACTERISTICS AND SELECTION

Keeping in view, the aim of the study, 260 deaf and hard of hearing adolescent students from middle schools, high schools, higher secondary schools and ITI students were randomly selected from aided and self-finance institution in Vellore district.

SELECTION AREA

Selection of area for research is very important. The selected area should be convenient, comfortable and have an enough number of samples. The investigator selected two aided and one self-finance deaf and hard of hearing schools and one ITI around of **Vellore district** for the study. The sample selected for the study consists of both male and female deaf and hard of hearing adolescent students belonging to middle schools, high schools, higher secondary schools and ITI.

TOOLS USED FOR THE STUDY

The data are necessary for carrying our research investigation if must be collected with the special instrument or devices. The successful outcome research is mainly depending upon the proper selection of the research tool. So the investigator used the following tools:

1. Dimensions of Temperament Scale (Chadha & Chandna, 1984).
2. Emotional Stability Scale (Gupta & Singh, 1985).
3. Self - Confidence Questionnaire (The Inner Coach, April 2009).

ANALYSIS OF DATA

Data related to the variables were collected by using standard tools. For the meaningful interpretation of the study, the collected data are processed and analyzed using the following:

Descriptive Analysis

- Measures of Central Tendency (Mean)
- Measures of Dispersion (SD)
- Measures of relationship (Correlation)

Inferential Analysis

- t-Test
- One-way ANOVA

Hypothesis 1: The Temperament of deaf and hard of hearing adolescent students will be moderate.

TABLE 1: COMPARISON OF MEAN AND STANDARD DEVIATION OF TEMPERAMENT OF DEAF AND HARD OF HEARING ADOLESCENT STUDENTS

Variable	Maximum Score	Mean	S.D.	N
Temperament	36	21.85	3.465	260

The Mean and Standard Deviation of Temperament score of deaf and hard of hearing adolescent students are presented in the table. The maximum possible score in the Temperament scales is 36 and the obtained mean score is about 61% showing the students have moderate Temperament. Hence the hypothesis is accepted.

Hypothesis 2: The Emotional stability of deaf and hard of hearing adolescent students will be moderate.

TABLE 2: COMPARISON OF MEAN AND STANDARD DEVIATION OF EMOTIONAL STABILITY OF DEAF AND HARD OF HEARING ADOLESCENT STUDENTS

Variable	Maximum Score	Mean	S.D.	N
Emotional stability	15	9.69	2.096	260

The Mean and Standard Deviation of Emotional stability score of deaf and hard of hearing adolescent students are presented in the table. The maximum possible score in the Emotional stability is 15 and the obtained mean score is about 65% showing the students have moderate Emotional stability. Hence the hypothesis is accepted.

Hypothesis 3: The Self-Confidence of deaf and hard of hearing adolescent students will be high.

TABLE 3: COMPARISON OF MEAN AND STANDARD DEVIATION OF SELF-CONFIDENCE OF DEAF AND HARD OF HEARING ADOLESCENT STUDENTS

Variable	Maximum Score	Mean	S.D.	N
Self-confidence	30	23.62	4.348	260

The Mean and Standard Deviation of Self-Confidence score of and hard of hearing adolescent students are presented in the table. The maximum possible score in the Self-Confidence is 15 and the obtained mean score is about 79% showing the students have high Self-Confidence. Hence the hypothesis is accepted.

Hypothesis 4: There is no significant difference between male and female deaf and hard of hearing students in their Temperament, Emotional stability and Self-confidence.

TABLE 4: SIGNIFICANCE OF MEAN DIFFERENCE BETWEEN MALE AND FEMALE DEAF AND HARD OF HEARING STUDENTS IN THEIR TEMPERAMENT

Variable	Gender	N	Mean	S.D.	CR-value	Level of significance
Temperament	Male	120	21.99	3.606	0.593	p > 0.05
	Female	140	21.74	3.349		

The CR value as indicated by the table is not significant and hence it can be inferred that male and female deaf and hard of hearing adolescent students do not differ significantly in their temperament.

TABLE 5: SIGNIFICANCE OF MEAN DIFFERENCE BETWEEN MALE AND FEMALE DEAF AND HARD OF HEARING STUDENTS IN THEIR EMOTIONAL STABILITY

Variable	Gender	N	Mean	S.D.	CR-value	Level of significance
Emotional stability	Male	120	9.60	2.331	0.629	p > 0.05
	Female	140	9.76	1.876		

The CR value as indicated by the table is not significant and hence it can be inferred that male and female deaf and hard of hearing adolescent students do not differ significantly in their emotional stability.

TABLE 6: SIGNIFICANCE OF MEAN DIFFERENCE BETWEEN MALE AND FEMALE DEAF AND HARD OF HEARING STUDENTS IN THEIR SELF-CONFIDENCE

Variable	Gender	N	Mean	S.D.	CR-value	Level of significance
Self -Confidence	Male	120	22.90	5.020	2.494	p < 0.05
	Female	140	24.24	3.582		

From the above table the CR value is found to be 2.494, which is significant at 0.05 level. This indicates that there is a significant difference in Self-confidence between male and female deaf and hard of hearing adolescent students.

It is inferred further that the female deaf and hard of hearing adolescent students have a greater mean self-confidence score than male deaf and hard of hearing adolescent students.

Hence the above stated hypothesis is accepted with respect to temperament and emotional stability and not accepted with respect to self-confidence.

Hypothesis 5: There is no significant difference between deaf and hard of hearing adolescent students of Aided and Self –Finance institutions in their Temperament, Emotional stability and Self-confidence.

TABLE 7: SIGNIFICANCE OF MEAN DIFFERENCE BETWEEN AIDED AND SELF-FINANCE INSTITUTIONS DEAF AND HARD OF HEARING STUDENTS IN THEIR TEMPERAMENT

Dimension	Gender	N	Mean	S.D.	CR-value	Level of significance
Temperament	Aided	118	21.47	3.361	1.614	p > 0.05
	Self-Finance	142	22.17	3.531		

The CR value as indicated by the table is not significant and hence it can be inferred that aided and self-finance institutions deaf and hard of hearing adolescent students do not differ significantly in their temperament.

TABLE 8: SIGNIFICANCE OF MEAN DIFFERENCE BETWEEN AIDED AND SELF-FINANCE INSTITUTION DEAF AND HARD OF HEARING STUDENTS IN THEIR EMOTIONAL STABILITY

Variable	Gender	N	Mean	S.D.	CR-value	Level of significance
Emotional stability	Aided	118	9.40	1.882	2.047	p < 0.05
	Self-Finance	142	10.93	2.237		

From the above table the CR value is found to be 2.047, which is significant at 0.05 level. This indicates that there is a significant difference in emotional stability between aided and self-finance institutions deaf and hard of hearing adolescent students.

It is inferred further that the deaf and hard of hearing adolescent students belonging to self-finance institutions have a greater mean emotional stability scores than those are in aided institutions.

TABLE 9: SIGNIFICANCE OF MEAN DIFFERENCE BETWEEN AIDED AND SELF-FINANCE INSTITUTIONS DEAF AND HARD OF HEARING STUDENTS IN THEIR SELF-CONFIDENCE

Variable	Gender	N	Mean	S.D.	CR-value	Level of significance
Self –Confidence	Aided	118	23.89	3.651	0.914	p > 0.05
	Self-Finance	142	23.39	4.854		

The CR value as indicated by the table is not significant and hence it can be inferred that aided and self-finance institutions deaf and hard of hearing adolescent students do not differ significantly in their self-confidence.

Hence the above stated hypothesis is accepted with respect to temperament and self-confidence and not accepted with respect to emotional stability.

Hypothesis 6: There is no significant difference among deaf and hard of hearing students belonging to Middle schools, High schools, Higher Secondary Schools and ITI in their Temperament, Emotional stability and Self-confidence.

TABLE-10: ANALYSIS OF VARIANCE OF TEMPERAMENT SCORES AMONG DEAF AND HARD OF HEARING ADOLESCENT STUDENTS BELONGING TO MIDDLE, HIGH AND HIGHER SECONDARY SCHOOLS AND ITI INSTITUTION

Source of variance	df	Sum of Squares	Mean square	F	Level of Significance
Between groups	3	273.873	91.291	8.239	p < 0.01
Within groups	256	2836.573	11.080		
Total	259	3110.446			

It can be seen from the above table, that 'F' value is significant at 0.01 level. This shows that there is a significant difference among the mean Temperament scores of deaf and hard of hearing students belonging to middle, high, higher secondary schools and ITI institution.

TABLE 11: ANALYSIS OF VARIANCE OF EMOTIONAL STABILITY SCORES AMONG DEAF AND HARD OF HEARING ADOLESCENT STUDENTS BELONGING TO MIDDLE, HIGH AND HIGHER SECONDARY SCHOOLS AND ITI INSTITUTION

Source of variance	df	Sum of Squares	Mean square	F	Level of Significance
Between groups	3	141.839	47.280	12.153	p < 0.01
Within groups	256	995.927	3.890		
Total	259	1137.765			

It can be seen from the above table, that 'F' value is significant at 0.01 level. This shows that there is a significant difference among the mean emotional stability scores of deaf and hard of hearing students belonging to middle, high, higher secondary schools and ITI institution.

TABLE 12: ANALYSIS OF VARIANCE OF SELF-CONFIDENCE SCORES AMONG DEAF AND HARD OF HEARING ADOLESCENT STUDENTS BELONGING TO MIDDLE, HIGH, AND HIGHER SECONDARY SCHOOLS AND ITI INSTITUTION

Source of variance	df	Sum of Squares	Mean square	F	Level of Significance
Between groups	3	30.548	10.183	0.536	p > 0.01
Within groups	256	4866.756	19.011		
Total	259	4897.304			

It is seen from the above table, that 'F' value is not significant. This shows that there is no significant difference among the mean self-confidence scores of deaf and hard of hearing students belonging to middle, high, higher secondary schools and ITI institution.

Hence the above stated hypothesis is accepted with respect to temperament and emotional stability and not accepted with respect to self-confidence.

The significant 'F' ratio thus obtained comparing the different type of institution necessitated further analysis using mean difference. Hence the vast difference paved way for the computation of critical ratio between different types of institution which is presented in the succeeding table.

TABLE 13 (A): SUMMARY OF SIGNIFICANCE OF MEAN DIFFERENCE AMONG DEAF AND HARD OF HEARING ADOLESCENT STUDENTS BELONGING TO MIDDLE, HIGH AND HIGHER SECONDARY SCHOOLS AND ITI INSTITUTION IN THEIR TEMPERAMENT

Variable	Levels of school	N	Mean	S.D.	CR-value	Level of significance
Temperament	Middle school	99	20.64	3.300	2.641	p < 0.01
	High school	64	22.09	3.650		
	Middle school	99	20.64	3.300	3.609	p < 0.01
	Higher secondary school	47	22.62	2.617		
	Middle school	99	20.64	3.300	4.436	p < 0.01
	ITI	50	23.24	3.543		

From the above table it is clear that the CR value of Middle, High, and Higher secondary schools and ITI institution are found to be significant at 0.01 level. This shown that there is a significant difference in Temperament between the above mentioned combinations of schools.

It is inferred further that the ITI institution deaf and hard of hearing adolescent students have a greater mean Temperament scores, followed by Higher secondary schools deaf and hard of hearing adolescent students, than by High schools deaf and hard of hearing adolescent students, finally Middle schools deaf and hard of hearing adolescent students have less Temperament scores.

TABLE 13 (B): SUMMARY OF SIGNIFICANCE OF MEAN DIFFERENCE AMONG DEAF AND HARD OF HEARING ADOLESCENT STUDENTS BELONGING TO HIGH, HIGHER SECONDARY SCHOOLS AND ITI INSTITUTION IN THEIR TEMPERAMENT

Variable	Levels of school	N	Mean	S.D.	CR-value	Level of significance
Temperament	High school	64	22.09	3.650	0.837	p > 0.05
	Higher secondary school	47	22.62	2.617		
	High school	64	22.09	3.650	1.685	p > 0.05
	ITI	50	23.24	3.543		

It is seen from the above table that the CR value of high, higher secondary schools and ITI institution are found to be not significant. This shows that there is no significant difference in temperament between the above mentioned combinations of schools and ITI institution deaf and hard of hearing adolescent students.

TABLE 13 (C): SUMMARY OF SIGNIFICANCE OF MEAN DIFFERENCE AMONG DEAF AND HARD OF HEARING ADOLESCENT STUDENTS BELONGING TO HIGHER SECONDARY SCHOOLS AND ITI INSTITUTION IN THEIR TEMPERAMENT

Variable	Levels of school	N	Mean	S.D.	CR-value	Level of significance
Temperament	Higher secondary school	47	22.62	2.617	0.980	p > 0.05
	ITI	50	23.24	3.543		

The CR value as indicated by the table is not significant and hence it can be inferred that higher secondary schools and ITI institution deaf and hard of hearing adolescent students do not differ significantly in their temperament.

TABLE 13 (D): SUMMARY OF SIGNIFICANCE OF MEAN DIFFERENCE AMONG DEAF AND HARD OF HEARING ADOLESCENT STUDENTS BELONGING TO MIDDLE, HIGH AND HIGHER SECONDARY SCHOOLS AND ITI INSTITUTION IN THEIR EMOTIONAL STABILITY

Variable	Levels of school	N	Mean	S.D.	CR-value	Level of significance
Emotional stability	Middle school	99	8.93	2.135	2.548	$p < 0.05$
	High school	64	9.73	1.683		
	Middle school	99	8.93	2.135	2.445	$p < 0.05$
	Higher secondary school	47	9.85	2.116		
	Middle school	99	8.93	2.135	5.795	$p < 0.01$
	ITI	50	10.98	1.835		

From the above table it is clear that the CR value of Middle, High, and Higher secondary schools and ITI institution are found to be significant at 0.01 and 0.05 level. This shown that there is a significant difference in Emotional stability between the above mentioned combinations of schools.

It is inferred further that the ITI institution deaf and hard of hearing adolescent students have a greater mean Emotional stability scores, followed by Higher secondary schools deaf and hard of hearing adolescent students, than by High schools deaf and hard of hearing adolescent students, finally Middle schools deaf and hard of hearing adolescent students have less Emotional stability scores.

TABLE 13 (E): SIGNIFICANCE OF MEAN DIFFERENCE AMONG DEAF AND HARD OF HEARING ADOLESCENT STUDENTS BELONGING TO HIGH AND HIGHER SECONDARY SCHOOLS IN THEIR EMOTIONAL STABILITY

Variable	Levels of school	N	Mean	S.D.	CR-value	Level of significance
Emotional stability	High school	64	9.73	1.683	0.323	$p > 0.05$
	Higher secondary school	47	9.85	2.116		

The CR value as indicated by the table is not significant and hence it can be inferred that the high schools and higher secondary schools deaf and hard of hearing adolescent students do not differ significantly in their emotional stability.

TABLE 13 (F): SIGNIFICANCE OF MEAN DIFFERENCE AMONG DEAF AND HARD OF HEARING ADOLESCENT STUDENTS BELONGING TO HIGH SCHOOLS AND ITI INSTITUTION IN THEIR EMOTIONAL STABILITY

Variable	Levels of school	N	Mean	S.D.	CR-value	Level of significance
Emotional stability	High school	64	9.73	1.683	3.769	$p < 0.01$
	ITI	50	10.98	1.835		

From the above table the CR value found to be 3.769, which is significant at 0.01 level. This indicates that there is a significant difference in Emotional stability between High schools and ITI institution deaf and hard of hearing adolescent students.

It is inferred further that the ITI institution deaf and hard of hearing adolescent students have a greater mean emotional stability scores than High schools deaf and hard of hearing adolescent students.

TABLE 13 (G): SUMMARY OF SIGNIFICANCE OF MEAN DIFFERENCE AMONG DEAF AND HARD OF HEARING ADOLESCENT STUDENTS BELONGING TO HIGHER SECONDARY SCHOOLS AND ITI INSTITUTION IN THEIR EMOTIONAL STABILITY

Variable	Levels of school	N	Mean	S.D.	CR-value	Level of significance
Emotional stability	Higher secondary school	47	9.85	2.116	2.812	$p < 0.01$
	ITI	50	10.98	1.835		

From the above table the CR value found to be 2.812, which is significant at 0.01 level. This indicates that there is a significant difference in Emotional stability between Higher secondary schools and ITI institution deaf and hard of hearing adolescent students.

It is inferred further that the ITI institution deaf and hard of hearing adolescent students have a greater mean emotional stability scores than Higher secondary schools deaf and hard of hearing adolescent students.

TABLE 14: ANALYSIS OF CORRELATION BETWEEN THE SELECTED VARIABLES OF DEAF AND HARD OF HEARING ADOLESCENT STUDENTS

	Variables	Temperament	Emotional stability	Self-confidence
1.	Temperament	1	0.168**	0.134*
2.	Emotional stability	X	1	0.118*
3.	Self-confidence	X	X	1

** Significance at 0.01, level.

* Significance at 0.05, level.

In the above table all variables selected for the present study namely Temperament, Emotional stability and Self-confidence are found to correlate significantly and positively among themselves.

FINDINGS DRAWN FROM THE STUDY

- Temperament of deaf and hard of hearing students was moderate.
- Emotional stability of deaf and hard of hearing students was moderate.
- Self-confidence of deaf and hard of hearing students was high.
- Male and Female deaf and hard of hearing adolescent students do not differ significantly in their temperament.
- Male and Female deaf and hard of hearing adolescent students do not differ significantly in their emotional stability
- There is a significant difference in Self-Confidence between male and female deaf and hard of hearing adolescent students.
- The female deaf and hard of hearing adolescent students have a greater mean self-confidence score than male deaf and hard of hearing adolescent students.
- Aided and self-finance institutions deaf and hard of hearing adolescent students do not differ significantly in their temperament.
- There is significant difference in Emotional stability between Aided and Self-Finance management deaf and hard of hearing adolescent students.
- The self-finance institutions deaf and hard of hearing adolescent students have a greater mean emotional stability scores than aided institutions deaf and hard of hearing adolescent students.
- Aided and self-finance institutions deaf and hard of hearing adolescent students do not differ significantly in their self-confidence.
- There is a significant difference among the mean Temperament scores of deaf and hard of hearing students belonging to middle, high, higher secondary schools and ITI institution.
- The ITI institution deaf and hard of hearing adolescent students have a greater mean Temperament scores, followed by Higher secondary schools deaf and hard of hearing adolescent students, than by High schools deaf and hard of hearing adolescent students, finally Middle schools deaf and hard of hearing adolescent students have less Temperament scores.
- There is no significant difference in temperament scores among high, higher secondary schools and ITI institution deaf and hard of hearing adolescent students.

- There is no significant difference between higher secondary schools and ITI institution deaf and hard of hearing adolescent students in their temperament.
- There is a significant difference among the mean emotional stability scores of deaf and hard of hearing students belonging to middle, high, higher secondary schools and ITI institution.
- The ITI institution deaf and hard of hearing adolescent students have a greater mean Emotional stability scores, followed by Higher secondary schools deaf and hard of hearing adolescent students, than by High schools deaf and hard of hearing adolescent students, finally Middle schools deaf and hard of hearing adolescent students have less Emotional stability scores.
- The high schools and higher secondary schools deaf and hard of hearing adolescent students do not differ significantly in their emotional stability.
- There is a significant difference in Emotional stability between High schools and ITI institution deaf and hard of hearing adolescent students.
- The ITI institution deaf and hard of hearing adolescent students have a greater mean emotional stability scores than High schools deaf and hard of hearing adolescent students.
- There is a significant difference in Emotional stability between Higher secondary schools and ITI institution deaf and hard of hearing adolescent students.
- It is inferred further that the ITI institution deaf and hard of hearing adolescent students have a greater mean emotional stability scores than Higher secondary schools deaf and hard of hearing adolescent students.
- There is no significant difference among the mean self-confidence scores of deaf and hard of hearing students belonging to middle, high, higher secondary schools and ITI institution.

EDUCATIONAL IMPLICATIONS

This study was an attempt made by the investigator to bring out the ground realities related to deaf and hard of hearing adolescent students in their temperament, emotional stability and self-confidence.

Every deaf and hard of hearing schools should improve their curricular and co-curricular activities for their future development. This study can further help to the special teachers and family members to identify the ways and methods to improve their temperament, emotional stability and self-confidence as follows:

The school should be providing a necessitated curriculum which should include the motor skills as well as social skills for deaf and hard of hearing students then only they will get self-confidence and overcome from the barriers facing their life.

In home, try to develop the deaf child's disability by performing well in school and at home. The parents however, who may be consumed by trying to provide special care for the deaf child. Then only the deaf and hard of hearing student's educational attainment will be increased.

The school as well as the home should be providing a good atmosphere for deaf and hard of hearing adolescent students then they will succeed in their future life and stand by their own legs.

REFERENCES

1. Bala, Ranjini. (2006). *Education Research.* New Delhi: Alfa Publications.
2. Best, John, W. & Kahn, James, V. (2005). *Research in Education.* (9th Ed). New Delhi: prentice- Hall of India Limited.
3. Bhatnagar, R.P. (2005). *Readings in Methodology of Research in Education.* Meerut: Surya Publication.
4. Chaube, S.P (2006). *History and problems of Indian Education*. Agra: Vinod pustak Mandir.
5. Cresewell, John W. (2009). *Research Design* (3rd Ed.) New Delhi: Sage Publications India Pvt. Ltd.
6. Fink, Arlene. (2008). *Practicing Research.* New Delhi: Sage Publications India Pvt. Ltd.
7. Johnson, Burke. & Christenesen, Larry. (2008). *Educational Research* (3rd Ed.) New Delhi: Sage Publications India Pvt.Ltd.
8. Khanzode, V.V. (2004). *Research Methodology*. New Delhi: Alfa Publishing Corporation.
9. Mangal, S.K. (2014). *Advanced Educational Psychology* (2nd edition). Delhi: PHI Learning Private Limited.
10. Mishra, R.C. (2005). *Exploring Educational Research*. New Delhi: Alfa Publications.
11. Sankhala, D.P. (2007). *Research Methodology in Education.* New Delhi: Adhyayan Publishers & Distributors.
12. Sharma, Ritu. (2007). *Education Research and Statistics*. New Delhi: Alfa Publications.

WEBSITES

13. http://lin.ca/sites/default/files/attachments/sp0107%2814%29.pdf
14. http://medind.nic.in/icg/t10/i1/icgt10i1p37.pdf
15. http://psych.colorado.edu/~colunga/P4684/temperament.pdf
16. http://psychology.wikia.com/wiki/Emotional_stability
17. http://webspace.ship.edu/cgboer/eysenck.html
18. http://www.ask.com/world-view/definition-emotional-stability-791b3f300722b952#full-answer
19. http://www.bing.com
20. http://www.encyclopedia.com/topic/temperament.aspx
21. http://www.eric.com
22. http://www.google.com
23. http://www.nap.edu/openbook.php?record_id=2303&page=173
24. http://www.ncbi.nlm.nih.gov/pmc/articles/
25. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3105556/
26. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4355008/
27. http://www.nchearingloss.org/dumb.htm
28. http://www.questia.com
29. http://www.yahoo.com
30. https://mazdivoire.wordpress.com/2010/01/20/emotional-stability/
31. www.kolvinpsych.net/.../speech-retarded-and-deaf-children-part11.pdf
32. www.ncbi.nlm.nih.gov › NCBI › Literature › PubMed Central (PMC)

CONVERGENCE OF IFRS

SHAILAJA D.KELSHIKAR
ASST. PROFESSOR
SMT. M. P. PATEL COLLEGE OF COMMERCE & CPC
KADI

DR. MANOJ D SHAH
ASSOCIATE PROFESSOR
DR. BABASAHEB AMBEDKAR UNIVERSITY
AHMEDABAD

ABSTRACT

Recent years have seen major changes in financial reporting worldwide. The major change which is observed is the continuing adoption of IFRS worldwide. India, being an upcoming economy in the world, too, decided to converge to International Financial Reporting Standards (IFRS). While regulators, standard setters and law makers sit together to rollout the road map for implementation of IFRS in India, a wide section of the industry is already debating about the impact that they are going to have on transitioning to IFRS. The author explores here in this paper the impact of adoption of IFRS, challenges that will come up and its adoption procedure in India. It also discusses the problems faced by the stakeholders in the process of adoption of IFRS in India. Paper concludes with the ways through which these problems can be addressed.

KEYWORDS
IFRS, convergence, Indian GAAP, stakeholders.

INTRODUCTION

In the near past, the world economy has witnessed financial crisis and that made us remember the downturn of 1920s. Stock markets which were considered as the indicators of financial health of any economy failed to predict what will be the future scenario accurately. It was difficult to justify the behavior of the stock market rationally. Globalization of business environment made companies to list on stock exchange worldwide. And as a result the need for consistent and uniform reporting standard worldwide was needed. International Financial Reporting Standards fulfills this need by creating comparable, reliable, and transparent financial statements. The adoption of IFRS has facilitated the raising of capital from cross boundaries economy, trade and better corporate governance practices. Thus, an acceptance of International Financial Reporting Standards is gaining thrust across the globe. The scope of the study is confined to India and the objective of the paper is to highlight the implications of adopting IFRS, challenges and suggestions to overcome such challenges.

IFRS – MEANING

"A single set of high quality, understandable and enforceable global accounting standards that require high quality, transparent and comparable information in financial statements and other financial reporting to help participants in the world's capital markets and other users make economic decisions"[1]
International Financial Reporting Standards (IFRS) is a set of accounting standards developed by an independent, not-for-profit organization called the International Accounting Standards Board (IASB).
IFRS refers to International Financial Reporting Standards which are adopted while preparing the balance sheet and profitability statements of the company and are developed by International Accounting Standard Board. These are already been accepted in more than hundred countries and soon be across globe.
At present, Accounting Standards Board (ASB) formulates and issues accounting standards in India which are more or less in line with IFRS except for a few instances where departure is necessary to comply with the legal, regulatory and economic environment. Council of the Institute of Chartered Accountants of India (ICAI) opined in May 2006 that adopting IFRS was considered and supported by the ASB. IFRS task force was set up to provide a road map for convergence and it decided to converge with IFRS from the accounting period commencing on or after 1 April 2011. In India, Ministry of Corporate Affairs carried out the process of convergence of Indian Accounting Standards with IFRS after a wide range of consultative process with all the stakeholders in pursuance of G-20 commitment and as result thirty-five Indian Accounting Standards converged with International Financial Reporting Standards (henceforth called IND AS).

WHAT DOES CONVERGENCE MEAN?

Adoption of IFRS and convergence of IFRS are two different things. In simple words, convergence of IFRS means that India would not be applying the IFRS as issued by international body but would try to get its own accounting standards in sync with the international financial reporting standards. These synced Indian accounting standards are known as Ind-AS.

DIFFERENCE BETWEEN ADOPTION AND CONVERGENCE

Adoption of IFRS means that the country applying IFRS would be implementing IFRS in the same manner as issued by the International Accounting Standard Board and would be 100% compliant with the guidelines issued by IASB.
On the other hand, convergence means that the Accounting Standard Board of the country applying IFRS would work together with IASB to develop high quality compatible accounting standards over time.

MEANING OF IND-AS

Indian Accounting Standards (abbreviated as **Ind** AS) are a set of accounting standards notified by the Ministry of Corporate Affairs which are converged with International Financial Reporting Standards (IFRS).
35 Indian Accounting Standards converged with IFRS henceforth Ind-AS with effect from 1st April, 2011. Indian Accounting Standards (Ind-AS) are placed b y Ministry of Corporate Affairs.
Various categories of companies are required to carry out the convergence of Indian Accounting Standards with IFRS with effect from 1 April' 2011 Following are the deadlines for companies other than banking, insurance and non banking financial companies:

[1] (S.Yadav, 2012)

Phase	Companies Covered	Opening Balance Sheet	First Financial Statement
Phase - I	Companies that are part of NSE – Nifty 50 Index	1st April, 2011	31st Mar, 2012
	Companies that are part of BSE – Sensex 30 Index		
	Companies that have shares or other securities listed in overseas stock exchanges		
	Listed and unlisted companies with net worth in excess of 1000 crores		
Phase - II	Listed and unlisted companies with networth in excess of Rs. 500 crores but not exceeding Rs. 1000 crores	1st April, 2013	31st Mar, 2014
Phase -III	Listed entities with networth of Rs.500 crores or less	1st April, 2014	31st Mar, 2015

Source: *The road to IFRS in India: A practical guide to IFRS 1 and first-time adoption by Grant Thornton*

Following are the deadlines for Insurance, Banking and Non Banking Financial Companies

Class of Companies	Criteria for Phased Implementation	Opening Balance Sheet	First Financial Statement
Insurance Companies	All insurance companies	1st April, 2012	31st Mar, 2013
Banking Companies	All Scheduled Commercial Banks	1st April, 2013	31st Mar, 2014
	Urban Co-operative Banks with networth in excess of 300 crores	1st April, 2013	31st Mar, 2014
	Urban Co-operative Banks with networth in excess of 200 crores but not exceeding 200 crores	1st April, 2014	31st Mar, 2015
Non Banking Financial Companies (NBFC)	NBFC that are part of NSE – Nifty 50 index	1st April, 2013	31st Mar, 2014
	NBFC that are part of BSE – Sensex 30 index		
	Listed and non listed NBFCs with networth in excess of Rs.1000 crores		
	All listed NBFCs that do not fall into the above categories	1st April, 2014	31st Mar, 2015
	Unlisted NBFCs that do not fall into the above categories and which have a networth in excess of Rs.500 crores	1st April, 2014	31st Mar, 2015

LITERATURE REVIEW

(Shah, 2014) International Financial Reporting Standards (IFRS) are a set of international accounting standards stating how particular types of transactions and other events should be reported in financial statements. IFRS are standards, interpretations and the framework for the preparation and presentation of financial statements. IFRS are issued by the International Accounting Standards Board (IASB) are increasingly being recognized as the Global Financial Reporting Standards. Convergence with IFRS has gained momentum in recent years all over the World. India being an important emerging global economy, the Government of India has committed to convergence of Indian Accounting Standards with IFRS from April 1, 2011. This paper discusses the IFRS adoption procedure in India, the utility for India in adopting IFRS, the problems and challenges faced on the way of IFRS convergence in Indian firm. Further the paper advises some Recommendations and Measures for IFRS implementation in India.

(Vinayagamoorthy) It is well known that companies all over the world have become more and more internationally oriented during last few decades. They create fusion, make investment, conduct trade and co-operate over country borders. International Financial Reporting Standards (IFRS) is becoming the global language of business with over 40% of the world having moved to IFRS in the past few years. By 2016, it is expected that all companies in major markets will be using IFRS. The globalization creates an increased need for communication in the terms of language, awareness of culture differences and domestic customs. Moreover, the financial communication such as accounting and financial results is just as important for business leaders and employees to master. Hence Proponents of International Financial Reporting Standards (IFRS) claim that mandating a uniform set of accounting standards improves financial statement comparability that in turn attracts greater cross-border investment.

(Kathiria) India is developing country and Small and medium sizes enterprises (SMEs) play vital role in economy of India, as it most support in employment aspect, GDP aspect and so on. But right now the phenomenon is changed each and every company want to go globally for more growth so there is required equality in accounting aspect to compare the real condition of the company in the global market for both company as well as external parties like investors, government and others. So IFRS play important role to make uniformity in accounting aspect at global level but still it is under study to prepare final standard for the SMEs. If any country wants to implement IFRS effectively then most three aspect considered people, process and technology as it is affected most and also required deep knowledge and time and initial implementation cost for SME, but in India near around 150000 population having knowledge regarding this aspect so it is very difficult for the Indian SMEs to adopt the IFRS. Generally, company which are working at national level then there is no need to maintain the records as per the IFRS so they will be denied to adopt the IFRS as it increases the cost and also Indian legislation expected some difference from it.

(**KUMAR, 2014**) Globalization has laid down a way for all the countries to adopt a single set of accounting standards. Recent years have seen major changes in financial reporting worldwide under which the most obvious is the continuing adoption of IFRS worldwide. More than 100 countries have converged or recognized the police of convergence with the IFRS. IFRS are the globally accepted accounting standards and interpretations adopted by the IASB. An upcoming economy on world economic map, India, too, decided to converge to International Financial Reporting Standards (IFRS). In India, ICAI has decided to adopt the IFRS by April 2011. This paper discusses the IFRS adoption procedure in India and the utility for India in adopting IFRS, the problems and challenges faced by the stakeholders and its impact on India. Lastly, paper concludes with the ways through which these problems can be addressed.

(Patil, 2012) IFRS stands for "International Financial Reporting Standards" and includes International Accounting Standards (IASs) until they are replaced by any IFRS and interpretations originated by the IFRIC or its predecessor, the former Standing Interpretations Committee (SIC). These are standards for reporting financial results and are applicable to general purpose financial statements and other financial reporting of all profit oriented entities. Profit-oriented entities include those engaged in commercial, industrial, financial and similar activities, whether organized in corporate or in other forms also includes mutual insurance companies, other mutual co-operative entities, etc.

NEED FOR IFRS

Different countries follow different accounting standards for computing the profits of the company. Profits computed as per different accounting laws of different countries always yield different figures of profits. So as to remove the discrepancy in accounting across the globe, companies' world over have decided to apply uniform standards of accounting to arrive the uniform profit across the globe.

It is expected that the adoption of IFRS will be beneficial to investors and other users of financial statements. The companies are also expected to benefit as investors will be more willing to provide finance.

Policy makers all over the world are focusing their attention towards the implementation of IFRS and are also looking for the answers to the question as to why they should implement it when they are successfully following GAAP for so many years. Major reasons advanced for implementing IFRS are enumerated as:

- **Globalization of finance:** The key benefit of implementing IFRS is a common accounting system and framework which is perceived as stable, transparent and fair to the local and foreign investors which in turn lead to increased compatibility and comparability among different financial statements across the globe. This will eliminate multiple reporting at the entity level and also at the consolidated level. Indian firms need to globalize, and for this they need funds at cheaper cost which is available in American, European and Japanese Capital Markets. To meet the regulatory requirements of these markets, Indian Companies are now mandated to report their financials as per IFRS. This will lead to cross border listing of shares and securities in other parts of the world and in turn cause globalization of finance.

- **Competitive advantage:** Indian entities will be able to initiate new relationships with investors, customers and suppliers internationally as IFRS provides a globally accepted reporting platform which will ultimately raise the reputation and relationship of the Indian corporate and give them competitive advantage. Companies are also in a race to gain an edge over their competitors by trying to adopt IFRS at the earliest and also listing securities on stock exchanges worldwide to build their Brand image. Convergence with IFRS improves the risk rating and makes the corporate world more competitive globally as their comparability with the international competitors' increases.
- **Professionalism:** Service sector will get a boost as the implementation of IFRS in the corporate would require trained accountants, auditors, values and actuaries. Moreover, a single set of accounting standards worldwide would ensure that auditing firms standardize their training and quality of work is maintained globally which will move India towards accounting services hub.
- **Statutory obligation:** After the opening up of countries and removal of tariff barriers, it has been made mandatory and obligatory to report using IFRS as majority of stock exchanges require financial information presented according to the IFRS. In case of joint ventures with a venture partner operating in countries requiring IFRS, they need to follow the same accounting standards as their venture partner. The multinationals seeking to enter new markets and expand operations to a foreign country may need to report using IFRS in order to obtain an operating license or to raise capital.
- **Economic growth:** It has been observed from the above literature review that the number of countries across the world where IFRS is a recognized reporting framework continues to grow by exploiting opportunities to generate process and cost efficiencies. It will potentially open up opportunities to standardize, simplify and centralize financial reporting processes and functions as the use of a single global standard enhances the efficiency of capital allocation on a global basis and help reduce the cost of capital.

CHALLENGES IN THE PROCESS OF ADOPTION OF IFRS IN INDIA

- **Awareness of international practices**: The entire set of financial reporting practices needs to undergo a drastic change after the adoption of IFRS to overcome the number of differences between the two GAAP's. It would be a challenge to bring about awareness of IFRS and its impact among the users of financial statements.
- **Training:** The biggest hurdle for the professionals in implementing IFRS is the lack of training facilities and academic courses on IFRS in India. IFRS has been implemented with effect from 2011; but it is observed that there is acute shortage of trained IFRS staff. The Institute of Chartered Accountants of India (ICAI) has started IFRS Training programmes for its members and other interested parties. Yet there exists a large gap between Trained Professionals required and trained professionals available.
- **Fair value:** IFRS which uses fair value as a measurement base for valuing most of the items of financial statements can bring a lot of volatility and subjectivity to the financial statements. It also involves a lot of hard work in arriving at the fair value and services of valuation experts have to be used. Moreover, adjustments to fair value result in gains or losses which are reflected in the income statements. Whether this can be included in computing distributable profit is also debated.
- **Management compensation plan:** This is because the financial results under IFRS are likely to be very different from those under the Indian GAAP. The contracts would have to be re-negotiated by changing terms and conditions relating to management compensation plans.
- **Reporting systems:** The disclosure and reporting requirements under IFRS are completely different from the Indian reporting requirements. Companies would have to ensure that the existing business reporting model is amended to suit the reporting requirements of IFRS. The information systems should be designed to capture new requirements related to fixed assets, segment disclosures, related party transactions, etc. Existence of proper internal control and minimizing the risk of business disruption should be taken care of while modifying or changing the information systems.
- **Complexity in adoption:** The researchers feel that the biggest risk in converging Indian GAAP with IFRS is the fact that the accounting entities underestimate the complexity involved in the process. Instead it should be recognized well in advance that teething problems would definitely creep in. Converting to IFRS will increase the complexity with the introduction of concepts such as present value and fair value. In IFRS framework, treatment of expenses like premium payable on redemption of debentures, discount allowed on issue of debentures, underwriting commission paid on issue of debentures etc is different than the present method used. This would bring about a change in income statement leading to enormous confusion and complexities.
- **Risk in adoption:** Implementing IFRS has increased financial reporting risk due to technical complexities, manual workarounds and management time taken up with implementation. Another risk involved is that the IFRS do not recognize the adjustments that are prescribed through court schemes and consequently all such items will be recorded through income statement.
- **Time:** 95% of companies in Australia and in the European Union took more than a year to the complete IFRS transition, with 40% taking more than two years. Looking at the Indian scenario, we have already delayed the process from the very beginning. In other countries, regulators released final interpretations two to three years in advance of IFRS deadline and provided step-by-step transition road maps for companies. In India, ICAI took so long to finalize the standard—increasing the confusion around standard interpretation.
- **Cost:** The IFRS transition is expected to cost Indian firms between Rs. 30 lakh and 1 crore, with an average of 16 internal and three external full-time staff dedicated to the transition. Fifty percent of adopters had to implement entirely new IT systems to accommodate IFRS; only 20% of companies did not implement systems changes. Costs such as auditor fees, systems changes, and reporting costs tend to overrun at the last minute.

CURRENT SCENARIO

The goal of IFRS is to provide a global framework for how public companies prepare and disclose their financial statements. IFRS provides general guidance for the preparation of financial statements, rather than setting rules for industry-specific reporting.

- After the enactment of the Companies Act, 2013, the ministry of corporate affairs has now shifted its focus on rolling out international reporting standards for Indian companies which were to be implemented beginning April 1, 2011.
- According to the draft plan, the ministry wants to implement the international financial reporting standards (IFRS) beginning with companies that have a net worth of over Rs 1,000 crore from April 1, 2015.
- In the second phase, both listed and unlisted companies with a net worth of over Rs 500 crore but less than Rs 1,000 crores will have to converge with the international accounting standards from the financial year beginning April 1, 2016.
- IFRS had been put on the back burner by the government given issues raised by corporate and unresolved taxation issues. Industry bodies had sought postponement arguing the industry needed more time to prepare.
- The IFRS-converged accounting standards deal with mark-to-market projections and valuation of financial assets among other things.
- The implementation is expected to cause some upheaval in companies' finances in the initial stage as the standards call for projecting assets' real value. Various sectors, including banking and real estate would be hit, experts have argued.
- "The Institute of Chartered Accountants of India (ICAI) has been asked to conduct a sector-wise study, elaborating on the impact the implementation will have on the sectors
- As such, all Indian companies listed overseas or doing business on foreign land currently prepares financial statements as per the international standards.
- However, banking companies would be exempt from complying with the IFRS. In the third and fourth phase, beginning April 1, 2017, smaller companies would need to prepare their accounts as per the international standards.
- The main sectors which are likely to be impacted include oil and gas, finance, telecom and infrastructure companies.

Having an international standard is especially important for large companies that have subsidiaries in different countries. Adopting a single set of world-wide standards will simplify accounting procedures by allowing a company to use one reporting language throughout. A single standard will also provide investors and auditors with a cohesive view of finances.

Currently, over 100 countries permit or require IFRS for public companies, with more countries expected to transition to IFRS by 2015. Proponents of IFRS as an international standard maintain that the cost of implementing IFRS could be offset by the potential for compliance to improve credit ratings.

CONCLUSION

It is very much clear that transition from Indian GAAP to IFRS will face many difficulties but at the same time looking at the advantages that this adoption will confer, the convergence with IFRS is strongly recommended. We have also seen that this transition is not without difficulties as to the proper implementation process which would require a complete change in formats of accounts, accounting policies and more extensive disclosure requirements. Therefore, all parties concerned with financial reporting also need to share the responsibility of international harmonization and convergence. Keeping in mind the fact that IFRS is more a principle based approach with limited implementation and application guidance and moves away from prescribing specific accounting treatment, all accountants whether practicing or non-practicing have to participate and contribute effectively to the convergence process. This would lead to subsequent revisions from time to time arising from its global implementation and would help in formulation of future international accounting standards. A continuous research is in fact needed to harmonize and converge with the international standards and this in fact can be achieved only through mutual international understanding both of corporate objectives and rankings attached to it. Though difficult, it is not impossible for the Indian corporate to implement IFRS in the prevailing conditions since the fundamentals are strong and will feel the impact of the new rules the most as its operations involve multiple financial instruments that face the brunt of the changeover. Senior management at many companies views IFRS as a Finance priority because of the required changes in accounting practices. However, the impact of IFRS is truly cross-functional, spanning divisions and business units.

REFERENCES

1. S. Yadav, D. S. (2012). What Needs to be IFRS: What Needs t. *IJCEM International Journal of Computational Engineering & Management*, *Vol. 15 Issue 6*, 36.
2. Shah, K. K. (2014). IFRS AND INDIAN: OPPORTUNITIES AND CHALLENGES. *Global Journal of Multidisciplinary Studies , 3* (9).
3. Vinayagamoorthy, D. A. OPPORTUNITIES AND CHALLENGES IN ADOPTING IFRS IN INDIA. *International Journal of Business and Administration Research Review, Vol.2* (3), 132-136.
4. Kathiria, A. Challenges in IFRS convergence in SMEs in India. *ABHINAV Journal in Research in Commerce & Management , 2* (5), 1-7.
5. Patil, M. P. (2012). Opportunities and Challenges. *International Indexed & Referred Research Journal*, *I* (1), 27-28.

FARMERS' ATTITUDE AND SOCIO ECONOMIC STATUS TOWARDS DRIP IRRIGATION SYSTEM IN COIMBATORE DISTRICT

DR. P. MAHESWARI
ASST. PROFESSOR IN COMMERCE (CA)
CBM COLLEGE
KOVAIPUDUR

ABSTRACT

Agriculture is back bone of Indian economy a key sector for India and it will contribute to remain the same in the foreseeable future also. Though India has the highest percentage of land under cultivation in the world, only one-third of the cropped area is actually irrigated and the productivity of agriculture is very low. The post- Independence decades have seen a remarkable shift in agricultural practices such as irrigation, crop rotation, fertilizers, and pesticides in response to new technologies and the development of world markets. water scarcity is the main problem to be faced by many societies and the world in the Twenty -first century. In India, the need for water resources development for overall social and economic development was well recognized from the beginning of the plan period. In the last five decades, a large number of water resources projects (Major, medium and minor) for irrigation have been implemented and several others are under consideration all over the country.

KEYWORDS
irrigation system, farmers's attitude.

INTRODUCTION

In India, it was introduced in the early seventies, and during the last few years this system has started gaining momentum. The adoption of the drip system started in areas having water scarcity, poor quality water, and undulating terrains. The Indian National Commission on Irrigation and Drainage, in its report (INCID, 1994.) has reported that in India, 70,859 ha area are under drip irrigation, which is 3.97 per cent of the area irrigated by drip irrigation systems worldwide.

Drip is the most heavily promoted form of irrigation due to its economic benefits such as low cost of operation and maintenance, high water application efficiency, usage in uneven terrain etc., compared to overhead sprinkler and other permanent irrigation systems. This study, therefore, intends to examine the attitude and satisfaction of the farmers at Thondamuthur Block, in Coimbatore district towards drip irrigation system.

NEED FOR IRRIGATION IN INDIA

- About 80 per cent of the total annual rainfall of India occurs only during four months, i.e. from mid-June to mid-October and hence, it is essential during the rest of the eight months.
- As monsoons are uncertain, irrigation is necessary to protect crops from drought as a result of uncertain rainfall.
- The irrigation is necessary for agriculture in less rainfall areas.
- Sandy and loamy soils cannot retain water like the alluvial soil and the black soil. This is one of the major reasons for using the irrigation for farming in the areas having sandy and loamy soils and along the slopes of hillsides.
- Extensive irrigation is necessary for more production as about 70 per cent of people depend on agriculture.

TYPES OF IRRIGATION

Various types of irrigation techniques differ in how the water obtained from the source is distributed within the field. In general, the goal is to supply the entire field uniformly with water, so that each plant has the required amount of water. The modern methods are efficient to achieve this goal. Surface irrigation, Localized Irrigation, Sprinkler Irrigation, Center Pivot Irrigation, Lateral Move (Side Roll, wheel Line), Sub-Irrigation, Manual Using Buckets or Watering Cans, Automatic, Non-Electric Using Buckets and Ropes, Drip Irrigation, etc.,

STATE-WISE AREA UNDER DRIP METHOD OF IRRIGATION

The area under drip irrigation has tremendously increased from 1991-92 to 2010-11 in all states except Orissa. However, during the four-time period, the percent-age growth in area under drip irrigation was high only during 2000 – 01, except, in the states namely Andhra Pradesh, Gujarat, Punjab, and other states.

COMPONENTS OF DRIP IRRIGATION SYSTEM

The following are some of the components of Drip Irrigation System:

Pump or pressurized water source, water Filter - Filtration Systems: Sand Separator like Hydro-Cyclone, Screen filters, Media Filters, Disc Filters, Fertigation Systems and Chemigation Equipment, Backwash Controller, Pressure Control Valve, Main Line, Hand-operated, electronic, or hydraulic Control Valves and Safety Valves, Smaller diameter polytube, Poly fittings and Accessories, Emitting Devices at plants. The major components of Drip Irrigation are shown in Appendix B.

SIGNIFICANCE OF DRIP IRRIGATION SYSTEM

Drip irrigation can be helpful if water is scarce or expensive. Because evaporation, runoff, and deep percolation are reduced and irrigation uniformity is improved, it is not necessary to "over-water" parts of a field to adequately irrigate the more difficult parts. Drip systems work well where other irrigation systems are inefficient because parts of the field have excessive infiltration, water paddling, or runoff. Precise application of nutrients is possible using drip irrigation. Fertilizer costs and nitrate losses can be reduced. Nutrient applications can be better timed to meet plant needs.

PROFILE OF THE STUDY AREA – COIMBATORE DISTRICT

Tamil Nadu, in India, has been divided into five agricultural zones based on the agro climatic conditions and soil profile. Coimbatore district falls under Zone II. where Coimbatore is the third largest city in the state, and is popularly known as textile capital of south India. It is situated on the banks of the river Noyyal.

THONDAMUTHUR BLOCK IN COIMBATORE DISTRICT

Thondamuthur is a panchayat town in Coimbatore District in the Indian State of Tamil Nadu. Thondamuthur is located in Narasipuram Road, approximately 15 km from Coimbatore City, and its economy is on the rise, being its proximity to Coimbatore. Totally nineteen villages

OBJECTIVES OF THE STUDY

1. To identify the socio-economic status of the sample farmers.
2. To examine the attitude of the farmers towards drip irrigation system.

REVIEW OF LITERATURE

ZulfikarRahmanM.et al., (1999)[1] have discussed about the attitude of farmers towards environment and sustainability issues of agricultural development. Field work was conducted in Nakano block of Iwami town, and data were collected from the farmers through personal interviews. Findings revealed that most of the farmers confronted low levels of environmental problems. The issues mostly confronted were the reduction of necessary aquatic life and beneficial insects in nature due to the use of agro-chemicals. Cultivation of high yielding varieties of crops with proper management practices, use of low toxicity pesticides and care in handling were the matters mostly suggested by farmers to combat environmental degradation.

AyarsJ. E. etal., (1999)[2] have, in their article, described that the subsurface drip irrigation (SDI) research had been conducted by scientists at the Water Management Research Laboratory over a period of 15 years. Data are presented by irrigation and fertilization management on tomato, cotton, sweet corn, alfalfa and cantaloupe for both plot and field applications. Results from these studies demonstrated significant yield and water use efficiency in all crops. Use of high frequency irrigation resulted in reduced deep percolation and increased use of water from shallow ground water when crops were grown in high water table areas.

RESEARCH METHODOLOGY

SOURCES OF DATA

The study is mainly based on primary data, which are collected from farmers through Interview Schedule consisting of 42 questions, of which, 11 questions were related to the personal profile of the respondents, 8 questions were related to Agricultural Profile and the rest were related to Irrigation Profile of the respondents. The secondary data needed for the study were collected from the Department of Agriculture, Government of Tamil Nadu, Suppliers of drippers and online sources, apart from the related journals, articles, and books.

SAMPLE DESIGN

The primary data were collected from 395 farmers in Thondamuthur block of Coimbatore, District, in Tamil Nadu. Thondamuthur block was chosen for the study due to the fact that drip irrigation is adopted by the farmers to cultivate both perennial and orchard crops such as coconut, arecanut, banana, grapes, etc. According to the report of Department of Agriculture.

FRAMEWORK OF ANALYSIS

The primary data collected were analyzed by using the following statistical tools. Apart from the descriptive statistical analysis, the tools like Chi-Square Test, Five - Point Scaling, Average Score Analysis, Regression Analysis ANOVA, and Crosstab Analysis have been used in the present study.

LIMITATIONS OF THE STUDY

The necessary precautions were taken by the researcher to prevent shortcomings. In spite of that, the present study is subject to the following limitations. First, the results of the present study may not be applicable to other blocks having different socio – economic conditions.

HYPOTHESES

Ho1: Demographic factors have no significant difference on attitude score.
Ho2: Agricultural profile has no significant difference on attitude score.

ANALYSIS AND FINDINGS

ANOVA: DEMOGRAPHIC FACTORS AND ATTITUDE SCORE

Attitude score was computed from the respondent's perception towards drip irrigation. The observed attitude score confirms the level of acceptance towards its reliability in a practical condition. The analysis of variance (ANOVA) was carried out to measure whether the respondent' attitude has any significant difference among the demographic characteristics of the respondents. For this purpose, the following null hypothesis is formulated and the ANOVA results are shown in Table 1.

Ho_1: Demographic Factors have no significant difference on Attitude Score

TABLE 1 ANOVA: DEMOGRAPHIC FACTORS AND ATTITUDE SCORE

Demographic Factors		N	Mean	SD	F – Value	P – Value
Gender	Male	351	11.86	2.12	1.626	.105
	Female	44	12.41	1.90		
Marital Status	Single	16	10.31	12.57	.3.164	.002
	Married	379	11.99	2.06		
Age	Below 25 years	3	9.00	1.00	6.604	.000
	26 – 35 years	69	11.22	2.27		
	36 – 45 years	154	12.32	1.87		
	Above 45 years	169	11.90	2.14		
Educational Qualification	SSLC/HSC	187	11.88	2.23	14.061	0.000
	Under Graduation	60	10.92	2.12		
	Post-Graduation	8	9.38	2.62		
	Others	140	12.56	1.56		
Occupation	Farmer	386	11.93	2.16	1.218	.303
	Govt. Employee	1	14.00	-		
	Private Employee	6	10.67	.82		
	Business	2	13.00	1.41		
No. of. Earning Members	One	141	11.52	2.14	6.216	0.002
	Two	251	12.18	2.03		
	Three & More	3	9.67	2.89		
Annual Income	Below Rs. 1 lakh	19	11.11	1.91	18.334	.000
	Rs. 1 lakh – Rs. 3 lakhs	283	12.26	1.90		
	Rs. 3 lakhs – Rs. 6 lakhs	78	11.54	2.29		
	Above Rs. 6 lakhs	15	8.67	1.91		
Annual Agriculture Income	Below Rs. 0.5 lakh	26	12.73	1.28	8.473	.000
	Rs. 0.5 lakh – Rs. 1.5 lakh	244	12.22	1.95		
	Rs. 1.5 lakh – Rs. 3 lakh	84	11.20	2.10		
	Above Rs. 3 lakh	41	11.15	2.78		
Type of Residence	Own House	205	12.37	1.99	14.987	.000
	Rental House	17	10.00	2.34		
	Farm House	173	11.58	2.05		

- It is evident from the ANOVA results that gender and occupation have no significant difference on attitude score towards drip irrigation and hence the null hypothesis that 'Demographic *factors have no significant difference on attitude score*' is accepted with the above mentioned factors.

ANOVA: AGRICULTURAL PROFILE AND ATTITUDE SCORE

The analysis of variances was carried out to measure whether the respondents' attitude has any significant difference among agricultural profile of the. For this purpose, the following null hypothesis is formulated and the ANOVA results are shown in Table 2.

Ho_2: Agricultural profile have no significant difference on Attitude Score

TABLE 2: ANOVA: AGRICULTURAL PROFILE AND ATTITUDE SCORE

Agriculture Attributes		N	Mean	SD	F – Value	P - Value
Farmers' Involvement in Agriculture	By tradition	252	12.09	1.99	1.933	.124
	Nature of Job	18	12.17	2.33		
	Self Interest	52	11.67	2.49		
	Income Potential	73	11.48	2.11		
Type of Farmers	Marginal Farmers	98	10.98	2.35	14.970	.000
	Small Farmers	173	12.37	1.82		
	Big Farmers	124	12.05	2.05		
Experience in Agriculture	Less than 5 years	8	11.88	1.64	5.148	.006
	5 – 10 years	196	12.26	1.93		
	10 – 15 years	191	11.58	2.24		
No. of Members in Agriculture	None	15	11.73	1.91	5.836	.001
	One	345	12.04	2.03		
	Two	29	11.28	2.55		
	More than Two	6	8.83	2.14		
No. of Electric Service	One	361	12.13	1.94	24.927	.000
	Two	27	10.11	2.36		
	More than Two	7	8.29	2.56		
Types of crops Cultivated	Standard Crops	45	12.80	1.50	12.373	.000
	Seasonal Crops	118	12.45	1.78		
	Regular Crops	51	11.02	2.23		
	Standard & Regular Crops	93	11.01	2.33		

It is evident from the ANOVA results that all variables in agricultural profile have significant difference on attitude score towards drip irrigation (except respondents' involvement in agriculture). Hence, the null hypothesis that '*Agricultural profile has no significant difference on attitude score*' is rejected with the above mentioned factors.

CONCLUSION

Agricultural development is an integral part of overall economic development. However, the increasing demand for irrigation water, coupled with a rapid decline in net potential of water in recent years, has forced adoption of new methods of irrigation for crop cultivation all over the world. Therefore, the drip irrigation system is in practice for irrigating both perennial and orchard crops in Coimbatore district where water is scarce and expensive.

REFERENCES

1. Hugh Turral, Mark SvendsenJcan marc Faures, (2010) 'Increasing in irrigation reviewing the past plant and looking to the future', **Agricultural Water Management** pp. 551 – 560.
2. J. E. Ayars, C. J. Phene, R. B. Hutmacher, K. R. Davis, R. A. Schoneman, S. S. Vail, R. M. Mead**,** (1999) "Subsurface Drip Irrigation of Row Crops: A review of 15 years of research at the Water Management Research Laboratory", **Agricultural Water Management**, 1999, Vol. 42, Issue. 1, pp. 1 – 27.
3. M. ZulfikarRahman, H. Mikuni, M. Mostafizur Rahman, (1999) "Towards Sustainable Farming Development: The Attitude of Farmers in a Selected Area of Shimane Prefecture, Japan", **Journal of Sustainable Agriculture**, 1999, Vol. 14, Issue. 4, pp. 19 – 33.

WEBSITES

4. www.coimbatore.tn.nic.in
5. www.wikipedia

WATERMARKING USING ARNOLD TRANSFORMATION AND PRIVATE KEY

HARJOT KAUR
STUDENT
LUDHIANA COLLEGE OF ENGINERING & TECHNOLOGY
KATANI KALAN

GURINDER SINGH
ASST. PROFESSOR
LUDHIANA COLLEGE OF ENGINERING & TECHNOLOGY
KATANI KALAN

ABSTRACT

This paper introduces algorithm which is required to protect copy right of data entropy based robust watermarking scheme using number of techniques mainly Hadamard transform technique and Arnold transform technique. The watermarking is used to hide the data or identifying information (audio, video or image) of digital multimedia. It is based on Discrete Cosine Transformation (DCT) and Discrete Wavelet Transform (DWT) used to protect the security and rectitude of transmitted biometric color images. This technique can hide an entire image or pattern as a watermark directly into the original image. The original image is needed in watermark detection which is used for extended feature coefficient necessary for robust detection and resolve the value of one bit of watermark spread into block by using DWT prior to DCT which provide better imponderable. In this paper, to reduce the complexity by using the Hadamard transformation which is used to convert the cover page from spatial domain to transform domain and increases security using Arnold transformation and private key.

KEYWORDS
watermarking, transformation, DCT, DWT, hadmard transform.

INTRODUCTION

By the amelioration of the internet, there is need to protect copyright. Watermarking is one of the multimedia certification technique. Watermarking is the process in which embedding the digital information into any multimedia data such as an image, audio or video file[1]. Due to this security increases. Many serious attacks are resolved. Biometric system also increases security and certification in information technology community.

Biometric system takes specific characteristics of person because person specific features is not possible to transfer

1. Finger print
2. Hand
3. Audio Feature
4. Facial
5. Handwriting and Signature

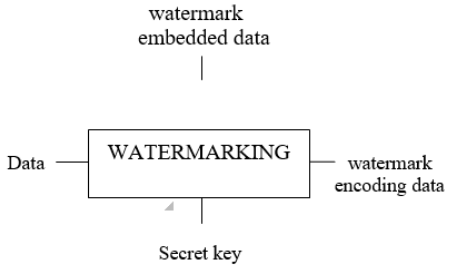
BLOCK DIAGRAM OF WATERMARKING

The given figure 1 shows the block diagram of Watermarking.

Important Feature of watermarking are

1. Reliability
2. Invisibility
3. High Capacity

FIG. 1: BLOCK DIAGRAM OF WATERMARKING



Digital watermarking derived from steganography, its means covered writing. The main purpose of steganography is to suppress information[2]. Mainly two types of watermarks are used, nested and thus the resulting watermark is embedded in lower (LL) and high frequency(HH) band [3]. There is a steerable pyramid transform as watermarking domain, it has a lot of useful properties. Main properties of steerable pyramid transform are

1. Invariance
2. Capture of Multi scale
3. Multiresolution

Aspect Invariance properties of the steerable pyramid transform may be exploited to counterattack geometrical attacks[4]. DCT and DWT based digital watermarking algorithm can resist various watermark attacks rather than embedding the watermark to the DCT mid frequency coefficient and DWT beforehand. To cultivate the security and robustness further[5].

The watermark is generated as DCT domain signal which employ a message, it may be analog or digital then it going to expand and after expansion apply DCT then obtained watermark image[7].

DCT: With the character of Discrete Fourier Transform(DFT),DCT turn over the image edge to make the image transformed into form of even function, its one of the most common linear transformation in digital signal process technology. Two dimensional DCT is defined as:

Two dimensional DCT is defined as

$C(u)=\alpha(u) \sum f(x)\cos[\prod(2x+1)u/2N]$ ..... (1)

Here F(x), x=0,1,2,3, (x-1)

The IDCT is defined as

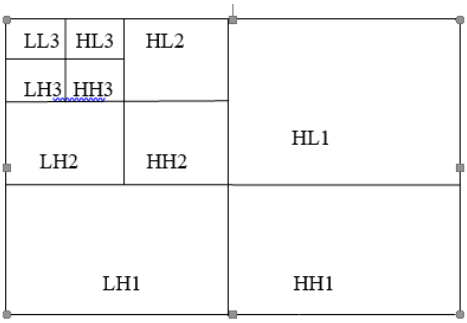
$f(x)= \sum \alpha(u)\, c(u) \cos[\prod(2x+1)u/2N]$ .....(2)

The two dimensional DCT can not only concentrate the main information or original image into the smallest low frequency coefficient.

DWT: Wavelet transformation is a time domain localized analysis method with the fixed size. There is quite good frequency differentiated rate in its low frequency part.

The information of low frequency district is an image close to the original image. Most of signal information of original image is in this frequency district. The frequency district of LH, HL and HH represents the level detail[6] in fig 2.

FIG. 2: DWT DECOMPOSED IMAGE



Hadamard Transformation: Hadamard transform is orthogonal, non-sinusoidal that decomposes a signal into a set of orthogonal rectangular wave form. The transformation has no multipliers and has only two value i.e +ve one and –ve one[1].

The watermark is generated as DCT domain signal which employ a message, it may be analog or digital then it going to expand and after expansion apply DCT then obtained watermark image[7].

Entropy: Entropy defined as

$E=-\sum L \log2(L)$

Let L contains the histogram counts[1].

Arnold transform: The A×A binary watermark image W is transformed into W' by Arnold transformation to lower the autocorrelation coefficient of image and then the intimacy of watermark is strengthened. Arnold transformation is periodic and when it is iterated sometimes the original signal will be obtained. The Arnold transformation is defined as:

$$\begin{vmatrix} a \\ b \end{vmatrix} = \begin{vmatrix} 1 & 1 \\ 1 & 2 \end{vmatrix} \begin{vmatrix} a1 \\ b1 \end{vmatrix}$$

Inverse Arnold transformation is obtained by using the equations given below:

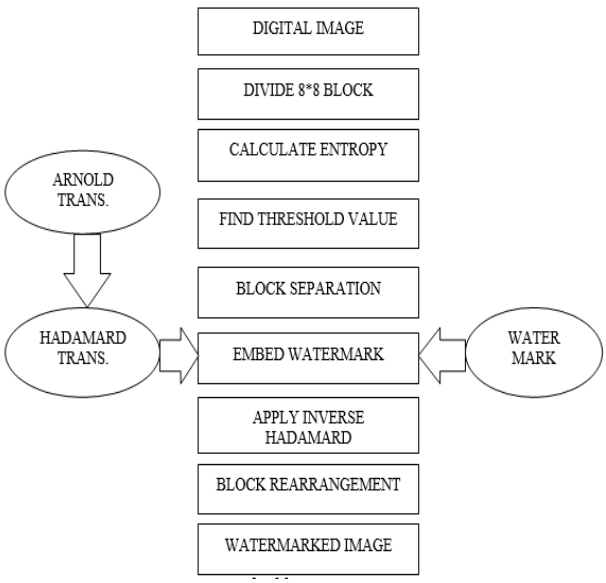
$$\begin{vmatrix} a' \\ b' \end{vmatrix} = \begin{vmatrix} 2 & -1 \\ -1 & 1 \end{vmatrix} \begin{vmatrix} a2 \\ b2 \end{vmatrix}$$

METHODOLOGY

A. Watermarking embedding process

- If cover image is color image first of all convert it in grey scale image then divide the image into blocks of 8×8 size. Now find the entropy of each block and find its threshold value. Now apply Hadamard transformation at the selected blocks. Now divide watermark into blocks of same size 8×8.Then apply inverse Hadamard transform(IHT)to the blocks. Then rearrange the modified blocks with unmodified blocks. After this process integrate the watermark image to display. Then apply Arnold transformation or a private key. Here this transformation and private key work as a Lock system or a key. By using this Arnold transformation surveillance of system increases.

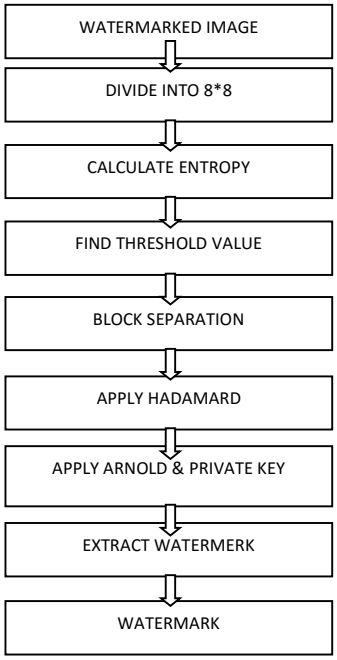
FIG. 3: EMBEDDING PROCESS



B. Watermark Extraction process

- If cover image is color image first of all convert it in grey scale image, then divide the image into blocks of 8×8 size. Now find the entropy of each block and find its threshold value. Now apply Hadamard transformation at the selected blocks. Then extract the watermark block from the respective block using constant factor. Now apply IHT. Then rearrange watermark blocks and original blocks. Now integrate the blocks to display the original image and watermark blocks to display the watermark image. Then convert the cover image into color image[1].

FIG. 4: EXTRACTION PROCESS



RESULTS

Original carrier image watermark of PSNR value is 48.29 db with good watermark transparency, with the naked eye from in fig. a. Original image choose 256 × 256 standard. Watermark image choose 32 × 32 size in fig b.

FIG. 5 (A): ORIGINAL IMAGE

FIG. 5 (B): ORIGINAL WATERMARK

FIG. 5 (C): SCRAMBLED WATERMARK

FIG. 5 (D): WATERMARKED IMAGE

FIG. 5 (E): EXTRACTED WATERMARK

FIG. 6

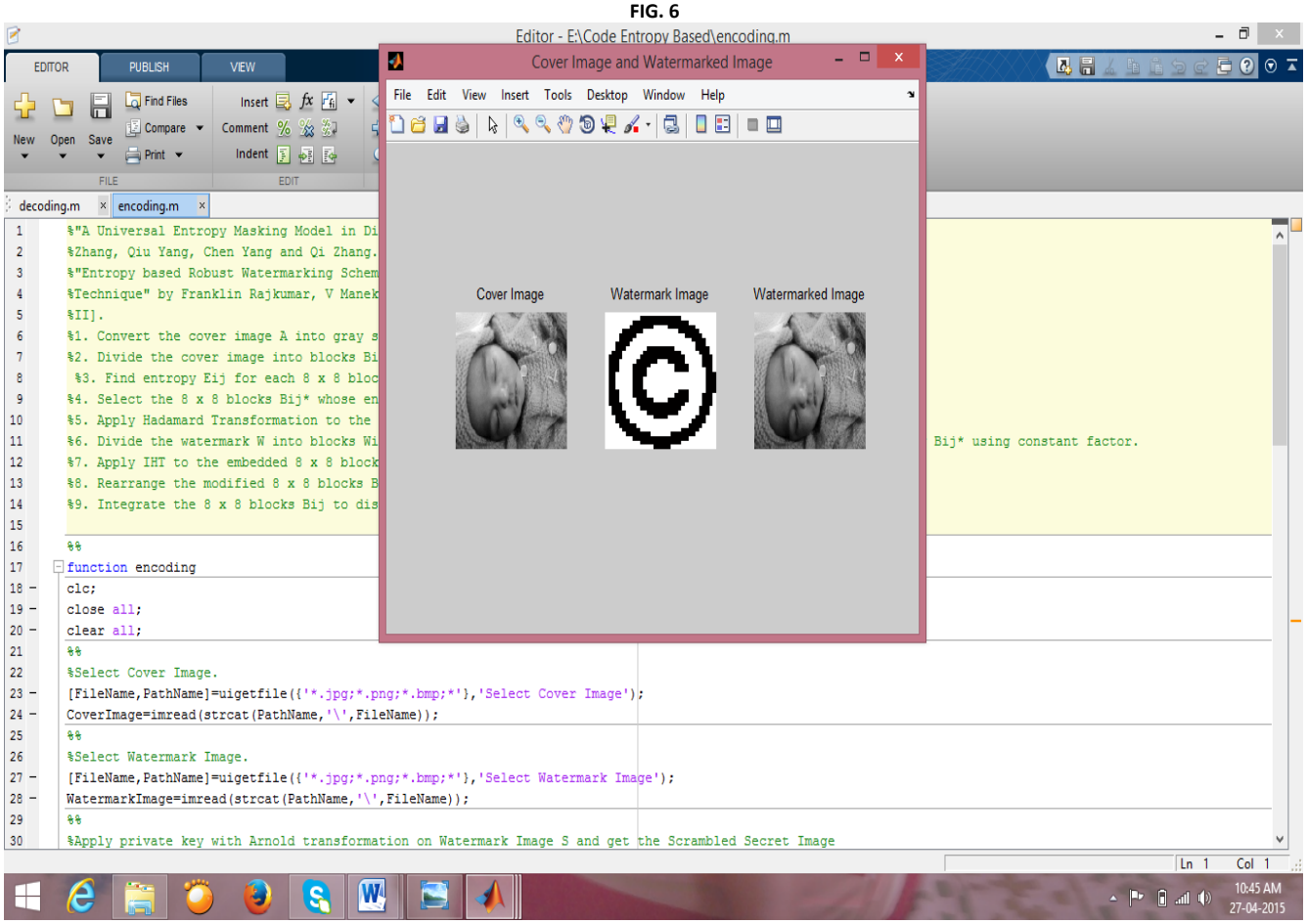

Editor - E:\Code Entropy Based\encoding.m
Cover Image and Watermarked Image
File Edit View Insert Tools Desktop Window Help
Cover Image
Watermark Image
Watermarked Image
decoding.m
encoding.m
%"A Universal Entropy Masking Model in Di
%Zhang, Qiu Yang, Chen Yang and Qi Zhang.
%"Entropy based Robust Watermarking Schem
%Technique" by Franklin Rajkumar, V Manek
%II].
%1. Convert the cover image A into gray s
%2. Divide the cover image into blocks Bi
%3. Find entropy Eij for each 8 x 8 bloc
%4. Select the 8 x 8 blocks Bij* whose en
%5. Apply Hadamard Transformation to the
%6. Divide the watermark W into blocks Wi
%7. Apply IHT to the embedded 8 x 8 block
%8. Rearrange the modified 8 x 8 blocks B
%9. Integrate the 8 x 8 blocks Bij to dis
Bij* using constant factor.
%%
function encoding
clc;
close all;
clear all;
%%
%Select Cover Image.
[FileName,PathName]=uigetfile({'*.jpg;*.png;*.bmp;*'},'Select Cover Image');
CoverImage=imread(strcat(PathName,'\',FileName));
%%
%Select Watermark Image.
[FileName,PathName]=uigetfile({'*.jpg;*.png;*.bmp;*'},'Select Watermark Image');
WatermarkImage=imread(strcat(PathName,'\',FileName));
%%
%Apply private key with Arnold transformation on Watermark Image S and get the Scrambled Secret Image
Ln 1 Col 1
10:45 AM
27-04-2015

FIG. 7

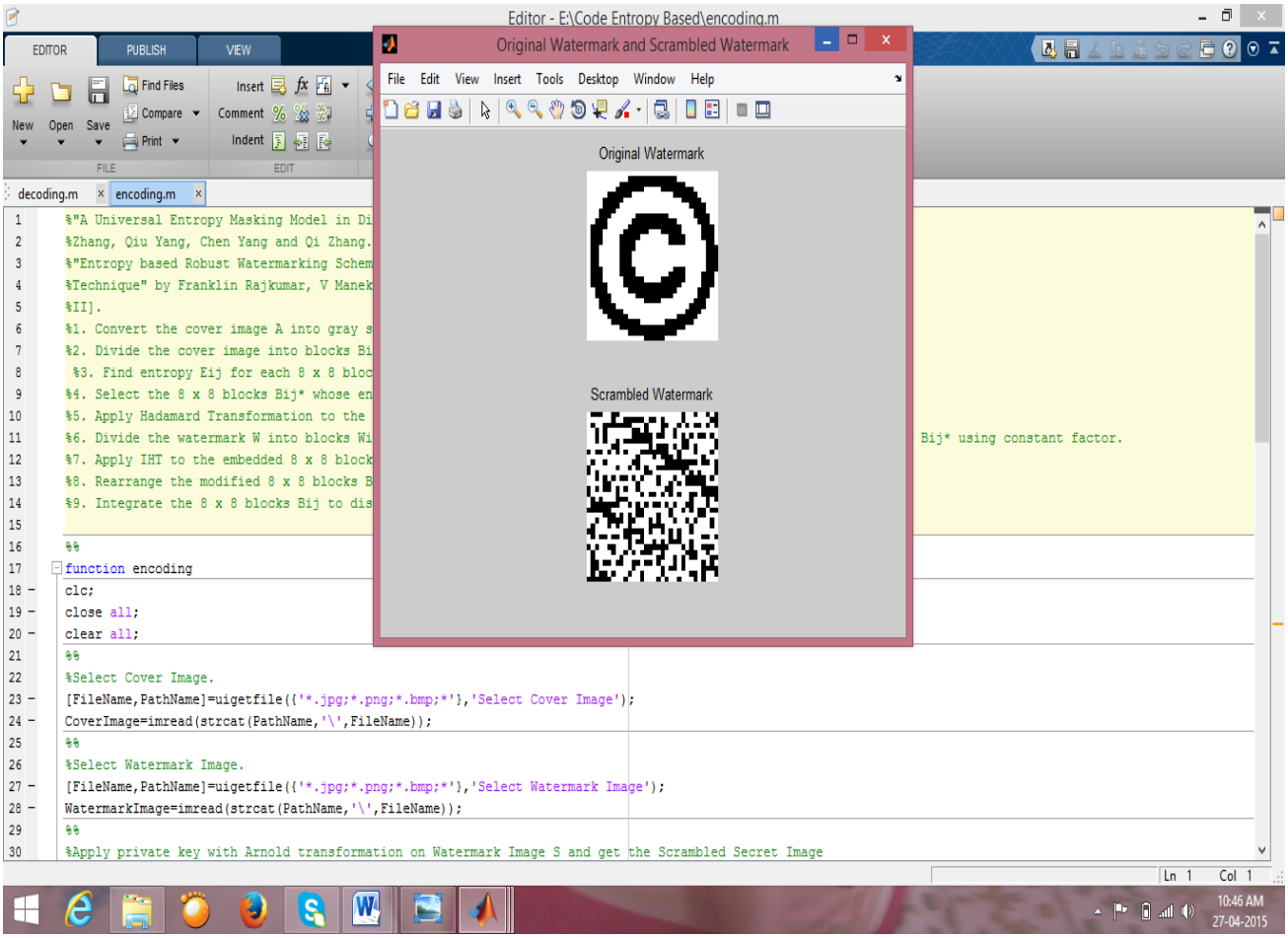

Editor - E:\Code Entropy Based\encoding.m
Original Watermark and Scrambled Watermark
File Edit View Insert Tools Desktop Window Help
Original Watermark
Scrambled Watermark
decoding.m
encoding.m
%"A Universal Entropy Masking Model in Di
%Zhang, Qiu Yang, Chen Yang and Qi Zhang.
%"Entropy based Robust Watermarking Schem
%Technique" by Franklin Rajkumar, V Manek
%II].
%1. Convert the cover image A into gray s
%2. Divide the cover image into blocks Bi
%3. Find entropy Eij for each 8 x 8 bloc
%4. Select the 8 x 8 blocks Bij* whose en
%5. Apply Hadamard Transformation to the
%6. Divide the watermark W into blocks Wi
%7. Apply IHT to the embedded 8 x 8 block
%8. Rearrange the modified 8 x 8 blocks B
%9. Integrate the 8 x 8 blocks Bij to dis
Bij* using constant factor.
%%
function encoding
clc;
close all;
clear all;
%%
%Select Cover Image.
[FileName,PathName]=uigetfile({'*.jpg;*.png;*.bmp;*'},'Select Cover Image');
CoverImage=imread(strcat(PathName,'\',FileName));
%%
%Select Watermark Image.
[FileName,PathName]=uigetfile({'*.jpg;*.png;*.bmp;*'},'Select Watermark Image');
WatermarkImage=imread(strcat(PathName,'\',FileName));
%%
%Apply private key with Arnold transformation on Watermark Image S and get the Scrambled Secret Image
Ln 1 Col 1
10:46 AM
27-04-2015

TABLE 1

	PARAMETERS	VALUES
1	Mean Square Error is	0.9628
2	Peak Signal to Noise Ratio is	48.2953 db
3	Average Difference is	-1040
4	Structural Content is	0.9997
5	Maximum Difference is	57.5
6	Normalized Absolute Error is	0.0005
7	Normalized Cross Correlation is	1
8	Bit-Error-Rate is	0.00%

CONCLUSION

There are many techniques to hide the data and copyright protection. The digital watermarking is comprehensible and easier method for hiding. Also this is more potent and more adopted because of its efficiency than the other hiding techniques. Watermarking is pinpoint on security by secret key, or Arnold transformation applied in the method. The requisition of security is increasing day by day because of cybercrime. It provides security not only for images but also for video, text and audio. Secure watermarking is an easy and efficient way of transmitting digital data.

REFERENCES

1. **Hernández J. R., Amado M.,.González F. P.(2000)**, "DCT-Domain Watermarking Techniques for Still Images: Detector Performance Analysis and a New Structure", IEEE, VOL. 9, issue 3, PP 331-342.
2. **Podilchuk Christine I., Edward J. Delp (2001)** "Digital Watermarking Algorithms and Applications", IEEE signal processing magazine, Vol. 8, issue 12, PP 33-46.
3. **Saraju P. Mohanty, RamakishnanK. R (2004)** "An Adaptive DCT domain Visible Watermarking Technique for protection of publicly Available images", International Journal of computer science engineering, Vol. 2, issue 4, PP 195-198.
4. **Bhaskar D. Lalitha,Damodaram A,Avadhan P.S (2006),**"Watermark insertion Algorithm implementation using Auxiliary carry and LSB methods", International conferences on system ices,cybernetics and informatics, Vol. 4, issue 2, PP 224-229.
5. **Abdulsalen Salah,** "Digital image watermarking algorithm wavelet transform domain using HVS characteristics" Thesis in MSC.
6. **Wang James Ze, WiederholdGio "Wave Mark (2009),** "Digital Image Watermarking Using Daubechis" Wavelets and Errors Correcting Coding", International conference on systemises, cybernetics and informatics, Vol. 6, issue 4, PP 1-9.
7. **Channalli Shashikala, Jadhav Ajay (2009)** "Steganography an Art of Hiding Data", International Journal on computer science and engineering, Vol. 1, issue 3, PP 137-141.
8. **Jiansheng M., SukangL., Xiaomei T., (2009),** "A Digital Watermarking Algorithm Based On DCT and DWT", Proceedings of the International Symposium on Web Information Systems and Applications, Vol.3, issue 2, PP 104-107.
9. **Lingling W.,Deng W., Zhang J.,Dongyan H. (2009),** "Arnold Transformation Algorithm and Anti-Arnold Transformation Algorithm's", 1st International Conference on Information Science and Engineering, Vol. 6, issue 9, PP 332-344.
10. **Drira Fadoua, Denis Florence, Baskurt Atilla (2010),** "Image Watermarking technique based on the steerable pyramid transform", International conference on syystmices, cybernetics and informatics, Vol. 4, issue 5, PP 1-12.

BARRIERS OF USING AND PRACTICING ELECTRONIC SHOPPING
(AN EXPLORATORY STUDY OF VIEWS OF A SAMPLE OF CONSUMERS IN IRAQI KURDISTAN REGION ERBIL CITY)

ZANA MAJED SADQ
LECTURER
DEPARTMENT OF MANAGEMENT
FACULTY OF HUMANITIES & SOCIAL SCIENCES
KOYA UNIVERSITY
KOYA

JAMIL ABDULKARIM ABDULLAH
LECTURER
BUSINESS ADMINISTRATION DEPARTMENT
COLLAGE OF BUSINESS ADMINISTRATION & ECONOMICS
UNIVERSITY OF SALAHADDIN
KURDISTAN REGION

SAID MOHAMMAD KARIM
LECTURER
DEPARTMENT OF MANAGEMENT
FACULTY OF HUMANITIES & SOCIAL SCIENCES
KOYA UNIVERSITY
KOYA

ABSTRACT

Internet is considered to be a marketing tool characterized by a high degree of interaction and expansive, with the possibility of quick access to local and global markets without restrictions or obstacles, with providing a variety of features that assist consumers for the purpose of obtaining their daily products and services in order to satisfy their needs and desires. However, some consumers are facing different barriers and challenges when they purchase goods and services using various online websites. Hence, the idea of this study is aimed to identify the most important barriers and challenges faced consumers when using the internet as a tool for the purchase of their goods and services. The population of this study includes consumers in Erbil city in Kurdistan Region of Iraq, stratified random sampling method used due to the size of the population of the study, the data has been collected through questionnaire developed for the current study included (17) questions, distributed to (71) consumers who use the Internet for online shopping, as well as statistical software (SPSS) used to analyze the questionnaire. The outcomes from the study addressed that the most important barriers facing consumers when they shopping online are obstacles subjective related to the lack of awareness of electronic shopping, fear of the late arrival of the items purchased online, incapability of confidence in shopping online, fear of facing "robbery and fraud", and lack of payment system (VISA card).

KEYWORDS
electronic shopping, barriers, electronic marketing, Internet, and consumers.

INTRODUCTION

Shopping online is considered as one of the e-commerce tools in the present modern era, and the period of globalization, which transform the world into a "small village", as well as it is one of the factors affecting trade and more prevalent business in today's world. E-marketing activity is increasing continually which it is expected take a great arrangement of consumers interest and shoppers in a similar way, because of its advantages outdone by the other shopping means (Al-Kurdy, 2012). Studies indicate that most online shopping and e-commerce operations in the world are in the United States and Europe. E-commerce is a process of purchasing, selling, and exchanges of products, services and information over the Internet networks, used for a range of techniques available to transmit information trade electronically (Al-shwra et al, 2009). Moreover, electronic shopping is a process illustrated by fun, at the same time it is interesting because it helps to provide comfort to the shoppers instead of the fatigue caused by the curfew in normal shops and view various types of products and exposure attempts in many cases vendors persuasion troublesome (Al-Kurdy, 2012). In addition, there are many goods that consumers find it at online pages; however, the culture of users for marketing and of shopping online through the World Wide Web is still in their opinion risky and unreliable results (Salama, 2010). Hence, the idea of study has been take place, in order to identify the most important barriers and challenges facing consumers by the use of E-shopping despite the universally recognized.

LITERATURE REVIEW

Recently, noticeable change in the field of marketing occurred due to the spread of digital technology in terms of their nature, their capabilities and their chances of success, in addition to the problems that may obstruct its completion. This directs to the increase the importance of e-shopping frequently, since day after day the number of Internet users is constantly increasing, which unchallenged lead to promote the concept of online shopping on the throne of marketing. This method of marketing exceeds few years old, with popular and sought an unparalleled when various strata of society categories especially for producers, which producers in today's can be promoted their goods and services in different parts of the world. This development has led to the emergence of several convergent concepts usually confuse between them which they are: e-commerce, e-marketing, and e-shopping.

ELECTRONIC COMMERCE

E-commerce started to emerge later in (1994), since that term has been associated entirely with the invention of the Internet, which covers the world. Internet network is considers as one of the most important inventions in this period, which was able to link the countries of the world that previously could have not been imagined.

Al-Sayrafi (2005) explains E-commerce as commercial transactions made by individuals and organizations that are dependent on the processing and transfer of digital data including sound and image through open networks such as the Internet, which allow access to open networks. Furthermore, Abu Saada (2007: 2) indicates that E-commerce is a concept that includes the performance of business processes between businesses units with each other, between the business

units and customers, as well as between the business units with the government through the use of information technology and communications network in the operations of this performance. Frequently, some use the term e-commerce synonymous with e-business and this is a common mistake. E-business wider than e-commerce and is based on the idea of mechanization performance in the relationship between the two frames of work, which extends to other activities of administrative, productivity, financial and services. Furthermore, E-business is not only related to the relationship between seller and customer, the relationship extends to agents, their employees and customers, as well as extends to the performance of the work patterns, evaluate and control it (Amin, 2010).

ELECTRONIC MARKETING

E-marketing is the key to achieving the organization's goals includes identifying the needs and desires of the target market with obtain the desired satisfaction effectively and efficiently than competitors, in an environment of all the tools combined with the available technology through the communication between human beings, whether an e-mail or other electronic tools.E-marketing according to Burgess and Bothma (2007:397) is a "business's efforts to inform, converse, promote and sell products and services over the Internet". Furthermore, E-marketing can defined as "identify and illustrate the needs of customers and their needs satisfy that make a company generates profits and ensures its survival by using modern communications technology of the Internet aimed at specific groups of customers are a mixture of normal people as well as companies (Mezdour, 2004, 1).

ELECTRONIC SHOPPING

The term of Electronic shopping used symbolically to refer to the e-commerce transactions that are conducted between businesses and consumers. Since it provides consumer information and services that will allow him/her the appropriate amount of knowledge which enables him/her to make the right purchasing decision. Thus, Electronic online shopping can be defined as "a structure of trade between businesses and consumers, through electronic resources" (Shaheen, 2000: 62). In addition, Al-edadi (2014: 2) defines Electronic shopping as "a range of efforts being made by the purchaser over the use of Internet to search for specific products and trade-offs between these products."

The factors that affect the attitudes of consumers to embrace the Internet in the procurement process varies from consumer to another according to the perception of risk and the relative importance of the benefits offered by the Internet, in addition to the consumer culture and the environment that affects consumers in which they live. For some consumers risks perceived consider restrictions hinder that adoption the Internet as a way to purchase, such as the risk of product type, risk of retailer confidence, techniques of payment, and the risk of privacy. While there are other consumers realize the relative importance of the benefits and services offered by the Internet in the procurement process outweigh the potential risks, including the degree of what motivates consumers to use Electronic shopping (Al-Shura et al, 2009).

CHARACTERISTICS AND ADVANTAGES OF ELECTRONIC SHOPPING

The electronic shopping has many advantages as a new shopping method which includes (Al-Nono, 2007: 47):

- Easily search for the desired items online as a result of providing a huge amount of information about the specifications of items, their price, maintenance and compare them to other goods that available.
- Direct purchase, where consumers do not need to face the salesmen face to face with their attempts to convince consumers to purchase their products.
- Helping customers to choose high-quality products.
- Customers can access to global markets as well as identify their products.
- The continued existence of information throughout (24) hours, 7 days a week.
- simplicity and rapidity of transactions along with the possibility of purchasing and shopping from the office or at home.

BARRIERS AND CHALLENGES OF E-SHOPPING

- Lack of knowledge of how to conduct shopping transactions on the Internet.
- The possibility of stealing the consumer card numbers through dealt with the Internet, and then the owners of the cards bear the burdens of buying goods operations or obtain services they did not implement them.
- Shopping online leads to the loss of well-known shopping fun, which in the practice families was found of shopping process through direct social interaction between purchaser and seller.
- Involvement some consumers quickening toward the purchase of goods may not be needed, as a result of the attractiveness of advertisement, and simplicity of purchase with credit cards. Thus, this leads to personal and family debt accumulation.
- The probability of occurrence of pretense contracts, and the occurrence of stealing because of the inability to verify the identity of the sellers.
- Lack of consumer's ability to see or examine the item before purchasing it.
- Language is a barrier for a number of dealers.

STANDARDS OF ELECTRONIC SHOPPING SUCCESS

The key success factor of any service is to satisfy the customer, in the part of dealing with e-commerce and shopping online, the essential issues is the services presenting to customer achieves their satisfaction. Furthermore, customer satisfaction is achieved through four main criteria (Haddad, 2002: 15):

- Privacy and Security: The elements of privacy and safety are required to ensure user confidence in the type of electronic shopping. Therefore, the success of this process depends on the availability of this requirement, since is secure consumers financial information which is very important issue, as well as the companies performing marketing through the Internet should realize that. Moreover, it must reduce these concerns through a third side, usually a governmental structure.
- Simplicity in dealing with the Internet: consumers attempts to deal with the Internet due to the ease and simplicity. In addition, obtain the required information in a simpler way, and end the operations and transactions required, such as issuing purchase orders, or orders quickly and easily. Thus, the absence of an element of simplicity in the online shopping may negatively affect the electronic shopping.
- The quality of the relationship and transactions: many companies seeks to communicate with the client, these is be done by relying on the database prepared by the company for its clients, through this database the company can communicate with the client. Therefore, companies can identify the clients' desires and needs. It should be noted that some sites on the Internet offers consumers excellent services including information along with remind them of their orders in the previous times so as to avoid the trouble of filling applications. Consequently, the companies recognize the importance of communicating with the client that has a significant impact on the adoption of online shopping.
- Follow-up customers service: this is important for the customer believes and their satisfy, this is by tracking purchase orders from start to end of the process, as a result customer satisfaction is achieving.

PREVIOUS STUDIES

There are few studies in Middle East carried out by researchers aims to find out the barriers and challenges of e-marketing and e- shopping. A study carried out by (Shamimri & Hamada, 2007) in both Egypt and Saudi Arabia in order to examine how consumer realize to the concept of e-shopping with the extent of their use as well to investigate the consumers knowledge of the reasons and barriers to use e-shopping. Researchers concluded that consumers are aware of the accurate use of e-shopping concept. However, some consumers are confusing between the concept of e-commerce and other electronic concepts. Furthermore, the use of e-shopping by consumers comes in the latest ranking compared to other areas of shopping.

In another study carried out by (Al-Kurdy, 2012) with the application to the consumers using e-marketing in Egypt. The study sought to determine the perceived risk through using e-shopping and influencing their decision to purchase products. Al-Kurdy found out that there are some perceived risks through using e-shopping influence the consumers' decision to purchase goods online, such as: (product performance, information, psychological, financial, and opportunities).

Rashad (2007) conducted a study entitled factors affecting customer confidence in shopping online. Researcher aimed to find out the extent to which the customer confidence plays in e-shopping, as well as to identify the determinants of this confidence. Rashad testes the hypotheses of his study in an applied field targeted a set of relationships included in this study sample that they use e-shopping. The results showed that the specific variables such as the site, customer characteristics, types of industry, personal demographics data of the client, explain about 76% of the variance in confidence in the website on the Internet. Furthermore, website features such as (privacy, security, browsing, rendering and presentation, the trade brand, tips and instructions, etc.) explains more than 88% of the variation or difference in the degree of customers to the website of confidence.

A study conducted by (Al-edadi, 2014) entitled obstacles to the use of e-shopping from a consumer point of view, focusing on determine the barriers facing clients and individuals of commercial companies when they use e-shopping. Al-edadi found that the most important obstacles facing clients and avert the use of online shopping is that the majority of customers are having difficulty when retrieving and altering goods and products, as well as fear of a lot of clients from stealing their credit card numbers and misuse.

Al-Shura et al. (2009) conducted a study entitled "e-marketing by using the World Wide Web (Internet): motivators and barriers to Jordanian consumers". Researchers found that the adoption of the Internet as a means of purchasing by the Jordanian consumer is still weak. Moreover, the lack of confidence in this means of purchasing, and high costs of Internet services precluded their use. Although the Jordanian consumers aware of the advantages of online shopping, however the impact of the barriers is larger than the impact of motivators.

Finally, Al-sagal Study (2010) entitled "Determinants of e-shopping and its impact on purchasing decision of Jordanian consumers". Al-sagal found that the determinant of marketing does not have contribution in influencing the purchasing decision of consumers. While the determinants of cultural and technological contributing to influence the purchasing decision of consumers.

THE IMPORTANCE OF STUDY

The importance of the study is as the following:

- The few studies that address the problem study in local area, of the barriers and challenges of the use of e-shopping by consumers. Where this study is attempts to highlight the most important barriers facing the consumer when they shopping electronically.
- Contributing to providing certain information and recommendations that is expected to be of assistance to the development of online shopping methods for consumer in the Erbil city.
- Encourage competent authorities and companies to depend on the Internet in order to improve and promote their services and products.

STUDY PROBLEM

Studies indicate that marketing and electronic shopping methods replaced the large size of the traditional trade methods, helped reduce the time and costs on the outskirts of exchanges (buyer and seller). However, weakness of use estimated in the Middle East, or rather in developing countries, due to a range of cultural, social, legal and religious factors contributed to the obstruction online shopping. In this context, this research is attempting to identify the most important barriers to the use of E-shopping from the point of view of consumers' research sample, and highlighting fundamental differences between each of the e-commerce, e-marketing, and e-shopping. As a result, the main question of the study problem is as following:

What are the main barriers and challenges through the use of e-shopping by consumers?

OBJECTIVES OF THE STUDY

The main objective of the study is to identify the barriers facing consumers which make difficulties to the use of e-shopping in Erbil city, the sub objectives through the main objective are the following:

- This study contributes to present theoretical and applied framework to the study problem, that its focus on a modern concepts in the field of business trade in our modern time, which it is electronic shopping.
- Cclarify the most fundamental differences between the terms in the field of e-commerce.
- To determine and diagnose the nature of the barriers and the current challenges those make difficulties to the use of E-shopping.

THE HYPOTHESIS OF THE STUDY

The main hypothesis of the study is that **there is statistically significant relationship at the 0.05 level between the barriers of electronic shopping and consumer use of the Internet for electronic shopping**.

METHODOLOGY

This study is based on descriptive and analytical approaches, as in the descriptive approach this study depends on the theoretical part, while in the analysis and statistical inference this study depends on the applied part. This study is based on collection of information and data on variety of resources. In the theoretical part of this study, data collected based on the information from several sources, such as books, studies, and university theses. In the applied part the tool of questionnaire administrated for data collection, due to the nature of the study that should be applied on consumers.

DATA ANALYSIS

A set of statistical analysis methods through the programme of (SPSS) has been used to describe and analysis the questions of the questionnaire, as well as ANOVA test has been applied to test the strength of the model.

PARTICIPANTS DEMOGRAPHICS

1. GENDER

The table below (1) shows the gender of the selected participants. The majority of the participants N=43 (%60.5) were male and N=28 (%39.5) were female.

2. AGE

The table below (1) shows the age of the participants, the participants N= 29 with (%41) their age are between 18-25 years, N= 16 (22.5%) their age are between 26-34 years, N= 20 (%28) are between 35-42 years, and N= 6 (8.5%) are between 43-50 years.

3. LEVEL OF EDUCATION

The table below (1) shows the level of education of the selected participants. The majority are holding bachelor degree N=42 (%59), coming after them participants whose holding diploma degree with N=11 (%15.5), postgraduate holder comes third with N=15 (%21), high school degree holder comes last with N=3 (%4.5).

TABLE 1: PARTICIPANTS DEMOGRAPHIC

Demographics Data		Percent %	Frequency
Gender	Male	60.5	43
	Female	39.5	28
Age	18-25 years	41	29
	26-34 years	22.5	16
	35-42 years	28	20
	43-50 years	8.5	6
Levels of Education	High School	4.5	3
	Diploma	15.5	11
	BSc.	59	42
	MSc. & PhD	21	15

CONFIDENCE SAMPLE TEST

The confidence of sample model is tested by the value of (F) test, as well as by comparing the value of (Sig.) of the model with the level of confidence (0.05).It can be note that the model is a significant confidence since the model is significant at 0.000 as shown in Table 2.

TABLE 2: CONFIDENCE ANOVA SAMPLE TEST

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	114.280	17	6.722	24.415	.000[b]
	Residual	14.593	53	.275		
	Total	128.873	70			

THE CONFIDENCE ENTERING VARIABLES TEST IN THE MODEL

After describing variables, it should identify which of the variables are significant, which must be kept in the model and ones are not significant should be deleted from the model, this is done through a statistical program SPSS with depending on the value of sig. for each variables along with selecting the confidence level (0.05) as the table (3) bellow illustrates that.

TABLE 3: RESULTS OF CONFIDENCE TEST BARRIERS OF USE e-SHOPPING

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Lack of awareness	.192	.063	.203	3.040	.004
Slow Internet	.030	.060	.028	.502	.618
The local language	.031	.061	.026	.498	.620
Lack to the payment system	.123	.086	.118	1.437	.047
Legal and regulatory weak frameworks	.005	.071	.004	.068	.946
Lack of evidence to prove in the event of a dispute	-.051	.073	-.038	-.691	.493
Insufficient information on e-shopping	-.010	.062	-.009	-.168	.867
Risks to the quality of the product	.096	.075	.102	1.275	.208
Lack of confidence in e- shopping	.168	.081	.178	2.078	.043
Lack of privacy and security	-.014	.065	-.011	-.215	.830
Fear of facingrobbery and fraud	.214	.113	.206	1.884	.045
Fear of the delay in arrival of the goods purchased	.219	.090	.213	2.434	.018
The weakness of the culture and practice of e- shopping	.033	.057	.031	.576	.567

To test the hypothesis of study a comparison of column values (sig.) done with a significant level (0.05), in case the variable has value sig. less than (0.05) is consider to be significant variable. Bellow it can be illustrates the confidence variables (significant variables) that they are barriers of using e-shopping according to participants' perspectives:

- Lack of awareness: from the table above the sig. value (0.04) is less than (0.05), consequently the lack of awareness variable is considering a barrier of using e-shopping according to consumers' perspectives.
- Fear of the delay in arrival of the goods purchased: it can be noted from the table above that the sig. value (0.018) is less than (0.05), therefore Fear of the delay in arrival of the goods purchased is consider a barrier of using e-shopping according to consumers perspectives.
- lack of confidence in online shopping: from the table above the sig value is (0.043) which it is less than (0.05), as a result the factor of lack of confidence in shopping online is consider a barrier of using e-shopping to complete the process of purchasing goods and services.
- Fear of facing robbery and fraud: from the table above the sig. value (0.045) is less than (0.05), thus fear of facing robbery and fraud variable is consider a barrier of using e-shopping according to consumers perspectives.
- Lack to the payment system: from the table above the sig. value (0.047) is less than (0.05), thus the factor of Lack to the payment system is consider a barrier of using e-shopping according to consumers perspectives.

STRENGTH OF CONFIDENCE TEST FOR THE MODEL

Strength of confidence test carry out through value of (R^2), from the table (4) the value is (.475) it is means that the barriers selected in the present study explains (47.5%) of the barriers of e-shopping, the rest (52.5%) interpreted that there are other factors that obstruct consumers to practice online shopping.

TABLE 4: MODEL SUMMARY

Model	R	R Square	Adjusted R Square
1	.442[a]	.475	.350

CONCLUSIONS

Based on the above, it can be argued that consumers practicing of e-shopping is still weak despite the fact that some consumers use the Internet for online shopping and marketing. However, this practicing needs to be more awareness and confidence. This requires providing advices and accurate information make confidences to consumers as well as motivate them to use Internet as a method of shopping.

The present study found that according to consumers perspectives that facing them and is considers barriers of e-shopping are: lack of awareness of e-shopping, fear of delaying the arrival of items purchased from the Internet, lack of confidence in e-shopping, fear of facing " robbery and fraud," and the lack of payment system.

RECOMMENDATIONS

1. The authorities should work on activating the necessary laws and legislation for the purpose of protecting the consumers from robbery and fraud.
2. The necessity to increase the consumers' awareness and understanding of the importance of practicing e- shopping.
3. Efforts should be done on providing cultural environment in order to practicing e-commerce among members of society through the development of an intense and deliberate awareness programs aimed at schools, universities and institutions.
4. The necessity for attention to a set of basic elements such as security and privacy, services excellence, simplicity, and information provided to consumers.

THE DIFFICULTIES OF STUDY

Researchers faced some difficulties, and they are:

- Some consumers who distributed the questionnaire to them does not deal seriousness with the issues of study.
- Rarity of researches and studies in the local environment that looking at the subject of barriers of use e-shopping from the consumer's perspective.
- Bewilderment of some consumers in the market to receive the questionnaire along with responding it.

REFERENCES

1. Abu Saada, I., M. (2007) impediments to electronic commerce, in publishing centres and institutions of the Arab application distribution, Journal of Studies and business research, University of Benha, No. 2.
2. Al-edadi, S. A. (2014), Barriers to the use of e-marketing from the point of view of the Saudi consumers "applied study". Conference of the faculties of Business Administration Universities of the Cooperation Council, Saudi Arabia, February.
3. Al-Kurdy, A. S. (2012) The perceived risk study of the final consumer in e-marketing and its impact on the purchase decision online. Applieded on the Internet users in Egypt in the purchase of durable goods. Cairo: Faculty of Commerce - University of Banha. Master Dissertation not published.
4. Al-Nono, I. A. (2007) "Shopping through the internet, motivated adoption or rejection" PhD thesis unpublished. Gaza: University of Al-Azhar.
5. Al-sagal, M. (2010) Determinants of e-marketing and its impact on Jordanian consumer purchasing decision." Al al-Bayt University. A Master dissertation not published.
6. Al-Sayrafi, M. (2005) Electronic Commerce. Alexandria: Horus International Foundation.
7. Al-Shura, M. S., Kukes, H. A., Al-Zamil, A. M., and Al-avishat, T. M. (2009) E-commerce using the World Wide Web (Internet): motivators and barriers to Jordanian consumer. Arab Journal of Administration, Vol. 29. No. 1. PP: 1-24.
8. Amin, S. T. (2010), E-marketing, University of King Abdulaziz.
9. Burgess, S.M. & Bothma, C.H. (2007) International Marketing. Cape Town: Oxford University Press.
10. Haddad, A. "(2002)," Towards an integrated strategy for planning for the establishment of e-marketing system, Conference of creativity and innovation in the Arab administration in face of the challenges of the twentieth century atheist and Cairo: Arab Organization for Administrative Development.
11. Mezdour, F. (2004) The effect of the evolution of communication technology on the Algerian economic enterprise, intervention on e-marketing, University of Blida, Faculty of Economic Sciences.
12. Rashad, A.M. (2007), The factors affecting customer confidence in shopping over the Internet - An Empirical Study of websites for some industrial and service organizations, Journal of new horizons in business studies, Faculty of Commerce, University of Menoufia, , No. I, January.
13. Salama A. (2010), The problems of e-marketing in the Arab region, an article available online at: http://ahmedsalama83.blogspot.com/2010_10_01_archive.html
14. Shaheen, B. (2000), "Globalization and Electronic Commerce- Islamic vision," Cairo: Modern Farouk for printing and publishing, 1st ed.
15. Shamimri, A., and Abu Hamada, A. A. (2007) "The use of E-commerce from the point of the final consumer in the Arab Republic of Egypt and Saudi Arabia of view," Research Centre, Faculty of Economics and Management, University of Qassim, Saudi Arabia.

RELATIONSHIP BETWEEN KNOWLEDGE MANAGEMENT PROCESS AND CREATIVITY AMONG FACULTY MEMBERS: A CASE STUDY OF SAMBALPUR UNIVERSITY

SWAGATIKA NANDA
LECTURER
VIKASH SCHOOL OF BUSINESS MANAGEMENT
BARHAGUDA

ABSTRACT

The following research tries to study the relationship between knowledge management process and creativity among faculty members in the Sambalpur University. The research hypotheses based on knowledge management process including socialization, externalization, combination and internalization (SECI) and creativity. Correlation method was used in this study. The statistical population consisted of 100 faculty members in the Sambalpur University. The results showed that there is a significant relationship between knowledge management process and creativity.

KEYWORDS
knowledge management process, creativity, seci, university, faculty members.

INTRODUCTION

As Drucker (2000) has pointed out, the foundation of the 21th century organization is no longer money or capital or even technology: it is knowledge. Organizations in current scenario recognize knowledge as a key resource. Km plays an important role in the improvement of competitive advantage. The competitive advantage makes successful with the help of sharing of knowledge, developed human resource, best practices and achieving better decision. Organizations are the beginning to realize that there is a vast and a largely untapped asset diffused around in the organization knowledge (Gupta, Layer and Aroson, 2000). This realization not only occurs in business organizations but also in university. Education system in any country one of the factors affecting economic, social and cultural development. In present day educational environment deal with a variety of changes. As a result, applying a method for creating knowledge and implementing it is to reach educational goals and the maximum essential assets (Rad, 2006). providing training, research scholarship, applied research, knowledge creation is conducted by universities. The nation productivity can be measured through the quality education. Knowledge management is interconnected with organizational learning resides in knowledge management and influences the performance of an organization in the long term (Zadeh, 2011). Knowledge management has become important part of all organization. Universities are involved in knowledge creation, dissemination and learning hence they are perceived to be in the knowledge business. In present context organizations are need for efficient and effective employees for achieving their goal and create a unique one. The organization is successful in improving organizational and individual growth, motivation and creativity through Knowledge. For most of the institution achieving improved performance is not only depending on the successful development of tangible assets and natural resources but also in the effective management of knowledge. knowledge is today's most important property of organizations. The importance of knowledge to survive in the business environment has caused organizations to comparatively great weight activities such as producing; organizing, exchanging and applying knowledge under the umbrella term called km. the development of higher education institution is one of the factors closely together with the nation's development requirement (ismailk, ghari & Abdullah, 2011). from another perspective, universities play a vital role in contributing towards fulfilling the needs in the development process in a holistic manner which includes economic, political, Social and technological development (kok & cheah, 2011).

This research presents the definitions of km process and creativity, followed by a description of some issues in km and creativity it then provides comprehensive review of the literature in order to identify a list of km and creativity outcomes.

LITERATURE REVIEW

Rahimi, Arbabisarjou, Allamesh, And Aghababaei, (2011) wrote in a paper titled "Relationship between knowledge management process and creativity among faculty members in the university". The research hypotheses were examined while considering km process dimensions including Socialization, Combination, Externalization, And Internationalization (SECI) and Creativity based on demographic variables (gender, field of study, employment status). This study was conducted using the correlation method. The researcher found that there was a positive relationship between km process dimensions and creativity.

Manesh, Sadeghi (2015) titled his research paper "The relationship between knowledge management elements and organizational learning among faculty members of Islamic Azad University of Dezful". This study was conducted using correlation, descriptive-survey study. The data collection instruments include Nifeh's organizational learning (2001) and Lawson's knowledge management (2004) questionnaires. They found that there was a significant relationship between km and organizational learning of the faculty members of Islamic Azad University of Dezful.

Fattahiyani, Hoveida, Ali Siadat, Talebi in this study titled "The Relationship between Knowledge Management Enablers, Processes Resources and Organizational Performance in Selected Universities of the Isfahan Province". This addresses this gap by assessing a decomposed model of knowledge management capabilities. The aim was to provide insights into the relationships between particular knowledge resources and organizational performance that can help universities identify appropriate strategies for investing in and effectively deploying the knowledge resource. The results showed that for the current study, organizational structure, knowledge acquisition, knowledge application and knowledge protection were significantly related to organizational performance. However, technology, organizational culture and knowledge conversion did not have a significant impact.

Martins, Martins (2002) titled his research paper "An organizational culture model to promote creativity and innovation". This paper focused what type of organizational culture would support creativity and innovation in an organization. A new model was developed and compared with the theoretical model. The results of the comparisons between the preliminary model and the empirical study have indicated interesting similarities, differences and new perspectives. Strategy and behavior that encourage innovation were identified as determinants in both the models.

Goudarzvand Chgini titled his research paper "The study of relationship between knowledge management and organizational culture indicators". In this study knowledge management was a process that helps organization goals and control important information. And organizational culture was a collection of values, believes and though ways that organization members have common sides in that. To evaluate organizational culture used 4 dimensions Dension model and 60 questions. University is ready to supply today customers. so regarding to these results could said that desired society is in high level of adaptation,integration,agreementand basic values are in high level and show that organization had good goals.

Alnaweigah (2013) study entitled "The impact of knowledge management functions on the organizational excellence from the perspective of the University of Al-Taif Staff". This study emphasized that the reality of knowledge management at the University Of AL-TAIF in addition to exploring its impact o increasing excellence of its employees. The study has found that there was a statistically significant impact of the knowledge management dimensions on the dimensions of organizational excellence among the staff of Al-Taif University. The study has made number of suggestions in the light of findings.

Badah study entitled "Relationship between the knowledge management processes and the administrative empowerment with the employees of the ministry of higher education and scientific Research-Jordan". The study results demonstrated that the practice of degree of the knowledge processes management was high, and the employees' empowerments degree was high either. There was a statically signification relationship between the knowledge management process and the employees' empowerment degree. The researchers suggested training courses and workshops for the applications of knowledge management processes. Working

toward building trust between workers to empower them and enhance joint communication among them by investing their knowledge energies and abilities, and develop them being the intellectual capital of the ministry.

Allameh, Abbas study entitled "The relationship between knowledge management practices and innovation level in organization: case study of sub-companies of selected corporation in the city of Esfahan". The purpose of this paper was to examine the relationship between knowledge management practices and innovation level in organizations. Through a questionnaire, required data were gathered in sub-companies of three corporations in the city of Esfahan. The researcher found a strong, positive and significant relationship between knowledge management practices and innovation level in these companies. This study tries to provide empirical evidence in order to support the role of knowledge management in enhancing innovation. The researcher suggested try to produces and localize a relevant questionnaire on your own. Try to involve a large number of managers from various companies that are active in different environments and industries.

Hamid, Arbabisarjou, Aghababaei (2012) study titled "The Analysis of knowledge conversion processes in the university and its relationship with psychological empowerment among faculty members". The research hypotheses were examined while considering dimensions of knowledge conversion process including SECI and psychological empowerment based on demographic variables. The results indicate that there was a positive relationship between knowledge conversion processes and psychological empowerment. After reviewing the main tools and instruments for knowledge conversion process, this research provides recommendations so that universities could adopt the most appropriate knowledge conversion strategy in alignment with their psychological empowerment. Future studies may also focus on governance mechanisms that are practiced across organizations.

Loh, Tang, hay, and Hans-Dieter Evers (2013) study titled "Applying Knowledge Management in University Research". This paper based on the case of Singapore university.The researcher argued that knowledge management concepts and tools can indeed benefit and have the potential to advance the cause of research in the university. Institutions of higher education can benefit from km by creating and maintain relevant knowledge environment, and valuing knowledge. Km is increasingly being applied in the area of research.

IMPORTANCE OF THE STUDY

From various researches it has been identified, researchers did not focus km in university. Therefore, an attempt is made to emphasis on knowledge management process and creativity in the university. This study practically helps to provides recommendations so that universities could adopt the most appropriate km strategy in alignment with their creativity.

OBJECTIVES OF THE STUDY

1. To identify the relationship between knowledge management process and creativity among faculty members in the university.
2. To understand the knowledge management process framework and its objectivity at the university.
3. To determine the basic elements of knowledge management influence creativity in the university.

HYPOTHESES

H_{o1}: There is a significant difference between km and the creativity of the faculty members.
H_{a1}: There is a significant relationship between km and the creativity of the faculty members.
H_{o2}- There is a significant difference between knowledge socialization and the creativity of the faculty members.
H_{a2}:-There is a significant relationship between knowledge socialization and the creativity of the faculty members.
H_{o3}: There is a significant difference between knowledge externalization and the creativity of the faculty members.
H_{a3}: There is a significant relationship between externalization and the creativity of the faculty members.
H_{o4}: There is a significant difference between knowledge combination and the creativity of the faculty members.
H_{a4}: There is a significant relationship between combination and the creativity of the faculty members.
H_{o5}: There is a significant difference between knowledge internalization and the creativity of the faculty members.
H_{a5}: There is a significant relationship between internalization and the creativity of the faculty members.

METHODOLOGY

This study was conducted using the correlation research method. Correlation, is the ability to prove a positive or negative correlation between two subjects (Dellavar, 2007). The statistical population consists of 100 faculty members of Sambalpur University. The tools for gathering data was a standard questionnaire for knowledge management process and creativity items (Rahimi et al, 2010).out of 100 questionnaires 76 complete questionnaires was received. The source of data was collected by both primary and secondary primary data was collected through questionnaire. Secondary data was collected through journal, articles, books, various websites.

DATA ANALYSIS AND INTERPRETATION

TABLE 1: RESULTS FROM CORRELATION COEFFICIENT OF COMPONENTS OF KNOWLEDGE MANAGEMENT PROCESS AND CREATIVITY OF THE FACULTY MEMBERS

Hypotheses	Variable	frequency	r	sig
H_{a1}	Knowledge management process and creativity	76	.72	.000
H_{a2}	knowledge socialization and creativity	76	.72	.000
H_{a3}	Knowledge externalization and creativity	76	.74	.000
H_{a4}	Knowledge combination and creativity	76	.94	.000
H_{a5}	knowledge internalization and creativity	76	.91	.000

Analysis of the results related to H_{a1} indicated that correlation coefficient between the knowledge management process and creativity of the faculty members was significant at the level of p<=0.05.the rate of relationship between two variables was r=.72. So, there is a moderate degree of correlation between two variables.

Analysis of the results related to Ha2 indicated that correlation coefficient between the knowledge socialization and creativity of the faculty members was significant at the level of p<=0.05.the rate of relationship between two variables was r=.72. So, there is a moderate degree of correlation between two variables.

Analysis of the results related to Ha3 indicated that correlation coefficient between the knowledge externalization and creativity of the faculty members was significant at the level of p<=0.05.the rate of relationship between two variables was r=.74. So, there is a moderate degree of correlation between two variables.

Analysis of the results related to Ha4 indicated that correlation coefficient between the knowledge combination and creativity of the faculty members was significant at the level of p<=0.05.the rate of relationship between two variables was r=.94. So, there is a very high degree of correlation between two variables.

Analysis of the results related to Ha5 indicated that correlation coefficient between the knowledge internalization and creativity of the faculty members was significant at the level of p<=0.05.the rate of relationship between two variables was r=.91. So, there is a high degree of correlation between two variables.

DISCUSSION

Analysis of the results related to H2 indicated that correlation coefficient between the knowledge socialization and creativity of the faculty members was significant at the level of p<=0.05.the rate of relationship between two variables was r=.72. So, there is a correlation between two variables. The faculty members try to understand others thoughts and personal information and data. The members exchange their personal and professional experiences.

Analysis of the results related to H3 indicated that correlation coefficient between the knowledge externalization and creativity of the faculty members was significant at the level of p<=0.05. The rate of relationship between two variables was r=.74. So, there is a correlation between two variables. Its indicates that the members tend to highlight their purposes by offering the objective instances. To describe the concepts and are encouraged to use the net.

Analysis of the results related to H4 indicated that correlation coefficient between the knowledge combination and creativity of the faculty members was significant at the level of p<=0.05.the rate of relationship between two variables was r=.94. So, there is a correlation between two variables. These results show that the members have little time to think about what is discussed.

Analysis of the results related to H5 indicated that correlation coefficient between the knowledge internalization and creativity of the faculty members was significant at the level of p<=0.05. The rate of relationship between two variables was r=.91. So, there is a correlation between two variables. The skilled individuals are encouraged to teach their skills and experiences to others and to cooperate with professionals in other fields.

An overview of this results knowledge combination has the highest place in the domain of km process, which is followed by externalization, socialization, and internalization.

FINDINGS

- The knowledge socialization and creativity of the faculty members was significant.
- The knowledge externalization and creativity of the faculty members was significant.
- The knowledge combination and creativity of the faculty members was significant.
- The knowledge internalization and creativity of the faculty members was significant.
- Knowledge combination has the highest place in the knowledge management process, which is followed by externalization, socialization and internalization.

RECOMMENDATIONS

- Universities could adopt the most appropriate knowledge management strategy combination with their creativity.
- Knowledge management should focus on organizational development and strengthen it.
- Spell out on the importance of knowledge management practices as a motivational factor for the creativity of faculty members.

CONCLUSION

After analyzing the main tools for managing knowledge, this research provides recommendations so that universities could adopt the most appropriate km strategy combination with their creativity. Knowledge management should focus on organizational development and strengthen it. Organizational development will enhance the knowledge management components. From the literature review, the present study helps managers to diagnosis its km implementation and implemented strategy. The complete SECI models to an organization not fully applicable. There many factors that affects the successful application of SECI models. The findings are based on only one organization. Although this study was challenged by many limitations, it enriches km literature and spell out on the importance of km practices as a motivational factor for the creativity of faculty members. Practically, this study provides a guide for practitioners on how km practices play a vital role in ensuring a quick and easy adjustment when organization circumstances change unexpectedly. Future research may focus on across organization. Future studies may also focus on frameworks of knowledge sharing in the context of teams or groups from multiple organizations. Such research efforts would help promoting learning and thereby, improving theory and practice of knowledge management.

REFERENCES

1. Aghaee Fishnet, "Creativity and innovation in human and organization" Tehran: publication of Termeh,1999

1. Baer,m., & oldham, G.R."The curvilinear relation between experienced creative time pressure and creativity" Journal of Applied PSYCHOLOGY,91(4),963-970.
2. Chapman, R., & Magnusson, M.Continousinnovation, performance and K M. Knowledge and process management" 2006
3. Cullen, J. "KM. Journal of the American Society for Information Science and Technology" 52(13), 1190-1192.2001
4. Davenport, I.H. "Working knowledge: How organizations manage what they know." Boston, MA: Harvard Business School press, 1998.
5. Dellavar, A. "Research foundation in behavioral sciences." Tehran: publication of Doran. 2007
6. Eder, p. & Sawyer, J. E. Ameta, analytic examination of employee creativity. Paper presented at the 22nd annual conference, society of industrial and organizational psychology(SIOP), New York, NY, April, 2007
7. Fattahiyan s., hoveida, r.siadat, s.a., talebi, h. "The Relationship between Knowledge management enablers, processes, resources and organizational performance in universities (case study: selected universities of the Isfahan province)",2013
8. FELDMAN, R. "Understanding psychology". Mc Graw Hill. 1990
9. Fereshtch behard manesh, reza sadeghi, "The relationship between knowledge management elements and organizational learning among faculty members of Islamic Azad University of Dezful" International journal of new trends in education and literature, vol. 1, no. 6. 2015
10. Gholy Zadeh, R. (2005). The rate of KM process and organizational culture in University of Mashhad Firdausi. Journal of Educational and Psychological Studies University of Mashhad, 4.2005
11. Hall, H. L." KM in various periods: Exchanging explicit and tacit knowledge." University of North Texas, 2005
12. Kangas, A "The relationship between organizational culture and innovations in KM". International Journal of Educational Management, 12(3), 212-220,2006
13. Martins, E. C. "Relationship between organizational culture and creativity." University of South Africa, Pretoria, MLNF dissertation, 2000
14. Rahimi.H, Allame, M, Aghababaei, R. Arbabi, A. "Relationship between Knowledge Management Process and Creativity among Faculty Members in the University," Interdisciplinary Journal of Information, Knowledge and Management, vol. 6, 2011
15. Rodney Mc Adam "knowledge management as a catalyst for innovation within organization: a qualitative study" Knowledge and process management, vol.7, no.4,2000
16. Ward, T. E. "Implementing KM to support executive decision making in a joint military Environment" Capella University, 2006

RATIO ANALYSIS BETWEEN PRISM AND RAMCO CEMENT

INNA YADAV
LECTURER
DRONACHARYA GOVERNMENT COLLEGE
GURGAON

ABSTRACT

The main purpose of this research paper is to compare the two leading Indian cement company's Prism cement and Ramco cement. The methodology is based on a comprehensive literature review of major contribution made in this field of cement industry. The opinions and information contained in this paper are from secondary data studies, published material and also include author personal opinions. For this purpose, we use ratio analysis as tool for the comparison. My conclusion is the Ramco much better than the Prism in all areas.

KEYWORDS
cement industry, Prism cement, Ramco cement.

INTRODUCTION

Indian Cement Industry is the second largest cement producer in the world after China with a total capacity of 151.2 Million Tones (MT). Government of India has been giving immense boost to various infrastructure projects, housing facilities and road networks, the cement industry in India is currently growing at an enviable pace. In the coming years more growth in the Indian cement industry is expected to come. It is predicted that the production in India would rise to 236.16 MT in FY11 & expected to rise to 262.61 MT in FY12 in the Cement Industry.

The Indian cement industry is dominated by 20 companies, which account for almost 70% of the total cement production in India. The companies all over India have produced 11 MT cement during April-September 2009. The Indian Cement industry plays a major role in the growth of the nation for that case in any country. Industry Cement Industry was under full control and supervision of the government. However, it got great relief at a large extent after the economic reform which made its growth easier. Still government interference, especially in the pricing, is evident in India.

In spite of it being second largest cement producer in the world, Indian Cement industry falls in the list of lowest per capita consumption of cement with 125 kg. The reason for this is poor rural people who mostly live in mud huts and cannot afford to have the commodity. The demand and supply of cement in India has grown up over the years. In a fast developing economy as India there is always large possibility of expansion of cement industry. The Indian cement industry is one of the vital industries for economic development. The total utilization of cement in a year is used as an indicator of economic growth. Cement contributes as a necessary constituent of infrastructure development and a key raw material for the construction industry, especially in the government's infrastructure development plans in the context of the nation's socio-economic development.

SIZE OF THE INDUSTRY

The Cement Industry in India is the second largest in the world. Cement Industry constitutes of 140 large and more than 365 mini cement plants. The Indian Cement Industry's capacity at the beginning of the year 2009-10 was 217.80 million tones. The Indian Cement Industry comprises of 125 units with an installed capacity of 148.28 million tones and more than 300 mini cement plants with an estimated capacity of 11.10 million tones per annum.

Actual Indian cement production in 2002-03 was 116.35 million tones as against a production of 106.90 million tones in 2001-02, registering a growth rate of 8.84%. Keeping in view the trend of growth of the industry in previous years, a production target of 126 million tones has been fixed for the year 2003-04. During the period April-June 2003, a production (provisional) was 31.30 million tones. The industry has achieved a growth rate of 4.86 per cent during this period.

TOTAL CONTRIBUTION TO THE ECONOMY/ SALES

The Indian Cement Industry comprises of 125 large cement plants with an installed capacity of 148.28 million tones and more than 300 mini cement plants with an estimated capacity of 11.10 million tones per annum. The Cement Corporation of India is a Central Public Sector Undertaking which has 10 units. State Governments owns 10 large cement plants. Indian Cement production in 2002-03 was 116.35 million tones as against a production of 106.90 million tones in 2001-02, registering a growth rate of 8.84%.

OBJECTIVE OF THE RESEARCH

Main objective of the study is to find out the comparison between the Prism cement and Ramco cement.

HISTORY OF INDIAN CEMENT INDUSTRY

Size of the INDUSTRY	The total capacity is spread over 129 plants, which is owned by 54 major companies across the country.
Geographical distribution	Mumbai, Ahmedabad, Hyderabad, Chennai, Pune, New Delhi, Bangalore, Kolkata, Delhi, Rajkot, Coimbatore, Vadodara, Ghaziabad, Nagpur, Faridabad, Jaipur, Surat, Aurangabad, Indore, Gurgaon, Jodhpur, Thane, Noida, Secunderabad, Thiruchirapalli, Navi Mumbai, Ludhiana, Guwahati, Nashik, Patna, Bhilai, Raipur, Howrah, Siliguri, Kota, Bhubaneswar, Madurai, Ankleshwar, Vapi, Chandigarh, Jamshedpur, Morbi, Udaipur, Bhavnagar, Kanpur, Lucknow, Tuticorin, Vijayawada, Beawar, Goa
Output per annum	217.80 million tones
Percentage in world market	8% of share

HISTORY

Firstly, in 1889 a Kolkata-based company started manufacturing cement from Argillaceous. Later the industry started getting the organized shape in the early 1900's. India Cement Company Ltd was established in 1914 in Porbandar with a capacity of 10,000 tons and production of 1000 tons installed. The first initial thrust to the cement industry in India was during the World War 1 and then the industry started growing at a fast rate in terms of production, manufacturing units, and installed capacity. This particular stage in the history was referred to as the Nascent Stage of Indian Cement Industry. In 1927, Concrete Association of India was established to create public awareness on the utility of cement as well as to propagate cement consumption. In the year 1956 the Indian Cement Industry saw the price and distribution control system, which was established to ensure fair price model for consumers as well as manufacturers. Later, government authorized new manufacturing units (as well as existing units going for capacity enhancement) to put a higher price tag for their products in the year 1977. After some years, government introduced a three-tier pricing system with different pricing on cement produced in high, medium and low cost plants. In 1982 Government of India introduced a quota system to give impetus to the cement industry.

A quota of 66.60% was imposed for sales to Government and small real estate developers. Lower quota at 50% was affected for new units and sick units. The remaining 33.40% was allowed to be sold in the open market. These changes had the desirable effects on the Indian Cement industry. Profitability of the manufacturers increased substantially, but such rising input cost was a cause for concern. Complete freedom to the cement industry was given in the year 1989, to gear it up to meet the challenges of free market competition due to the impending policy of liberalization. In 1991 the industry was de- licensed which resulted in an accelerated growth for the industry and availability of state of the art technology for modernization. Major players invested heavily for capacity expansion and the industry laid greater focus on exports to maximize the opportunity available in the form of global markets. The role of the government has been extremely crucial in the growth of the industry.

ANALYSIS

TABLE 1: FINANCIAL RATIO OF PRISM CEMENT & RAMCO CEMENT

FINANCIAL RATIO OF PRISM CEMENT						
RATIO	**PRISM MAR'15**	**PRISM MAR'14**	**PRISM MAR'13**	**PRISM MAR'12**	**PRISM MAR'11**	**PRISM TOTAL**
CURRENT RATIO	0.97	0.83	0.73	0.77	0.93	4.23
QUICK RATIO	0.83	0.76	0.66	0.54	0.63	3.42
DEBT EQUITY RATIO	1.73	1.56	1.18	0.9	0.97	6.34
INVENTORY TURNOVER RATIO	10.43	10.74	10.2	13.9	12.95	58.22
DEBTORS TURNOVER RATIO	10.21	9.81	11.57	14.74	14.14	60.47
GROSS PROFIT MARGIN	2.63	-0.72	2.1	2.93	6.24	13.18
NET PROFIT MARGIN	0.26	-1.64	-1.24	-0.66	2.84	0.44
INTEREST COVERAGE RATIO	0.71	0.43	0.56	0.84	2.35	13.11
DIVIDEND PAYOUT RATIO NET PROFIT	0	0	0	0	51.25	51.25
EARNING PER SHARE RATIO	0.29	-1.62	-1.18	-0.6	1.9	-0.85
FINANCIAL RATIO OF THE RAMCO CEMENT						
RATIO	**RAMCO MAR'15**	**RAMCO MAR'14**	**RAMCO MAR'13**	**RAMCO MAR'12**	**RAMCO MAR'11**	**RAMCO TOTAL**
CURRENT RATIO	0.52	0.46	0.48	0.38	0.43	2.27
QUICK RATIO	0.49	0.42	0.41	0.34	0.36	2.02
DEBT EQUITY RATIO	0.86	0.9	0.84	1.03	1.14	4.77
INVENTORY TURNOVER RATIO	8.03	5.37	6.44	16.82	7.57	44.23
DEBTORS TURNOVER RATIO	10.65	12.14	14.94	16.63	15.83	70.19
GROSS PROFIT MARGIN	12.71	6.97	18.93	21.77	15.59	75.97
NET PROFIT MARGIN	6.64	3.73	10.53	11.76	8.06	40.72
INTEREST COVERAGE RATIO	2.84	1.82	4.3	4.58	3.13	16.67
DIVIDEND PAYOUT RATIO NET PROFIT	14.75	17.3	17.71	15.47	14.11	79.34
EARNING PER SHARE RATIO	10.18	5.79	16.96	16.18	8.87	57.98

Current Ratio: This ratio establishes the relationship between current assets and current liabilities. With the help of this ratio the ability of the business to pay its short – term liabilities is determined. This ratio is calculated by dividing Current assets by current liabilities. **Current ratio 2:1 is considered ideal**.

Current Ratio = Current Assets/ Current Liabilities

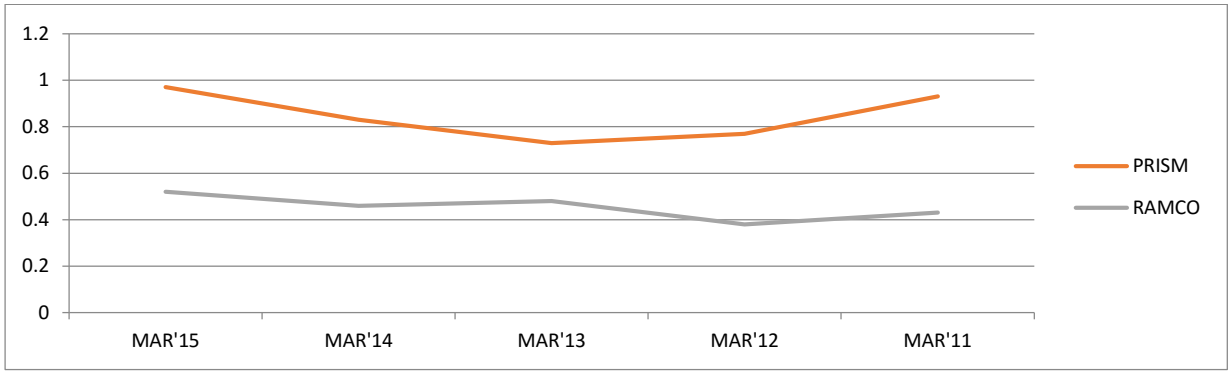
This ratio gives us the information as to whether the business has adequate current assets to pay its current liabilities. If current ratio is 2:1, it means that the current liabilities would be paid even if there is 50% fall in the prices of current assets. The greater this ratio, better will be the short – term solvency of the firm and more safe will be the interests of the short term creditors. This ratio should not be too high or too low. High ratio is an indicator of weak investment policy of the firm and low ratio increases the risk in payment of short – term debts.

TABLE 2: CURRENT RATIO 2015-2011 OF PRISM CEMENT & RAMCO CEMENT

YEAR	PRISM	RAMCO
MAR'15	0.97	0.52
MAR'14	0.83	0.46
MAR'13	0.73	0.48
MAR'12	0.77	0.38
MAR'11	0.93	0.43

The above table shows Current Ratio of Prism and Ramco cement. This table indicate current ratio of last 5 year of prism it was 0.97,0.83,0.73,0.77,0.93 and Ramco it was 0.52,0.46,0.48,0.38,0.43.

GRAPH 1



The above line graph shows Current Ratio of Prism and Ramco Ltd. For the mentioned period. The Current Ratio of Prism for the year 2015 it was 0.97, 2014 it was 0.83, 2013 it was 0.73, 2012 it was 0.77, 2011 it was 0.93. It also shows Current Ratio of Ramco for the year 2015 it was 0.52, 2014 it was 0.46,2013 it was 0.48, 2012 it was 0.38, 2011 it was 0.43. So Now we can say Current Ratio of Prism is better than the Current Ratio of Ramco for the all financial year. So the Current Liquidity position of Prism Ltd. Is better than the Ramco Ltd. So Now we can conclude that Prism Ltd. Is easily able to pay it current debt on the time its means short term solvency position of Prism is better than Ramco.

Quick Ratio: This ratio helps to measured firm capacity to pay its current liabilities immediately. This ratio is calculated by dividing liquid assets by current liabilities. Quick Ratio is also known as Liquidity Ratio.

Liquidity Ratio = Liquid assets / Current liabilities

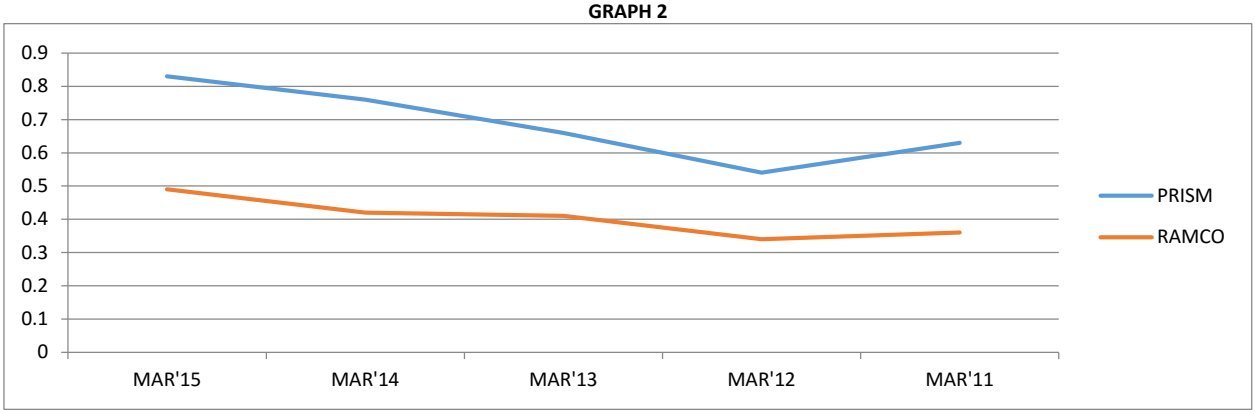
Liquid assets are those assets which can immediately or in a short period be converted into cash without much loss. Liquid assets do not include stock and prepaid expenses. Prepaid expenses can't be realized liquid ratio of 1:1 is considered a standard ratio. The higher this ratio more will be the short –term solvency of the business. This ratio is calculated to remove the shortcoming of the current ratio. **This ratio considered better than current ratio**.

TABLE 3: QUICK RATIO 2015-2011 OF PRISM CEMENT & RAMCO CEMENT

YEAR	PRISM	RAMCO
MAR'15	0.83	0.49
MAR'14	0.76	0.42
MAR'13	0.66	0.41
MAR'12	0.54	0.34
MAR'11	0.63	0.36

The above table show Quick ratio of Prism and Ramco cement. This table indicate quick ratio of last 5 year of prism it was 0.83, 0.76, 0.66, 0.54, 0.63 and Ramco it was 0.49, 0.42, 0.41, 0.34, 0.36.

GRAPH 2



The above line graph shows Quick Ratio of Prism and Ramco Ltd. for the mentioned year. The Quick ratio of Prism Ltd. for the year 2015 it was 0.83, 2014 it was 0.76, 2013 it was 0.66, 2012 it was 0.54, 2011 it was 0.63. It also shows the Quick ratio of Ramco Ltd. for the year 2015 it was 0.49,2014 it was 0.42, 2013 it was 0.41, 2012 it was 0.34, 2011 it was 0.36. So now we can say that Quick Ratio of Prism Ltd. is better than Quick Ratio of Ramco Ltd. For the all financial year. It means Prism Ltd. can meet its short – term liabilities quite easily than the Ramco Ltd. Thus, the interest of short –term creditors are safe in the Prism Ltd. to comparison in Ramco Ltd.

Debt – Equity Ratio: This ratio is very significant for the evaluation of capital structure of a firm. This ratio explains the in what proportion the owners and creditors of the business have provided. With the help of this ratio creditors can know whether their interests are safe or not. They can also analysis the capacity of business to repay principal on due date. If the debt –equity ratio is 1:2, it means that for every one rupee of external liability, there are two rupees of shareholders funds. This ratio establishes relationship between the shareholders funds and debt-funds.

Debt –Equity Ratio = External Equities/ Internal Equities

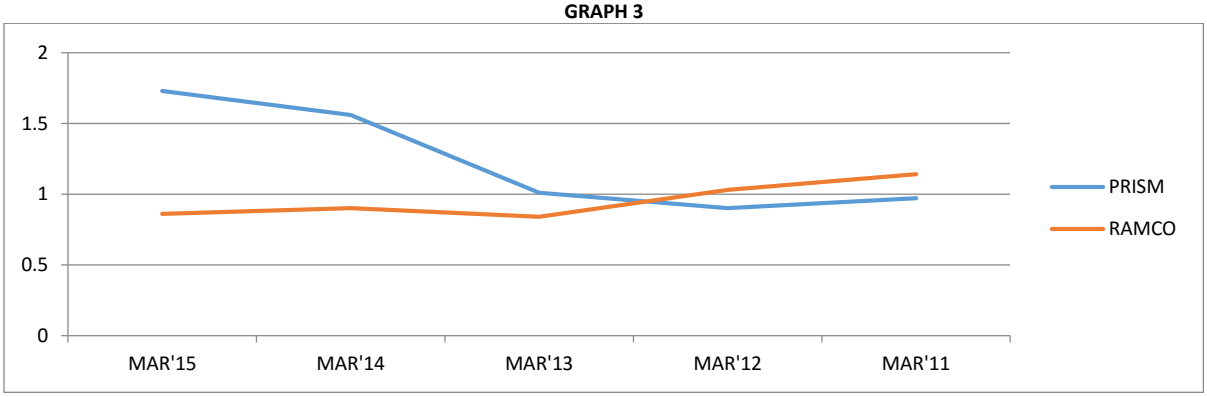
Generally, this ratio of 1:1 is considered satisfactory. If the debt- equity ratio is quite high, creditors of the firm will try to interfere in the affairs of the firm. It will also have to accept restrictive conditions for raising further funds in future. If the firm can earn high rate of profits as compared to the rate of interest payable, it can maximize the return for shareholders by using high debt –equity ratio.

TABLE 4: DEBT – EQUITY RATIO 2015-2011 OF PRISM CEMENT & RAMCO CEMENT

YEAR	PRISM	RAMCO
MAR'15	1.73	0.86
MAR'14	1.56	0.9
MAR'13	1.01	0.84
MAR'12	0.9	1.03
MAR'11	0.97	1.14

The above table shows Debt –Equity Ratio of Prism and Ramco cement. This table indicate Debt-Equity ratio of prism last 5 year it was 1.73,1.56,1.01,0.9,0.97 and Ramco it was 0.86,0.90,0.84,1.03,1.14.

GRAPH 3



The above line graph shows Debt – Equity Ratio of Prism and Ramco Ltd. for the mentioned period. The Debt –Equity Ratio of Prism for the year 2015 it was 1.73, 2014 it was 1.56, it was 2013 1.01, 2012 it was 0.9, 2011 it was 0.97. It also show Debt –Equity Ratio of Ramco Ltd.for the year 2015 it was 0.86, 2014 it was 0.90, 2013 it was 0.84, 2012 it was 1.03, 2011 it was 1.14. So now we can say that Debt- Equity Ratio of Prism Ltd is better than Ramco Ltd. for all financial year. Its means long –term solvency position of Prism Ltd. is better than the Ramco Ltd. So now we can conclude Prism Ltd. is easily able to pay principal on due date.It means interest of creditors is more secure in Prism Ltd.

Inventory Turnover Ratio: This ratio establishes relationship between costs of goods sold and average inventory. This ratio indicates the fact whether the investment in inventory is within a proper limit or not. With the help of this ratio, it can be ascertained how many times the stock has been converted into sales during the year. Stock turnover ratio measures the rate of sale of stock.

Inventory Turnover Ratio = Cost of goods sold/ Average Inventory

The higher this ratio, the better it will be. Higher inventory turnover ratio is indicator of efficient inventory management. It means that stock is being sold fast after its purchase and it has not to be kept in god own for long time. But a high turnover ratio should be analyzed carefully as it may results in lower investment in inventory. Lower investment in inventory may result in serious consequences in future. In other hand lower inventory turnover ratio is an indicator of inefficient management. It expresses the fact that greater investment has been made in inventories. Lower inventory turnover may results low quality of production, valuation of closing stock at high price, inclusion of worthless and

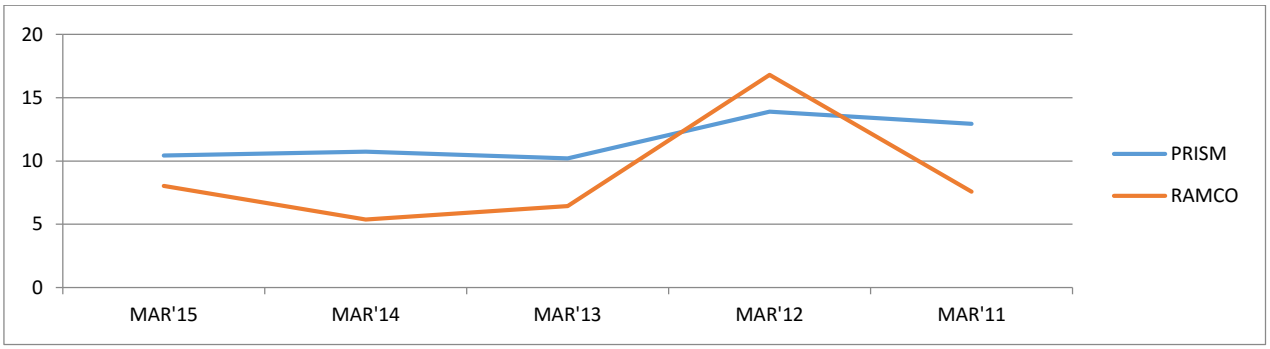
Old product in stock, etc. This ratio is standardized because it depends on the nature of industry.

TABLE 5: INVENTORY TURNOVER RATIO 2015-2011 OF PRISM CEMENT & RAMCO CEMENT

YEAR	PRISM	RAMCO
MAR'15	10.43	8.03
MAR'14	10.74	5.37
MAR'13	10.2	6.44
MAR'12	13.9	16.82
MAR'11	12.95	7.57

The above table show Inventory Turnover Ratio of Prism and Ramco cement. The table indicate Inventory turnover ratio for last 5 year of Prism it was 10.43, 10.74,10.2, 13.9, 12.95 and Ramco it was 8.03,5.37,6.44,16.82,7.57.

GRAPH 4



The above line graph shows Inventory Turnover Ratio of Prism and Ramco Ltd. for the mentioned period. The Inventory Turnover Ratio of Prism for the year 2015 it was 10.43, 2014 it was 10.74, it was 2013 10.2, 2012 it was 13.9, 2011 it was 12.95. It also show Inventory Turnover Ratio of Ramco Ltd. for the year 2015 it was 8.03, 2014 it was 5.37, 2013 it was 6.44, 2012 it was 16.82, 2011 it was 7.57. So now we can say that Inventory Turnover Ratio of Prism Ltd is better than Ramco Ltd. for all financial year. Its means efficient management of various assets in Prism Ltd. is better than the Ramco Ltd. So now we can conclude Prism Ltd. is easily able to convert is stock in sales.

Debtors Turnover Ratio: -The debtors turnover ratio measures quickly the debtors or receivables of business are realized. **It also indicates how efficiently the debtors of business are being realized**. It can indicator of the liquidity of debtors. This ratio establishes relationship between credit sales and average debtors. Accounts receivables include debtors and bill receivable. High debtors turnover ratio are indicators of efficient management of debtors. Higher the debtors turnover ratio, better it will be for the business.

Debtors Turnover Ratio: Credit sales / Average Accounts Receivable

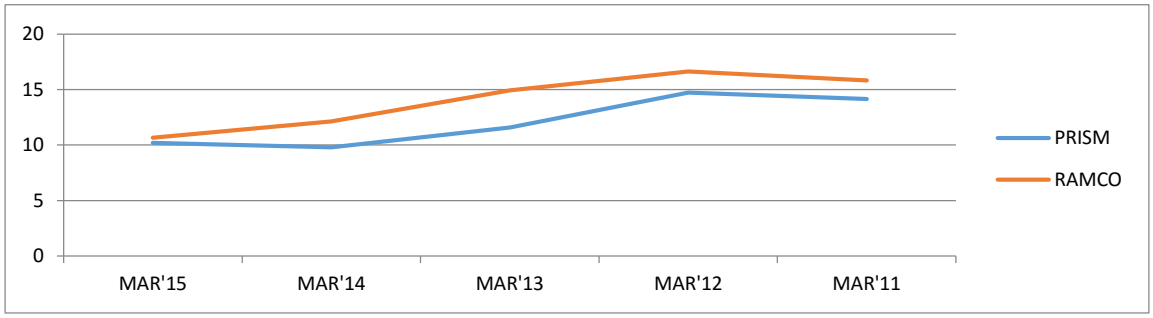
The Debtors turnover ratio should not be very high or very low. Whether the debtors turnover ratio of a business is proper or not, it can examined comparing this ratio with the ratio of other firms in the industry.

TABLE 6: DEBTORS TURNOVER RATIO 2015-2011 OF PRISM CEMENT & RAMCO CEMENT

YEAR	PRISM	RAMCO
MAR'15	10.21	10.65
MAR'14	9.81	12.14
MAR'13	11.57	14.94
MAR'12	14.74	16.63
MAR'11	14.14	15.83

The above table show Debtors Turnover Ratio of Prism and Ramco cement. This table indicate current ratio of last 5 year of prism it was 10.21,9.81,11.57,14.74,14.14and Ramco it was 10.65,12.14,14.94,16.63,15.83.

GRAPH 5



The above line graph shows Debtors turnover Ratio of Prism and Ramco Ltd.for the mentioned year. The Debtors Turnover ratio of Prism Ltd.for the year 2015 it was 10.21,2014 it was 9.81, 2013 it was 11.57, 2012 it was 14.74, 2011 it was 14.14. It also show the Debtors Turnover ratio of Ramco Ltd. for the year 2015 it was 10.65,2014 it was 12.14, 2013 it was 14.94, 2012 it was 16.63, 2011 it was 15.83. So now we can say that Debtors Turnover Ratio of Ramco Ltd. Is better than Prism Ltd. For the all financial year. **It means Debts of Ramco Ltd. are being realized quickly and no unnecessary funds are blocked in them to comparison Prism Ltd.**

Gross Profit Ratio: Profitability is a measure of efficiency and control. Profitability expresses the efficiency and effectiveness of business with which the business has been operated. This ratio establishes relationship between gross profit and sales.

Gross Profit Ratio = Gross Profit / sales x 100

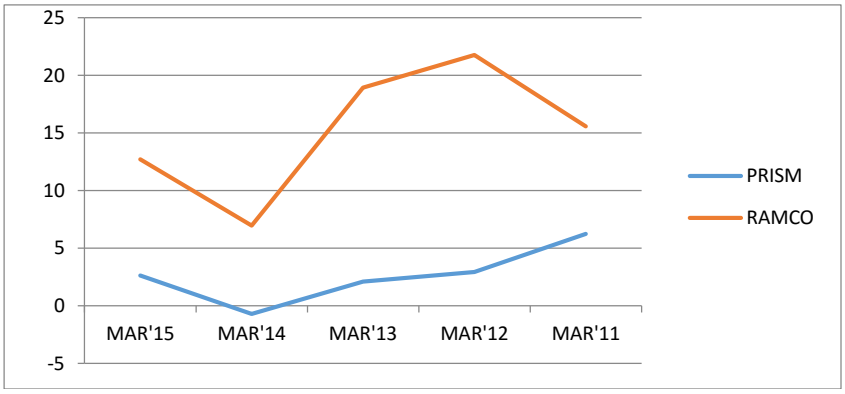
Gross profit is the result of relationship among sales and costs and price. It can be increased or reduced by changing any of these variables. **High gross profit ratio is the sign of efficient management**. Increase in price or reduction in costs can result in high gross profit ratio. Sometimes, lower valuations of opening stock or higher valuation of closing stock can also increase gross profit ratio. Therefore, the reason for high or low gross profit ratio should be properly analyzed. The rate of gross profit in a business should be such that divided at the proper rate could be given the owners after meetings firm's all operating expenses and fixed costs.

TABLE 7: GROSS PROFIT RATIO 2015-2011 OF PRISM CEMENT & RAMCO CEMENT

YEAR	PRISM	RAMCO
MAR'15	2.63	12.71
MAR'14	-0.72	6.97
MAR'13	2.1	18.93
MAR'12	2.93	21.77
MAR'11	6.24	15.59

The above table show Gross Profit Ratio of Prism and Ramco cement. This table indicate Gross Profit ratio of last 5 year of prism it was 2.63,-0.72, 2.1, 2.93, 6.24 and Ramco it was 12.71, 6.97., 18.93, 21.77, 15.59.

GRAPH 6



The above line graph shows Gross Profit Ratio of Prism and Ramco Ltd. for the mentioned year. The Gross Profit ratio of Prism Ltd. for the year 2015 it was 2.63, 2014 it was -0.72, 2013 it was 2.1, 2012 it was 2.93, 2011 it was 6.24. It also show the Gross Profit ratio of Ramco Ltd. for the year 2015 it was 12.71,2014 it was 6.97, 2013 it was 18.93, 2012 it was 12.77, 2011 it was 15.59. So now we can say that **Gross profit Ratio of Ramco Ltd. is better than Gross Profit Ratio of Prism Ltd. for the all financial year**. It means Ramco Ltd. have efficient management to compare Prism LTD.

Net Profit Ratio: This ratio is also called net profit margin. This is the ratio net profit to sales. The greater the ratio, the more profitable the business will be. Net Profit Ratio calculated as under:

Net Profit Ratio = Net Profit / Net Sales x100

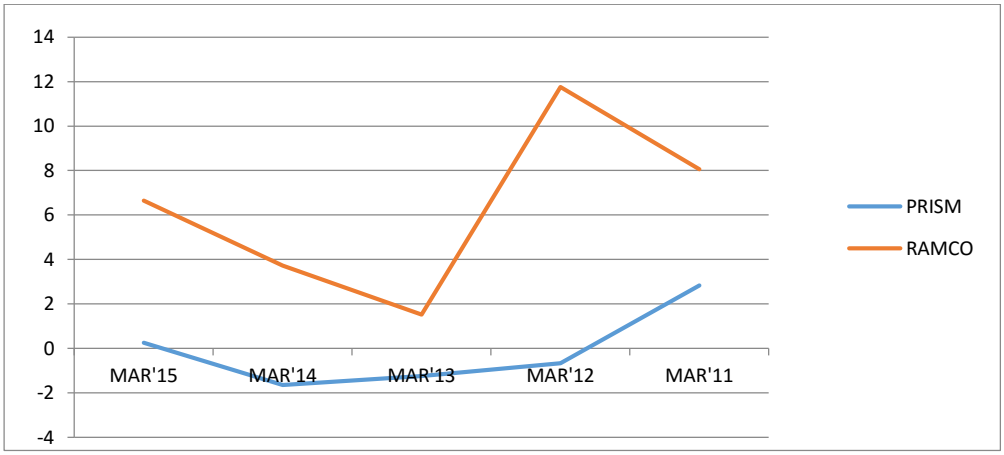
Net Profit is used to measure the overall profitability of business. Net profit margin is considered an indicator of the success of management to operate the business successfully. Gross profit ratio and net profit ratio should be calculated simultaneously because the trend of these two ratio can be different. It is possible the gross profit ratio may be increasing but net profit ratio may be increasing or even show a decreasing trend.

TABLE 8: NET PROFIT RATIO 2015-2011 OF PRISM CEMENT & RAMCO CEMENT

YEAR	PRISM	RAMCO
MAR'15	0.26	6.64
MAR'14	-1.64	3.73
MAR'13	-1.24	1.53
MAR'12	-0.66	11.76
MAR'11	2.84	8.06

The above table shows Current Ratio of Prism and Ramco cement. This table indicate current ratio of last 5 year of prism it was 0.0.26,-1.64,-1.24,-0.66, 2.84, and Ramco it was6.64, 3.73, 1.53, 11.76, 8.06.

GRAPH 7



The above line graph shows Net Profit Ratio of Prism and Ramco Ltd. for the mentioned year. The Net Profit ratio of Prism Ltd. for the year 2015 it was 0.26, 2014 it was -1.64, 2013 it was -1.24, 2012 it was -0.66, 2011 it was 2.84. It also show the Net Profit ratio of Ramco Ltd. for the year 2015 it was 6.64,2014 it was 3.73, 2013 it was 1.53, 2012 it was 11.76, 2011 it was 8.06. So now we can say that Net Profit Ratio of Ramco Ltd. is better than Net Profit Ratio of Prism Ltd. for the all financial year. It means Ramco ltd. management operates business successfully to comparison Prism ltd.

Interest Coverage Ratio: To evaluate the long term solvency, the second type of ratio are called coverage ratio. With the help of this ratio, it can be ascertained whether the interest on long term –term debts of business can be paid out of profit or not. The greater this ratio, the safer will be the interests of creditors. If the ratio is low, management may face to raise loans in future. **In an industrial organization, it should be 6 or 7.**

Interest Coverage Ratio: Earnings before Interest and Taxes [EBIT] / Interest

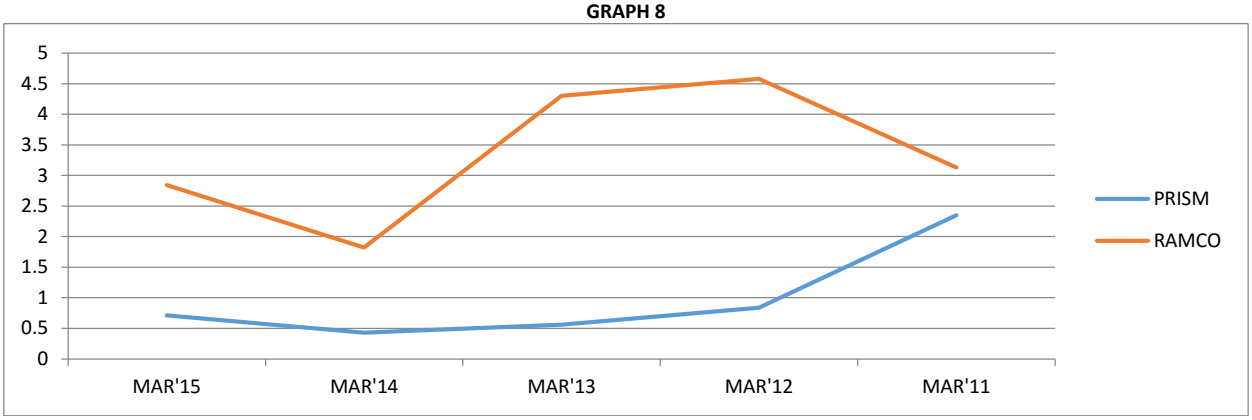
They are calculated on the basis of information given in profit and loss account. In the ordinary course of business, the claims of creditors are not met by selling the fixed assets. These claims are paid out of the income of firm. If the firm is able to pay these claims in time, the financial position of the firm will be considered sound.

TABLE 9: INTEREST COVERAGE RATIO 2015-2011 OF PRISM CEMENT & RAMCO CEMENT

YEAR	PRISM	RAMCO
MAR'15	0.71	2.84
MAR'14	0.43	1.82
MAR'13	0.56	4.3
MAR'12	0.84	4.58
MAR'11	2.35	3.13

The above table show Interest Coverage Ratio of Prism and Ramco cement. This table indicate Interest coverage ratio of last 5 year of prism it was 0.71, 0.43, 0.56,.84, 2.35 and Ramco it was 2.84, 1.82, 4.3, 4.58, 3.13.

GRAPH 8



The above line graph shows Interest Coverage of Prism and Ramco Ltd. for the mentioned year. The Interest Coverage ratio of Prism Ltd. for the year 2015 it was 0.71, 2014 it was 1.43, 2013 it was 0.56, 2012 it was 0.84, 2011 it was 2.35. It also show the Interest Coverage ratio of Ramco Ltd. for the year 2015 it was 2.84,2014 it was 1.82, 2013 it was 4.3, 2012 it was 4.58, 2011 it was 3.13. So now we can say that Interest Coverage Ratio of Ramco Ltd. is better than Interest Coverage Ratio of Prism Ltd. For the all financial year. It means Ramco Ltd. can easily pay the interest on long –term debts of business out of his profit, and management may not face any difficulties to raise loans in future.

Dividend Payout Ratio: **This ratio is also called payout ratio**. This ratio establishes relationship between the earnings available for ordinary shareholders and the dividend paid to them. In other, words it explains what percentage of profit after tax and preference dividend has been paid to equity shareholders as dividend. It can be calculated as under:

Dividend Payout Ratio = Total Dividend paid to equity shareholder/ Total Net Profit belonging to Equity Shareholder x 100

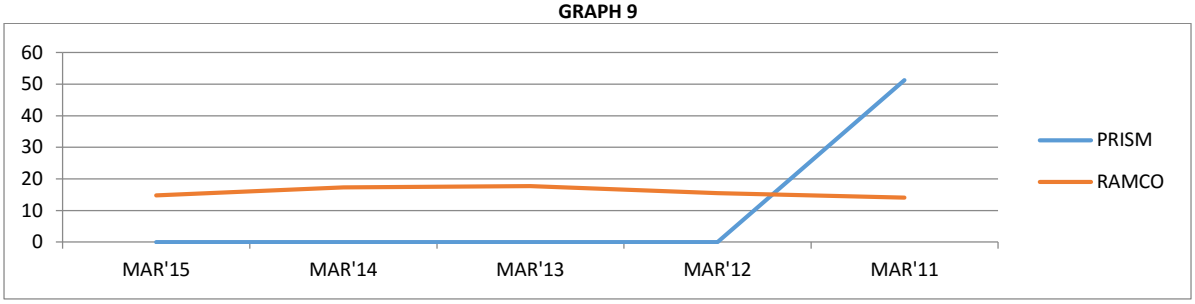
If this ratio is subtracted from 100, the balance will be the percentage of profit retained in business. Higher this ratio will be beneficial for Equity share holder.

TABLE 10: DIVIDEND PAYOUT RATIO 2015-2011 OF PRISM CEMENT & RAMCO CEMENT

YEAR	PRISM	RAMCO
MAR'15	0	14.75
MAR'14	0	17.3
MAR'13	0	17.71
MAR'12	0	15.47
MAR'11	51.25	14.11

The above table shows Dividend Payout Ratio of Prism and Ramco cement. This table indicate Interest coverage ratio of last 5 year of prism it was 0, 0, 0, 0, 51.25 and Ramco ltd. it was 14.75, 17.3, 17.71, 15.47, 14.11.

GRAPH 9



The above line graph shows Dividend Payout Ratio of Prism and Ramco Ltd. for the mentioned year. The Dividend Payout ratio of Prism Ltd. for the year 2015 it was 0, 2014 it was 0, 2013 it was 0, 2012 it was 0, 2011 it was 51.25. It also show the Dividend Payout ratio of Ramco Ltd. for the year 2015 it was 14.75,2014 it was 17.3, 2013 it was 17.71, 2012 it was 15.47, 2011 it was 14.11. So now we can say that Dividend Payout Ratio of Ramco Ltd. is better than Dividend Payout Ratio of Ramco Ltd. For the all financial year. It means percentage of profit after tax and preference dividend has been paid to equity shareholder as dividend is higher than Ramco to compare Prism cement.

Earnings per Share Ratio [EPS]: **This ratio measures the earnings per share available to ordinary shareholders**. Equity shareholders have the right the all right to all profits payment of taxes and preference dividend. This ratio is calculated by dividing the profit available for Equity shareholder by the number of equity share issued.

Earnings per Share = Net profit after tax and preference Dividend / Number of Equity Shares

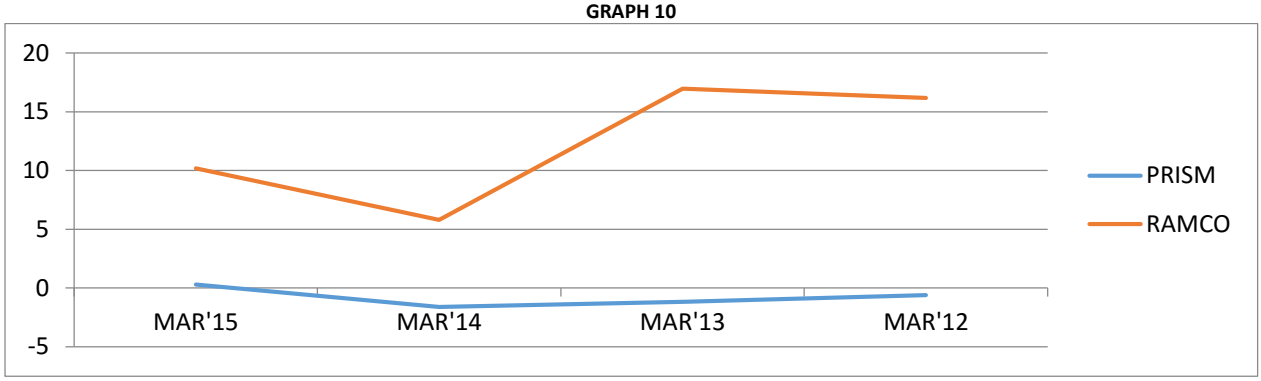
This ratio quite is significant. The EPS affects the market value of share. It is an indicator of the dividend paying capacity of the firm. By comparing the EPS with other firms, management can know whether ordinary share capital is being utilized effectively or not.

TABLE 11: EARNING PER SHARE RATIO 2015-2011 OF PRISM CEMENT & RAMCO CEMENT

YEAR	PRISM	RAMCO
MAR'15	**0.29**	10.18
MAR'14	**-1.62**	5.79
MAR'13	**-1.18**	16.96
MAR'12	**-0.6**	16.18
MAR'11	1.9	8.87

The above table shows earning per Share Ratio of Prism and Ramco cement. This table indicate Earning per Share of last 5 year of prism it was 0.29,-1.62,-1.18,-0.6, 1.9 and Ramco it was 10.18, 5.79, 16.96, 16.18, 8.87.

GRAPH 10



The above line graph shows Earning per Share Ratio of Prism and Ramco Ltd. for the mentioned year. The Earning per Share ratio of Prism Ltd. for the year 2015 it was 0.29, 2014 it was -1.62, 2013 it was -1.18, 2012 it was -0.6, 2011 it was 1.9. It also show the Earning per Share ratio of Ramco Ltd. for the year 2015 it was 10.18,2014 it was 5.79, 2013 it was 16.96, 2012 it was 16.18, 2011 it was 8.87. So now we can say that Earning per Share Ratio of Ramco Ltd. is better than Prism Ltd. For the all financial year. It means market value of Ramco cement is higher than prism cement

CONCLUDING REMARKS

The ratio analysis of Prism cement and Ramco cement is clearly a strategic decision, but it is a highly difficult issue. We can says that the relationships between two, figure expressed in arithmetical terms is called a ratio in other words a ratio is simply one number expressed in terms of another. If it found by dividing one number into other. To cross sectional analysis of this real data from moneycontrol.com gives a reflection on ratio analysis of two cement plants that is Prism cement and Ramco cement that shows in Liquidity Condition Prism is better than Ramco cement but in other area Ramco is better than Prism cement. That ways market share is higher in Ramco cement in comparison to Prism cement.

REFERENCES

BOOKS

1. AGGARWAL & AGGARWAL (2101-11), "Accounting for Managerial Decision", Shri Mahavir Book Depot, New Delhi.
2. R. K. Mittal (2012-2013) ", Accounting for Management and Financial Management" V. K. Global Publication Pvt. Ltd, New Delhi.
3. S. N. MITTAL (2012), "Accounting for Managerial Decision" Shri Mahavir Book Depot, New Delhi

WEBSITES

4. Indian cement Industry, Cement Industry in India, Cement Industry, viewed on February 23, 2016 http://www.Indianmirror.com/Indian-industries/cement.html
5. The Prism Cement key financial Ratio, The- Money control, viewed on February 22, 2016 http://www.mmoneycontrol.com
6. The Ramco Cement key financial Ratio, The Money control, viewed on February 23,2016 http://www.m.moneycontrol.com

DIGITAL MARKETING AND ITS EFFECTS ON CONSUMER DECISION MAKING PROCESS

MONIKA BANGARI
RESEARCH SCHOLAR
UTTRANCHAL UNIVERSITY
ARCADIA GRANT

ABSTRACT

The emergent use of digital marketing provides a developing vision to the consumers. Now digital marketing is related to relationship marketing, where the firms shift from "trying to sell" to "making connections" with the consumer. This study aims to address noteworthy aspects with respect to the role of digital marketing in consumer decision making process and its impact on brand awareness. This study will help the marketers and organizations to understand and develop digital marketing strategies so that the consumer decision towards any products or services is clearly observed and understood. Digital marketing strategies help to reach and convert leads into customer and retain them. Digital marketing became more sophisticated as an effective way to create a relationship with the consumer that has depth and relevance. Digital media marketing helps firms to increases the brand awareness through networking and conversations. With the help of secondary data the study is done and explored a vision through which the digital marketing strategies are clearly understood.

KEYWORDS

brand awareness, decision making process, digital marketing, digital marketing strategies, digital media.

INTRODUCTION

The rapid evolution of digital media has created new opportunities and avenues for advertising and marketing. Fueled by the proliferation of devices to access digital media, this has led to the exponential growth of digital advertising. Digital marketing became more sophisticated as an effective way to create a relationship with the consumer that has depth and relevance.

Digital marketing is an umbrella term for the targeted, measurable, and interactive marketing of products or services using digital technologies to reach and convert leads into customers and retain them. The key objective is to promote brands, build preference and increase sales through various digital marketing techniques. It is embodied by an extensive selection of service, product and brand marketing tactics, which mainly use the Internet as a core promotional medium, in addition to mobile and traditional TV and radio.

India has a long way to go in the world of Digital Marketing as more and more Indians are spending time on the internet. For the past few years, sales process has changed a lot from doing sales through phone calls to sales being conducted through several social media marketing. Instead, the focus is now being led on how to reach out to the customers and make the sales through the contemporary methodologies viz. via the help of digital media like Face book, Twitter, LinkedIn, email campaigns, ads, etc.

Digital marketing helps in promoting products and services using digital distribution and social media channel to reach consumers in a timely, relevant personal and cost effective manner.

USES OF DIGITAL MARKETING

1. Increases website traffic
2. Increase brand recognition
3. Improves search engine rankings
4. Generate Leads
5. Increases online sale conversions
6. Improve internal communications.

The rapid growth of digital and social media including mobile has made information more readily accessible to the prospective consumer. This ability to easily access information from a variety of sources has fundamentally changed the way consumers research products and, ultimately, make purchase decision.

Digital media is so pervasive that consumers have access to information any time and any place they want it. Gone are the days when the messages people got about your products or services came from you and consisted of only what you wanted them to know. Digital media is an ever-growing source of entertainment, news, shopping and social interaction, and consumers are now exposed not just to what your company says about your brand, but what the media, friends, relatives, peers, etc., are saying as well. And they are more likely to believe them than you. People want brands they can trust, companies that know them, communications that are personalized and relevant, and offers tailored to their needs and preferences.

Digital marketing and its associated channels are important – but not to the exclusion of all else. It's not enough to just know your customers; you must know them better than anybody else so you can communicate with them where, when and how they are most receptive to your message. To do that, you need a consolidated view of customer preferences and expectations across all channels – Web, social media, mobile, direct mail, point of sale, etc. Marketers can use this information to create and anticipate consistent, coordinated customer experiences that will move customers along in the buying cycle. The deeper your insight into customer behavior and preferences, the more likely you are to engage them in lucrative interactions.

LITERATURE REVIEW

Marko Merisavo in his article "The effects of digital marketing communication on customer loyalty: An integrative model and research propositions reveals that digital marketing communication can help marketers improve their return on marketing and profitability.

Digital channels offer cost efficient opportunities for marketers to keep frequently in touch with customers and improve customer loyalty. With such prospects in mind, it is not surprising that the use of digital channels in marketing is becoming an essential part of strategy in many companies. This paper focus mainly on the communication function of digital marketing, and how it helps to enhance the loyalty of existing customers.

Kiani (1998) also presents a set of guidelines for advertising on the web; attract users by making it easy to find your site, engage their interests by creating communities or linking to other sites they will find valuable, ensure they return by constantly updating your content and keeping it „fresh", learn their preferences by tracking their activity on your site, and relate to them by taking the information gathered to provide customized content.

Winer introduces three major issues faced by senior marketing executives; Metrics and measurement, Planning and budgeting, and Consumer behavior/brand control. Winer notes that the ability to measure effectiveness in new media is hindering its use (p.112). He points out that marketers are unsure of which metrics to use and that traditional metrics do not fit this new medium. He offers a variety of ways in which they can be studied, such as data-mining consumer generated media (p.112) or taking a more experimental approach and surveying consumers utilizing both a test and a control group to see the effects of the new media on consumers. Winer concludes that the best approach would be a combination of "broad media reach of an MCA approach with the market-based measures generated by econometric models and field experiments" (p.115). Winer cites planning and budgeting as another challenge for marketers. Specifically, they struggle with how to properly and efficiently integrate the new digital media into their traditional marketing communication strategies (Winer, 2009, p. 115). He emphasizes the importance of an integrated approach to ensure that the message being delivered is the same across all mediums (digital or not) and identifies the need for a new model that combines the traditional with the new media.

Javier A. Silva and Pavel Vassiljev in the article International Company's Perception of Digital Marketing Strategies and Their Implementation investigates that how well international companies have adapted to the digital revolution and find the reasons behind implementing or neglecting certain digital marketing strategies. The study also looked at the impact such strategies have on the brand. This study shows how a strong web presence can influence consumer's perception of the brand and why it's important for businesses to be present in the digital world.

OBJECTIVES

1. To study the digital marketing strategies and their effects on consumer decision making.
2. To study the impact of digital marketing on brand awareness.

DIGITAL MARKETING STRATEGIES

Strategy means plan of action or policy designed to achieve goals. As digital marketing is dependent on technology which is ever evolving and fast changing those same features should be expected from digital marketing strategies. Digital marketing strategies are a plan of action that establishes repeatable tactics and connects marketing factors to major goals. The three main fundamental goals of digital marketing strategies are win against competitors, increase revenue and maximize profit. Small improvements in digital marketing strategies can increases the sales, company growth and customer satisfaction. Mostly people form impression of brand from touch points such as advertisements, news reports, word of mouth, and conversations with family and friends or through product experience. Unless consumers are actively shopping, much of that exposure appears wasted. But what happens when something triggers the impulse to buy? Those accumulated impressions then become crucial because they shape the initial-consideration set: the small number of brands consumers regard at the outset as potential purchasing options. Actually, the decision-making process is a more circular journey, with four primary phases representing potential battlegrounds where marketers can win or lose: initial consideration; active evaluation, or the process of researching potential purchases; closure, when consumers buy brands; and post purchase, when consumers experience them.

1. Relevance. In digital marketing, it's what brands covet and what publishers strive to provide. Relevance is the driving force behind behavioral marketing, contextual advertising, native – and virtually everything in between. A recent study from Cisco on shopping behavior found that the majority of consumers welcome – and even expect – hyper-relevant content and special offers from retailers. A similar survey from Accenture found 49 percent of consumers "would not object to having their buying behavior tracked" if it would allow brands to deliver more relevant offers.

2. That mindset is making its way to display advertising as well. In both search and social media, ad relevance is tantamount to campaign success. Just as Google prioritizes keyword relevance, Face book recently began assigning relevance scores to its ads. The new metric anticipates the volume of positive and negative consumer feedback, along with interactions, that an ad will receive. If marketer don't recognize what really matters to the audience, it is impossible to provide relevant content and conversation.

OPTIMIZE YOUR FOLLOW-UP EMAILS

Do you send transactional emails to customers that could benefit from a marketing tie-in? Even an electronic receipt can include a call-to-action asking customers to share their experience with you or enter a positive review you can use for social proof. When you really optimize each and every email you send, you'll increase engagement and improve marketing without increasing time or money spent.

STREAMLINE YOUR CHECKOUT PAGE

3. There are an enormous number of small ways to optimize your checkout page to improve last-minute conversions. If you don't need a field, don't ask for it. Save your customers time and aggravation by allowing them to just check-out when they're trying to buy, instead of forcing them to sign-up for an account. Include testimonials to reduce buyer's remorse and last-minute mind changes.

4. Many companies don't bother with the design of their checkout page, but just implementing these small changes can increase your sales and growth dramatically.

5. Celebrate Your Influential Partners

6. Companies who have influential partners or strong brand evangelists take celebrating them for granted. By publicly acknowledging these influential people, you encourage them to keep going, as well as invite others into advocacy. A small step of recognition could have major implications for your business's sales and growth.

IMPLEMENT CUSTOMER RETENTION STRATEGIES

7. Customer service isn't often viewed as an element of marketing, but smart companies know the sales funnel isn't complete until they've secured referrals and repeat business. A mere two percent increase in customer retention can lower costs by as much as 10 percent, so don't forget customer service when you're discussing digital marketing hacks and improving ROI. (Return on investment)

8. Traditional marketing remains important, but the change in the way consumers make decisions means that marketers must move aggressively beyond purely push-style communication and learn to influence consumer-driven touch points, such as word-of-mouth and Internet information sites.

9. ALIGNING MARKETING WITH THE CONSUMER DECISION JOURNEY

Developing a deep knowledge of how consumers make decisions is the first step. For most marketers, the difficult part is focusing strategies and spending on the most influential touch points. In some cases, the marketing effort's direction must change, perhaps from focusing brand advertising on the initial-consideration phase to developing Internet properties that help consumers gain a better understanding of the brand when they actively evaluate it. Other marketers may need to retool their loyalty programs by focusing on active rather than passive loyalists or to spend money on in-store activities or word-of-mouth programs. The increasing complexity of the consumer decision journey will force virtually all companies to adopt new ways of measuring consumer attitudes, brand performance, and the effectiveness of marketing expenditures across the whole process.

Without such a realignment of spending, marketers face two risks. First, they could waste money: at a time when revenue growth is critical and funding tight, advertising and other investments will be less effective because consumers aren't getting the right information at the right time. Second, marketers could seem out of touch—for instance, by trying to push products on customers rather than providing them with the information, support, and experience they want to reach decisions themselves.

Four kinds of activities can help marketers address the new realities of the consumer decision journey.

PRIORITIZE OBJECTIVES AND SPENDING

In the past, most marketers consciously chose to focus on either end of the marketing funnel—building awareness or generating loyalty among current customers. Our research reveals a need to be much more specific about the touch points used to influence consumers as they move through initial consideration to active evaluation to closure. By looking at the traditional marketing, companies could miss exciting opportunities not only to focus investments on the most important points of the decision journey but also to target the right customers.

In the skin care industry, for example, we found that some brands are much stronger in the initial-consideration phase than in active evaluation or closure. For them, our research suggests a need to shift focus from overall brand positioning—already powerful enough to ensure that they get considered—to efforts that make consumers act or to investments in packaging and in-store activities targeted at the moment of purchase.

TAILOR MESSAGING

For some companies, new messaging is required to win in whatever part of the consumer journey offers the greatest revenue opportunity. A general message cutting across all stages may have to be replaced by one addressing weaknesses at a specific point, such as initial consideration or active evaluation.

Take the automotive industry. A number of brands in it could grow if consumers took them into consideration. Hyundai, the South Korean car manufacturer, tackled precisely this problem by adopting a marketing campaign built around protecting consumers financially by allowing them to return their vehicles if they lose their jobs. This provocative message, tied to something very real for Americans, became a major factor in helping Hyundai break into the initial-consideration set of many new consumers. In a poor automotive market, the company's market share is growing.

INVEST IN CONSUMER-DRIVEN MARKETING

To look beyond funnel-inspired push marketing, companies must invest in vehicles that let marketers interact with consumers as they learn about brands. The epicenter of consumer-driven marketing is the Internet, crucial during the active-evaluation phase as consumers seek information, reviews, and recommendations. Strong performance at this point in the decision journey requires a mind-set shift from buying media to developing properties that attract consumers: digital assets such as Web sites about products, programs to foster word-of-mouth, and systems that customize advertising by viewing the context and the consumer. Many organizations face the difficult and, at times, risky venture of shifting money to fundamentally new properties, much as P&G invested to gain radio exposure in the 1930s and television exposure in the 1950s.

Broadband connectivity, for example, lets marketers provide rich applications to consumers learning about products. Simple, dynamic tools that help consumers decide which products make sense for them are now essential elements of an online arsenal. American Express's card finder and Ford's car configuration, for example, rapidly and visually sort options with each click, making life easier for consumers at every stage of the decision journey. Marketers can influence online word-of-mouth by using tools that spot online conversations about brands, analyze what's being said, and allow marketers to post their own comments.

Finally, content-management systems and online targeting engines let marketers create hundreds of variations on an advertisement, taking into account the context where it appears, the past behavior of viewers, and a real-time inventory of what an organization needs to promote. For instance, many airlines manage and relentlessly optimize thousands of combinations of offers, prices, creative content, and formats to ensure that potential travelers see the most relevant opportunities. Digital marketing has long promised this kind of targeting. Now we finally have the tools to make it more accurate and to manage it cost effectively.

WIN THE IN-STORE BATTLE

Our research found that one consequence of the new world of marketing complexity is that more consumers hold off their final purchase decision until they're in a store. Merchandising and packaging have therefore become very important selling factors, a point that's not widely understood. Consumers want to look at a product in action and are highly influenced by the visual dimension: up to 40 percent of them change their minds because of something they see, learn, or do at this point—say, packaging, placement, or interactions with salespeople.

In skin care, for example, some brands that are fairly unlikely to be in a consumer's initial-consideration set nonetheless win at the point of purchase with attractive packages and on-shelf messaging. Such elements have now become essential selling tools because consumers of these products are still in play when they enter a store. That's also true in some consumer electronics segments, which explains those impressive rows of high-definition TVs in stores.

Sometimes it takes a combination of approaches—great packaging, a favorable shelf position, forceful fixtures, informative signage—to attract consumers who enter a store with a strong attachment to their initial-consideration set.

Creating brand awareness enables recognition of a brand in the market. Recognition of a brand by a consumer means that the consumer can separate that brand from other similar brands in the market, can perceive the symbolic content that such brand represents and the social position that the brand promises.

Digital marketing changed the structure of marketing by creating platforms that allow users to generate and share content. Digital marketing, add a new dimension to the communication established between a more restricted user group in the traditional marketing process. Pages that open, sites created on virtual environment are no longer platforms that address a specific group; rather they have become channels that address a wider user group. In other words digital marketing enabled reaching organizations and individuals with different qualities at different locations around the world in a faster way.

CONCLUSION

The emergent use of digital marketing provides a developing vision to the consumers. Now digital marketing is related to relationship marketing, where the firms shift from "trying to sell" to "making connections" with the consumer. This study aims to address noteworthy aspects with respect to the role of digital marketing in consumer decision making process and its impact on brand awareness. This study will help the marketers and organizations to understand and develop digital marketing strategies so that the consumer decision towards any products or services is clearly observed and understood. Digital marketing strategies help to reach and convert leads into customer and retain them. Digital marketing became more sophisticated as an effective way to create a relationship with the consumer that has depth and relevance. Digital media marketing helps firms to increases the brand awareness through networking and conversations. With the help of secondary data the study is done and explored a vision through which the digital marketing strategies are clearly understood.

REFERENCES

1. **Javier, A. Silva and Pavel, Vassiljev** (2011) International Company's Perception of Digital Marketing Strategies and Their Implementation.
2. **Kiani,** G., R. (1998). Marketing opportunities in the digital world. Internet Research: Electronic Networking Applications and Policy. 8, 185-194
3. **Marko Merisavo** (2008) The interaction between digital marketing communication and customer loyalty. Helsinki school of economics ISSN 1235-5674.
4. **Tessa Wegret** (2015) Digital Marketing Strategies Are Making Ads More Relevant. (Marketing strategies).
5. **Winer, S., R**. (2009). New Communications Approaches in Marketing: Issues and Research Directions. Journal of Interactive Marketing 23, 108-117.

A STUDY ON EMPLOYEES' MOTIVATION IN A SHIPPING COMPANY

P. ANBANANDAN
RESEARCH SCHOLAR
UNIVERSITY OF MADRAS
INSTITUTE OF DISTANCE EDUCATION
CHEPAUK

ABSTRACT

The study examines the motivational factors of employees at Shipping Company called as Port users. At first the discussions are about some relevant theories of motivation, and their influence. This is followed by why motivation is required for employees. There is a structured descriptive type questionnaire which maps employees' motivation on a nine-point scale based on motivational theory and research studies. The findings suggest that recognition, interesting work, and salary are motivational factors for productivity. The factors like promotion, supervision, working conditions, job security, are also other motivational factors that need to be considered.

KEYWORDS
factors, influence, motivation, port users

INTRODUCTION

In the earlier days, countries were ruled by despots and workers had neither any choice nor could they expect better wages or working conditions or better human relations. Employees were considered just a tool as the production of goods and services. This approach was changed after conducting series of research on employees referred to as the Hawthrone studies conducted by Elton Mayo from 1927 to 1932 (Dickson, 1973). According to Taylor (1911) motivation is "What you want men to do and then see that they do it in the best and cheapest way". People cannot be motivated to do something, if there is nothing in it for, one of the challenges facing researchers into motivation is that it cannot be seen. Kanfer (1990), states that what most people see is 'a multidimensional stream of behavior and products of those behaviour'.

DEFINITION OF MOTIVATION

Motivation is the complex force that keeps a person at work in an organization (Dubin, 1974). It is a way which urges, drives, aspires, strives, directs, controls or explains the behavior of human beings (McFarland, 1974). Motivation is an internal process (Baron, 1991). For this study, motivation is an inner force that drives individuals to accomplish personal and organizational goals.

IMPORTANCE OF MOTIVATION

Motivated employees are more oriented towards their job and would be more focused. The performance of motivated employees is high, which results in to increased productivity and reduced cost of operations. Motivation leads to the stability of workforce that is very important from the point of view of reputation and goodwill of the organization. Motivated workforce will leads to greater understanding, acceptance, understanding of objectives and decision making between management and employees (Denton, 1991) If management neglect to educate and motivate their employees, they will become dissatisfied lose their interest in job believed by Darmon (1974).

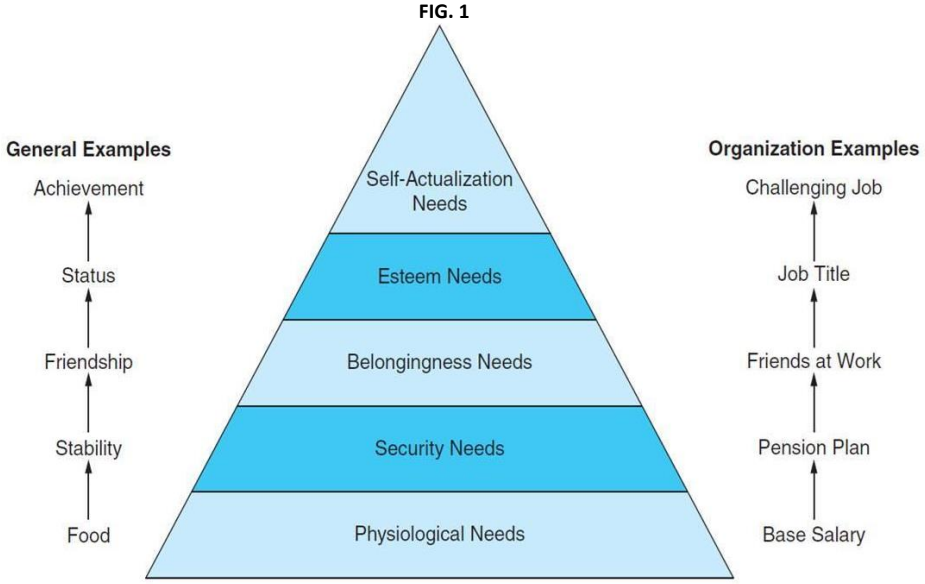
SOME THEORIES RELATED TO MOTIVATION

Several important, epoch-making studies experiments and movements have been conducted during the last century to understand what motivation in, and how it can be ingrained in the employees. As a result, highly educative, eye-opening and useful theories and principles have been enunciated. From the very beginning, when human organizations were established, people tried to find out the answer of 'what motivates people in the organization most. The starting was made by Elton Mayo's Hawthrone studies on Human relationship. Taylor and his followers in the form of scientific management and more particularly 'differential piece rate system' were concerned about using financial incentives to motivate people in the organizational context. Mayo's study found that employees were not motivated solely by money but behaviour linked to their attitudes (Dickson, 1973) which emphasized security and working conditions at the job. In early, 1960s, those concerned with work motivation started to search for a new theoretical foundation and to attempt to devise new techniques for application. The earlier part of these approaches was based on the types of needs that people had and the way these needs could be satisfied so that people would be motivated. Four major approaches that have led to our understanding of motivation are as follows:

a) Maslow gave the theory of need hierarchy;
b) Herzberg proposed two-factor theory
c) Vroom's expectancy theory
d) Adam's equity theory.

According to Maslow, employees have five level of needs (Maslow, 1943) viz. Physiological, Safety, Social, Esteem, and Self-actualization. Maslow suggests that the various levels are interdependent and overlapping, each higher-level need emerging before the lower-level need has been completely satisfied. A research study was conducted by Herzberg (1959) and associates. The findings categorized motivation into two factors; motivators and hygiene factors. Motivator or intrinsic factors, such as achievement and recognition are produced by job satisfaction. Hygiene or extrinsic factors, such as pay and working conditions produce job dissatisfaction.

FIG. 1



SOURCE: Adapted from Maslow, A.H. (1943), A theory of human motivation. *Psychology Review 50*, 370–396.

Vroom's theory was based on the belief that employee effort will lead to performance and performance will lead to rewards (Vroom, 1964). Rewards may be either positive or negative. Employees will be motivated to do things to achieve some goals to the extent that they are awarded. According to his theory, the first-level outcome of high performance thus acquires a positive valence by virtue of the expected relationship to the preferred second level outcome of promotion (Hunt and Hill, 1969).

Adams' theory states that employees strive for equity between themselves and other workers. Equity is achieved when the ratio of employee outcomes over inputs is equal to other employee outcomes over inputs (Adams, 1965). Carrell and others states that employees should sense that their contributions are returned in a fair and equitable manner (Carrell & Dittrich, 1978).

METHODOLOGY

The research design for this study employed a descriptive (quantitative) survey method. The respondents of this study were employees of the Port Users. The sample size of this study was restricted to 75 employees. Sixty-four employees of the 75 employees participated in the survey and the participation rate was 85%. The study population was the Chennai Port Users (Clearing and Forwarding employees and Shipping company staff).

The Port users' work is to facilitate their customers to import and export their consignments from vessels. Port users approach their customers for consignments. Once they get the consignment then they start the procedures of filing the document to the Customs and Ports. Based on the documents filed by the port users, customs officials assess the consignment and raise the invoice for payment of customs duty. After these formalities are over, then they file the Import/Export application to Chennai Port Trust. According to the declaration in the import and export application and customs invoice (Bill of Entry copy), port officials advise port users to pay the port dues. Once they have paid the Customs duty and Port dues, they are allowed to enter the Port for clearing or forwarding the consignment to the consignee. Shipping companies file the vessel particulars in advance for vessel planning.

Based on the review of literature, a survey questionnaire was designed to collect the data for the study (Harpaz, 1990, Kovach, 1987). Data was collected through use of typed printout questionnaire which was personally handed over and some of the questionnaires were issued through respective departments who interact with the Port users frequently. Questionnaires were filled in by the respondents and returned either by port officials directly or department mailbox. The questionnaire looked very simple and the respondents were asked to rank the nine factors that motivated them in doing their work: The parameters were: 1-very highly influence …9-least influence. Face and Content validity for the instrument was tested using professionals. The pilot study was conducted before going to the survey. Based on the opinion of the experts and professionals, some questions were omitted and some were re-arranged.

FINDINGS AND DISCUSSIONS

The motivational factors were ranked as follows: (a) Recognition, (b) Interesting work (c) Salary (d) Career growth/Promotion (e) Caring of employees (f) Job security (g) Working environment (h) Relationship, (i) Supervision.

A comparison of these results with Maslow's need-hierarchy theory provides some interesting insight into the employees' motivation. The top first and second motivational factors were recognition and interesting work. These connects to Maslow's self-actualizing factor. The next motivational factor was salary and this connects to Maslow's physiological factor. The fourth and fifth factors were caring employees and this related to Maslow's social factor and career growth/promotion was connected to Maslow's self-esteem factor. As per the results, the most influencing factors of Port users were self-actualization, physiological, social and self-esteem which need to be satisfied. The findings show that the motivational factors do not coincide with Maslow's theory. Hence, Maslow's conclusions that lower order motivational factors must be fulfilled before next level were not consistent as per this study.

The study also compares the highest ranked motivational factor that is, Recognition to Vroom's expectancy theory. For instance, assume that a Port user attended a berth meeting insisted their vessels were waiting for long time to board the pilot crew, hence we suffer higher charges and our organization managers may insist port officials within two hours to pilot boarded the vessel to save reasonable port dues. In the same way customs officials and port area managers speedy process their application and the delivery of the cargo is made within reasonable time, the reputation of the organization and the cargo volume increases.

Next highest ranked motivational factor was salary (wages), as per Adam's theory. If an employee at the organization feels that their salary is lowering with same type of other organization offered an inequity may exist and the employee will be de-motivated. Further, this cause all employees feel that there is lesser salary offered by company within the radius of same type of organizations in same type of work nature inequity may exist. Adams (1963) states people are motivated to maintain fair relationship between their performance and reward in comparison with other organizations

The last example compares the highly influenced third motivational factors to Herzberg's two factor theory. The highly influenced three factors are recognition, interesting work, and salary. The first two factors are motivator and the third one is hygiene factor. Herzberg et al (1960) stated that to the degree that motivators are present in a job, motivation will occur. The absence of motivators does not lead to dissatisfaction. Further, the degree at which hygiene is absent from job, dissatisfaction occurs. Paying employees lower wages (hygiene) than what they believe to be fair may lead to job dissatisfaction. On the contrary, employees will be motivated when their work is recognized and will not necessarily be motivated by higher pay.

So far the discussion was about the influencing level of motivation as compared to motivational theories, which is only one side of the coin. The other side of the coin is how these ranking factors compare with similar related research studies. A study of industrial employees, conducted by Kovach (1987) resulted in ranking

the motivational factors viz. interesting work, appreciation and feeling of being in on things among the top three ranks. Another study by Harpaz (1990), showed the top three factors were interesting work, good wages, and job security.

The above research studies by Kovach (1987) and Harpaz (1990) invariably employees top ranking factors such as interesting work as highly influenced motivational factor, whereas second highly influenced factor may have varied Kovach (1987) result appreciation but Harpaz (1990) result good wages. Similarly, the next influential factor as per Kovach (1987) feeling of being in on things but as per Harpaz (1990) is job security. This results of the study slightly matched with Kovach (1987) on interesting work and Harpaz (1990) salary factor. Indifferences in the research study findings shows motivation is an individual phenomenon, and the 'one-size fits all' approach to employees' motivation does not work. What is clear, however, is that employees rank recognition and interesting work as the most important motivational factors.

IMPLICATION FOR PORT USERS

The influencing level of motivational factors ranked by employees of the Port users provides useful information for the concerned organizational directors, managers and employees. The above discussed motivational factors as ingredients and the rank orders are just preparatory instructions. The strategy for motivating port users employees depends on which motivational theories are used and this depends upon the organizational setup. If Herberg's theory is followed, management should focus on pay and job security (hygiene factors) and the next to be considered is recognition and interesting work (motivator factors). If Adams' equity theory is followed, management should begin by considering salary (wages and incentives) before focusing on recognition and interesting work.

People are very responsive to praise and encouragement, which is expressed not only in words but also in action so that they give their best effort to the organization (Dubnick, 2005). First task of a manager is to find out what motivates his/her employees and make a match between employee's desires and the offered reward (Greenberg/Baron, 2003).

This study suggested some motivational factors and rank orders, which are not permanent. In that sense, managers are urged to view other alternative factors. In that case, this study can serve as a "Cook Book" from which managers can choose their favorite flavors. Why do we need motivated employees? The answer is survival (Smith, 1994). It may also be considered, if organization may survive, motivated workforce is required. Motivated employees are more productive.

REFERENCES

1. Adams, J.S. (1965). Inequity in social exchange. In L. Berkowitz(ed.). Advances in experimental social psychology, New York: Academic Press.
2. Baron, R.A. (1991), 'Motivation in work settings reflections on the core of organizational research'. *Motivation and Emotion*. Vol.15, No.1. pp.1-8).
3. Carrell, M.R. & Dittrich, J.E. (1978). Equity theory: the recent literature, methodological considerations and new directions. The Academy of Management Review, 3 (2), 202-210.
4. Dalton E McFarland, *Management Principles and Practices*, New York: Macmillan, 1974, p. 537.
5. Darmon, E.Y. (1974), "Salesman's response to Financial incentives-An empirical study", Journal of Markeing Research, 11(3), November, pp.418-426.
6. Denton D.K. (1991), "What's wrong with these employees?", Business Horizons, September-October, pp.45-49).
7. Dickson, W.J. (1973), Hawthorne experiments, Inc (Heyel (ed.), The encyclopedia of management, 2nd ed. (pp.298-302) m New York:Van Nostrand Rainhold)
8. Dubnick, M. J. (2005), Accountability and promise of performance: In search of the Mechanism, Public Performance and Management review, 28(3): pp.376-417.
9. Frederick W. Taylor, Scientific Management, New York, Harper brothers, 1911.
10. Greenberg/Baron, 2003, p.209) (Greenberg, Jerald, and Baron, Robert A (2003). Behaviour in organizations, 8th ed, Prentice Hall).
11. Harpaz, I. (1990). The importance of work goals: an international perspective. Journal of International Business Studies, 21. 75-93
12. Herzberg F.A., Mausner B and Sherwitz L (1959), The motivational to work, New York, John Wiley,
13. Herzberg, Bernard Mausner and Barbara Synderman, '*The motivation to work*', New York: John Wiley, 1959, and Fredrick Herzberg, *Work and the Nature of Men*, Cleveland: World Publishing, 1966.
14. Hunt J.G and Hill, J.W "The New Look in Motivation Theory for Organisational Research", Human Organisation, Summer, 1969, p. 104.
15. Kanfer R. (1990) 'Motivation theory and industrial and organizational psychology'. In Dunnette M.D. and Hough L.M.(eds.) *Handbook of Industrial and Organizational Psychology* Palo Alto, CA, Consulting Psychologists.
16. Kovach, K.A. (1987), What motivates employees? Workers and Supervisors give different answers, Business Horizons, 30. 58-65.
17. Maslow A. H. (1943), 'A theory of Human motivation', *Psychological Review*, vol.50. pp.370-96.
18. Robert Dubin, *Human Relations in Administration*, New Delhi: Prentice-Hall of India, 1974, p.53.
19. Smith, G.P. (1994), Motivation, In W Tracey(ed.), Human resources Management and development hand book (2nd ed.)
20. Stacy Adams, "Toward an understanding of inequity", Journal of Abnormal and Social psychology, November, 1963, pp.425-436.
21. Victor H. Vroom, Work and Motivation, New York: John wiley, 1964.

REQUEST FOR FEEDBACK

Dear Readers

At the very outset, International Journal of Research in Computer Application & Management (IJRCM) acknowledges & appreciates your efforts in showing interest in our present issue under your kind perusal.

I would like to request you to supply your critical comments and suggestions about the material published in this issue, as well as on the journal as a whole, on our e-mail **infoijrcm@gmail.com** for further improvements in the interest of research.

If you have any queries, please feel free to contact us on our e-mail **infoijrcm@gmail.com**.

I am sure that your feedback and deliberations would make future issues better – a result of our joint effort.

Looking forward to an appropriate consideration.

With sincere regards

Thanking you profoundly

Academically yours

Sd/-
Co-ordinator

DISCLAIMER

ABOUT THE JOURNAL

In this age of Commerce, Economics, Computer, I.T. & Management and cut throat competition, a group of intellectuals felt the need to have some platform, where young and budding managers and academicians could express their views and discuss the problems among their peers. This journal was conceived with this noble intention in view. This journal has been introduced to give an opportunity for expressing refined and innovative ideas in this field. It is our humble endeavour to provide a springboard to the upcoming specialists and give a chance to know about the latest in the sphere of research and knowledge. We have taken a small step and we hope that with the active co-operation of like-minded scholars, we shall be able to serve the society with our humble efforts.

Our Other Journals