

ICT Programmes and Policies for Agricultural Extension in India: A Review on Karnataka

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Abstract

An information and communication technology (ICT) in agriculture is an emerging field focusing on the enhancement of agricultural sector in India. It involves application of innovative ways to use ICT in the rural domain. It can provide with accurate information necessary for the farmers which facilitates better Agricultural output. In recent year farmers attitude to access to agricultural information have been changed because of very fast networking of information and communication technology. Farmers can get the information regarding fertilizers, pesticides, crop patterns and weather forecasting and other information through zero affordable cost or low cost. Many of the organizations like government, private, co-operatives and public have also attempted to facilitate the information technology transfer in the agriculture sector. ICT is crucial in facilitating communication and access to information for agriculture and rural development. With this perspective present study is going to find out the relevant ICT applications for agricultural extension in India with respect to Karnataka government initiative policies and programmes perspective.

Keywords: *ICT (Information and Communication Technology), Agriculture, Farmers, Policy and programmes.*

Introduction

Agriculture sector is predominant sector in Indian economy. Most of the families are depending on agriculture sector; nearly 60 % of the Indian populations are engaged in agriculture sector in India. Agriculture sector contribution is 16% of total GDP in India. The performance of agriculture basically means the

performance of small holder farming. It is only by empowering small and marginal farmers to overcome their handicaps that, they can become instruments of evergreen revolution and growth in agriculture sector. ICT in agricultural extension will provide much needed impetus to agricultural sector and ICT can complement the traditional extension system for "Knowledge Resource" delivery to

the millions of the farmers. Present study deals with the Karnataka's agriculture profile and performance of ICT tools in Karnataka with respect to agriculture sector. Study also reviews on successful ICT programmes in agriculture and allied activities.

Information and Communication Technology (ICT) consists of three main technologies. They are: Computer Technology, Communication Technology and Information Management Technology. These technologies are applied for processing, exchanging and managing data, information and knowledge.

Any system applied for getting information and knowledge for making decisions in any industry should deliver accurate, complete, concise information in time or on time. The information provided by the system must be in user-friendly form, easy to access, cost-effective and well protected from unauthorized accesses. ICT can play a significant role in maintaining the above mentioned properties of information as it consists of three main technologies. ICT is the integration of technologies and the processes to distribute and communicate the desired information to the target audience and making the target audience more participative in nature.

Special Features of Information and Communication Technology

Some of special features are can be summarized as follows;

- Speed is one of the special features of ICT; the tremendous progress of telecommunication has killed the vast distance in between, and turned the world to a global village.
- It is an astounding store-house of information which enhances the knowledge of people for new innovation and ability to access them for free.
- Saves time and opens up new vistas in various agricultural activities.
- Unifying and magnifying features of digital technology. The technology of virtual reality is helping areas of research in certain disciplines.
- The information is available instantaneously from any point on the globe round the year and twenty four hours a day
- Here communication is interactive as it also involves the farmers
- The communication is dynamic and ever growing.

Improving Information Availability and Delivery of Services for sustainable agricultural growth and livelihood are the main aims of providing ICT services to the farming community. The well accessed information by the ICT results in increasing productivity thereby increasing sustainability of agriculture. The importance of ICTs application is summarized on the following accounts;

- Improved information access and delivery of services to the farming community.
- Improved productivity and profitability of farmers through better advisory systems.
- Efficient and Increased utilization of information by stakeholders for their decision making.
- Faster and efficient redressal of farmers' grievances.
- Better monitoring of government schemes, which directly impact the farmers.
- Improved transparency and accountability.

- Direct feedback from farming community to the decision makers in the state.
- Efficient management (Development, Conservation, allocation and utilization) of resources

Reasons for Delay in Agricultural Information in India:

The main purpose of extension is to transfer the agricultural advanced technology and research to the farmer, and feedback of field problems to the research system. Latest information and knowledge on the subject play a major role to full fill this purpose. There is an information delay between farmers and agriculture researcher in India because:

- Media, Information Management and ICT are not properly used
- Lack of adequate extension workers
- Lack of Agricultural information literacy in India
- Lack of updated agriculture information with the farmers and most of the extension workers
- Poor technological knowledge of farmers and village level extension personnel

- Economic problems of rural people
- The top-down approach is adapted for extension activity. So the linkages between research- extension and farmer remained weak etc.

Significance of the Present Study

The present study forms part of agricultural economics by emplacing on the primary sector growth and development. Services and facilities those are available for farmers to become efficient and smart to enhance their agriculture production particularly. Information and Communication Technology is of utmost importance which determines the effectiveness and utilization of services and facilities to improve farmer. In particularly the agricultural production of the nations and farmers cultivation method and knowledge depends on innovation technology as well as information technology. Thereby, Information and Communication Technology is very important variable in determining agricultural production and farmers' efficiency in farming activities. So present study focuses on how ICT programmes and policies are emphasized in agriculture sector and awareness to the farmers in Karnataka.

Literature Review

Rabindra Kumar M (2012) in the work entitled, "Role of Information in Agricultural Development of Odisha", aims to discuss areas of information needs for various stakeholders in agricultural sector in the developing state of Odisha. Access to right information and its proper utilization for the farming community is the order of the day which needs to be practiced in the state. Author suggested that extension professionals should carry publicity materials and distribute success stories in agriculture so that it may make great impact upon farmers with needed information. Hence, extension professionals working in agricultural sector should develop better visioning and empower the farmers with latest technology and farming practices.

R.Saravanan (2012) worked on "ICT for agricultural extension in India: Policy implications for developing countries", This article was concise reviewed ICT projects implemented since 1990's in India, elaborating best practices and its ingredients for success and also draws policy implications for the effective ICT based agricultural advisory services in developing countries. Study revealed the national policies with respect to ICT in agricultural extension services in India. It also found the impact of information and

communication technology on agricultural sector with the view of the successful implemented programs.

Jenny C. Aker (2011) in the article entitled “Dial “A” for agriculture: a Review of information and communication technologies for agricultural extension in developing countries”, outlines the potential mechanisms through which ICT could facilitate agricultural adoption and the provision of extension services in developing countries. Public sector programs have attempted to overcome information-related barriers to technological adoption by providing agricultural extension services. They reviewed existing programs using ICT for agriculture, categorized by the mechanism and the type of services provided. According to author identifying potential constraints to such programs in terms of design and implementation is important. It concluded with some recommendations for implementing field-based research on the impact of these programs on farmers’ knowledge, technological adoption, and welfare.

Claire J.et.al (2010) in their work entitled, “Review of Agricultural Extension in India” ascertain why farmers are not accessing information and where information gaps exist, despite the variety of extension approaches in

India. They focused on some of the major agricultural extension programs in India by considering their ability to provide information and facilitate information sharing and use in farming communities. Author examines the challenges and constraints of each agricultural extension approach as it attempts to provide farmers with access to information that is relevant to their farm enterprises. They concluded that there is an increasing need to work in partnership and to share knowledge and skills in order to provide locally relevant services that meet the information needs of marginal and smallholder farmers in India.

Objectives of the Study

To review the various Government policies and programmes in promoting ICT in agriculture sector in Karnataka.

Methodology

The present study is based on the secondary source of information

Secondary sources were collected from various government reports, i.e., Ministry of Agriculture and Allied activities of both Central and State governments. Karnataka State agricultural policies, which are Karnataka Agriculture Policy 2006, Integrated

Agribusiness Policy 2011, Karnataka Agriculture Market Policy 2013 and Karnataka Agribusiness & Food Processing Policy 2015.

Karnataka Agriculture Sector

Agriculture plays a vital role in economy of Karnataka. Karnataka is heavily dependent on the agricultural sector. About 1.8 m ha (million hectare) area of the state is under irrigation which constitutes about 16 percent of the gross cropped area. Karnataka with its diversified agro climatic conditions is home for the production of variety of agriculture crops such as Sunflower, Maize, Tur, Jowar, Sugarcane, Bengal gram, Soybean, Groundnut, Green gram, Black gram, Sunflower, Paddy, Cotton etc. The State also grows variety of small and minor millets such as Foxtail Millet (Navane), Little Millet (Sawe), Finger Millet (Ragi), Bajra (Sajje), Haraka etc.

Karnataka State Agricultural Policies

Review

Karnataka agricultural policies reviewed here are with respect to importance of ICT applications for agricultural development in Karnataka.

Karnataka Agriculture Policy 2006

The Policy stated a “Farmers Centric” approach, which means policy, would have concern on farmers, how to empower the farmers and how to enhance the production capacity with available resources and mainly on eradicating or address the impediments of agricultural sector.

The philosophy of the 2006 agricultural policy lies in the concept of ‘Pancha Sutra’. The five components of sutra’s are: 1) to protect and improve soil health. 2) Conservation of natural resources, with special emphasis on water and micro irrigation 3) Timely availability of credit and other inputs to the farmers, 4) Integrated post-harvest processing with the production process, and 5) Reducing the distance between “Lab to Land” in transfer of technology.

With these five components policy has given the more importance for ICT to enrich the knowledge of farmers on farm cultivation, input supply, pre and post harvesting of the agriculture and allied activities etc. IT being a ‘farmer centric’ policy, the focuses of the policy has to generate an honorable level of growth in the net income of the farmer through value addition and agro-processing. ICT has taken a prominent role in this policy to provide accurate and adequate information and to make skilled agricultural laborer. Policy has

recommended a scheme of Raitha Mithra Pusthaka (RMP) it has information about the farmers and many other agricultural related information has Consisted .Another step of the policy was to strengthen the Bhoomi project which is one of the ICT based project, this project has the information about the computerized land records from the information kiosks in this direction farmers can easily get land records. Another major program is Soil Health Card, it has consisted the information regarding soil health Nutrition, it would help to farmers to maintain the soil health. Therefore ICT play a prominent role in the Agriculture Sector.

Integrated Agribusiness development Policy 2011

The Karnataka government has taken a lead initiative in developing sustainable agriculture or agribusiness enabled through an ‘Integrated Agribusiness Development policy’, covering agriculture and allied activities (like horticulture, animal husbandry, fisheries, sericulture and food processing) both in infrastructure and industrial segments on an end to end concept. In this view policy aims to create an enabling institutional structure for addressing the aforesaid thrust areas, facilitates flow of information, technologies, skill sets and

modern management practices. In order to facilitate agribusiness in Karnataka and to keep abreast of latest technology and information in the sector, central product information, cultivation knowledge support cell and market intelligence cell shall be established. This *knowledge support cell* would cover creation of agri- portal, university-farmer interaction ,knowledge dissemination, corporate knowledge and farmer FAQ, technologies, guidance solution support, schemes and services of GoK and GoI, key events, e-extension, distribution of literature, soil and water testing services, single window delivery system for technology products, diagnostic services and information through hub and spoken model, creating awareness of improved agricultural technologies among the farmers ,promotion of IT in agriculture.

Karnataka Agricultural Marketing Policy 2013

The Policy stated that Information Technology contribution is very high in providing better market practices. Harnessing information technology for marketing extension will receive high point in the policy agenda. Effectively use of modern ICT, it would be promote the transparency and avoided the malpractices in marketing activities. Extensive

use of information technology will be promoted for communication between farmers and stakeholders. Online marketing system is one of the effective programme for generating the price competition and in encourage the use of effective modern technology and also make use to get good price, accurate weighting and timely accessibility of the payment etc. Farmers easily can get the information on agricultural commodities through the well-known ICT programmes of *KrishiMarataVahini*, *online marketing*, *e-tendering* etc. In order to this role of ICT in agriculture market, policy initiative has been concern on regulated marketing, increasing competition and empowering farmers and so on.

Karnataka Agribusiness & Food Processing

Policy 2015 The Agribusiness and Food Processing sector in the State requires a special focus and thrust. There is a need to have an exclusive Agribusiness and Food Processing Policy to give focused attention for the overall development of Agribusiness and Food Processing sector to give value addition to farm produce for the benefit of farmers.

Vision of the Policy, 'to position Karnataka in a sustained growth path in the field of agricultural and allied sectors through global

technologies and innovative tools, by creating enabling frameworks and state of the art infrastructure facilities, thereby generating higher returns to farming communities'.

Mission of the Policy, to make Karnataka as the most sought after investment destination for the agribusiness and food processing with focused attention and landholding.

To provide more and more opportunities for the agribusiness and food processing sector, there by generating large scale employment in rural and semi urban areas of the State.

Information & Knowledge Support Centres

Under 2015 policy ICT has been given much importance to enrich the activities in agribusiness. This support shall include website management containing information relevant for agribusiness & food processing sector in Karnataka. The information centre shall maintained at abases on agribusiness and food processing enterprises, infrastructure providers, key export destinations from Karnataka, and other such knowledge on agribusiness and food processing in the State. *Raitha Samparka Kendras* (RSK) / District Industries Centres in Karnataka will be utilised as information centers.

Karnataka Agribusiness Development Corporation (KABDC) shall be empowered to empanel consultants who can prepare bankable project reports. The supporting institutions like University of Agriculture Sciences, Horticulture Sciences University, Veterinary Sciences University, National Bank for Agriculture and Rural Development, Central Food Technological Research Institute, Defence Food Research Laboratory and other accredited institutions, etc. shall be pooled to the fold of knowledge centre.

Karnataka State Agricultural Portal

SAP(State Agricultural Portal) is one of the ICT based programme in Karnataka. A farmer would typically come to SAP to find information / avail any service through CSC / Internet. SAP would be in English and local language, and have easy to use navigation, search and browse features. SAP would be connected to the State gateway through firewall and SWAN / Internet and would be accessible to department, SAUs, KVKs for information update and to various service delivery channels like CSCs / State Call Centre, Kisan Call Centers, RSK's (Raita Samparka Kendra) and internet for public access. The State Agricultural Portal is a conceptual design of service delivery channel at the state level.

e-Mandi

The Department of Agricultural Marketing (DAM) had requested the NIC for the design and development of software for activities of Agricultural Produces Marketing Committee (APMC). After studying the requirements and activities in the APMC, National Informatics Centre (NIC), Karnataka had developed the e-tendering application in 2006 to automate the process of tendering of farmers' agricultural produces in the APMC. Subsequently, this system is improved and called as e-Mandi system, which captures all the activities of the APMC, from in-gate entry to out-gate entry including tendering, billing, DCB (Digital Cash Bill) preparation.

e-Mandi is a web-based application with 3-tier architecture. The e-Mandi system is a comprehensive system, meeting all the requirements of the APMCs. It has been built with number of features for easier use by the APMC staff, traders and Commission Agents. e-Mandi has been designed by incorporating the rules and regulations defined in APMC Act.

Advantages of e-mandi

- An electronically unified agriculture market will introduce transparency and

reduce intermediation and multiple handling costs.

- It facilitates efficient price discovery and utilizes transaction functions of the marketplace
- It enables participation and benefits for the entire agri value chain. i.e. from farmer to consumer.
- It eliminates multiple tax levies and licences.
- Better logistics and infrastructure facilities will be made available to the farmers as it will encourage private sectors to invest.
- It is a single licensing system, and thus the farmers/trader need not register in all APMC's of the state.
- Karnataka's system has accommodated lakhs of farmers, traders and commission agents for trading in all the 92 regulated commodities.

Bhoomi

Historically, maintenance of land records system in India has been a prime social activity for land owners, tenants and the state for land reforms, taxes, administration, survey and various other purposes. Land records contain

geophysical data of the land e.g. land size, forms and soil, information on crops, irrigation, land use, legal entitlements, liabilities and taxation. State land reform measures, thus, depend much on the land records management system. Further, it helps in protecting the legal ownership, assignment and settlement of land titles. Farmers utilise land records also to obtain bank loans, resolve legal disputes, collection of accurate crop data, insurance and ensuring efficient land markets. The need to reform the land record management system has long been recognised because in its current state, the system breeds bribery and corruption. In this project, the Department of Revenue in Karnataka has computerised 20 million records of land ownership belonging to 6.7 million farmers in the state. Computerisation of land records allowed the farmers to sidestep the village accountants for acquiring a copy of the Record of Rights, Tenancy and Crops (RTC), a process that earlier entailed delays, harassment and payment of bribes. Farmers today can obtain a print RTC copy for a fee of Rs.15 from a computerised land record kiosks (Bhoomi centers) located in 177 taluka offices.

Radio

Radio is one of the most important and cheapest mass media. It has been one of the



traditional media for information seekers. Information revolution in rural India through radio has helped green revolution. It is very useful in rural development programme. It has a great variety content related to farm, home, community and entertainment.

Hassan Akashwani is one of the creative radio program stations in Hassan district. This station is broadcasting farmers centric programmes like *Dhumbi*- on agricultural commodity price disseminating program; *Krishikarigemahithi*-providing information on agriculture with personal interview of progressive farmers; *Petevishleshane*, *Ritharigesalahe*, *Manninamahathva*, *Maralibaamannige* etc., are broadcasted by Hassan Akashvani. In Hassan district this radio station is trying to create good agriculture awareness among the farmers with the help of *Kandly krishiVigyan Kendra*. Farmers are showing positive response and radio station is also conducting interactive sessions for farmers with the support of concerned officers in the district. Akashwani this is trying to enrich farmers knowledge in district.

AIR Mysore is unique in broadcasting regular farmer friendly programmes like *KrishiChinthana*, *Raitarigesalahe*, *Krushinudimuttu*, *KrishiPathagalu*,

Krishikare, *Krishivani*, which are all motivating and bringing them to single platform for sharing ideas, to learn and adopt latest technologies and pursue agriculture as a profession under the banner of *Banuli Krishi Belagu* programme. Under this programme one day training programme is conducted at the farmers' field on the last Monday of every month by the progressive farmers themselves. Importance is given for promoting organic farming and reduce the usages of fertilizers and other chemicals in agriculture apart from income generating allied activities.

Krishi Community Radio

The first krishi community radio in Karnataka was established in 2007 under University of Agricultural Science, Dharwad. It is recognized as one of the FM medium for transfer of agricultural technology to the needy farmers in coverage area. Krishi radio produces the programmes like interview with the farmers, successful events of farmers, Krishi Chintana, feedback of farmers' trainee, market information, weather report, seasonal hints for agricultural operation, etc. The Krishi community radio produces and broadcasts latest information like cropping pattern, improved agricultural practices, animal

husbandry, fisheries, environment, poultry farming etc.

Television

Agricultural programmes on television started with introduction of Krishi Darshan programme in DD National channel on January 26, 1967. With the launching of satellite instructional television experiment in 1975 and Indian satellite in 1982, these programmes became familiar to a vast majority of rural viewers and Krishi Darshan was the first rural program. This programme created awareness among the rural viewers and acquainted them with the latest technical and scientific knowledge with regard to crop cultivation practices, use of fertilizers, soil testing, dairying animal husbandry, sericulture, horticulture, fishery, poultry, weather forecasts, etc.

In Karnataka DD Chandana Channel has been telecasting Krishi Darshan program for farmers, daily twice in morning 6.00-6.30 am and evening 5.30 to 6.00pm. ETV Kannada News channel also has been telecasting the farmer centric programme known as Annadata (Kannada). The programme telecasting time is morning 6.30-7.00AM many other TV channels also provide the information on

Market price, subsidy related issues and some special programmes of success stories etc. These television programmes are creating awareness on farm activities to farmers with adequate and affordable information.

FAO (2001) reported that television is the most important medium for communicating information among rural people of developing countries in rural area as people are facing many problems and hindrances to get information relating to agriculture.

Mobile

Mobile access to technology is one of the most important enablers for small holders to improve productivity sustainably. Innovative mechanisms for technology transfer are required to bring relevant tools, knowledge and knowhow to farmers. ICT applications can foster dissemination of information on technology, market demand, price information, weather, pest, and risk-management information, best practices to meet quality and certification standards. Farmer Call Centre (Kissan Call Centre) the Department of Agriculture & Cooperation (DoA&C), Ministry of Agriculture, Government of India launched Farmer Call Centres across the country on January 21, 2004, to deliver extension services



to the farming community. The purpose of these call centres is to respond to issues raised by farmers, instantly, in the local language. National level universal eleven digit number 1800-180-1551 has been allotted for Kissan Call Centre. The number is accessible through all mobile phones and landlines of all telecom networks including private service providers. Calls are attended from 6.00 AM to 10.00 PM on all seven days of the week at each KCC location.

Krishi Vigyan Kendras and State Agriculture Universities

Agriculture research and education in India is spearheaded by the Indian Council of Agricultural Research (ICAR), an autonomous organization under the Department of Agricultural Research and Education (DARE), Ministry of Agriculture and farmers Welfare, Government of India. This apex body is mandated for coordinating, guiding and managing research and education in agriculture and allied activities. It has the largest network of agricultural research and education in the world with 109 institutes, 78 all India coordinated projects/networks, 642 Krishi Vigyan Kendras (KVKs), 71 state agricultural/ veterinary /horticultural /fishery universities and four general universities with agricultural

faculty spread across the country. There are 31 Krishi Vigyan Kendras and 05 Agricultural Universities are in Karnataka. They have been working for enhance the technological innovation in farming activities.

Raita Samparka Kendras (RSKs)

The Department of Agriculture established Raitha Samparka Kendras at hobli level with the objective of providing updated crop production related knowhow, arrangement of critical agricultural inputs, primary soil and seed testing facilities and arranging interface with public and private sector technologies. Developing country like India is carrying forward nationwide programmes of modernizing agriculture with a view to achieve food security and to bring about socio-economic changes among farming community since majority of population in the country depend on agriculture for their livelihood. Karnataka's agriculture, as in the rest of the country, has been making impressive strides, since mid-60s. Out of the total population, rural contributes to about 70 percent and most of them are engaged in agriculture and allied activities. According to the recent Economic Survey report of 2011, the contribution of agriculture and allied activities accounts to 16.78 percent of the state income.

Considering the importance of the need to provide effective extension services to the farmers, *Raitha Mitra Yojane*, a demand driven Agricultural Extension System was initiated in Karnataka state in 2001, replacing the earlier extension system by establishing agricultural extension centers at hobli level called *Raitha Samparka Kendras* (RSKs). So far in Karnataka state, 745 *Raitha Samparka Kendras* (Agricultural Extension centers) are established at Hobli/Sub-block level in 177 taluks (Anon., 2000) These RSKs cater to the need of 5628 Gram Panchayaths covering 78 lakh farmer families. These RSKs located in proximity to the farming community are aimed at addressing wide range of local issues related to agriculture. They also act as a common platform and create terminal linkage to the farmers to access and interact about agriculture based technology and information at the grass root level.

Conclusion: The study reviewed some of the agricultural extension approaches currently in operation in Karnataka and also revealed policy interventions that promote ICT for agricultural extension in Karnataka.

In the contest of providing information system, an innovation can emerge from many sources and through complex interactions and knowledge flows, with the farmer being at the center of the process. Some of them are Kissan Call Centre, Karnataka Government Websites of Agriculture and allied sector, innovative mobile applications like e-mandi, Krishi Vigyan Kendras, All India Radio, television, agricultural magazines, newspaper and so on. There is no scarcity of information sources, but the receivers are very less because of lack of awareness on ICT programmes and their utilization. Hence, public sector should provide information at grass root level for accessing innovative technologies and innovative knowledge to create smart farming community.

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Financial Performance of Private Sector Banks With Reference to ICICI Bank And Selected Private Banks.

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ABSTRACT

For the development of the economy of the country, a sound, effective and hassle-free banking system is important. A study is conducted to compare the financial performance of the ICICI bank with major selected banks in the same private sector. The objective of the study was to compare the performance of ICICI bank with major selected banks. The selected banks for the study are AXIS, HDFC and Kotak Mahindra. The ratios taken for the study are Interest spread, Net profit margin, return on net worth, Total assets turnover ratio, return on assets, Credit deposit ratio, Cash deposit ratio and Liquid assets to demand deposit. The sample for the study taken was 5 years (2012 to 2017) of financial statements. To analyze the variance of the mean among the selected banks, Variance analysis and ANOVA test has been conducted. Through analysis it is found that the ICICI bank has achieved a better position on net profit margin and debt coverage ratio with positive differences in comparison of ICICI Bank and selected private banks. On the contrary it has not fared well in terms of Return on Assets, Return on Net worth, total assets ratio. The main recommendation of the study is Merger of Axis bank and ICICI which has more potential in terms net worth and return on assets. The combination of these two banks will become the greatest private bank in India and shall be easy to expand in the world.

Key words-Banks, Performance, Ratios, Variance Analysis, ANOVA,

INTRODUCTION

The banking sector plays an important role in efficient functioning of the economy of the country. It plays an essential role our day to day transactions. They act as intermediaries,

help us to pool and channelize the savings.

From past few years Indian banks have made achievements which are outstanding. Since a diversity of models and advance technology have been emerged among finance industries,

some of the traditional banking eminences between banks, insurance companies, and securities firms have belittled. Though there are changes in the banking sector still banks maintain and perform their primary role of accepting deposits and lending funds from these deposits. In India the banks have been sported by an expectant network of branches that cater the financial needs of all walks of people. Today those who have no education or minimal literacy are keen to know the financial performance of the banks in which they deposit or make an invest. Earlier financial analysis was done through only by going through the records and files but now we use tools or techniques to make analysis. Some of them are Ratio Analysis, Comparative statement analysis, Time series analysis, Common size analysis. The selection of these tools is mere choice of the user as well as interpretation of the same depends on the need and intelligence of the user.

Literature Review

1. **Biswal, B. P., & Gopalakrishnan, R. (2014).**

Here the author examines the factors and their effect on profitability in banks which is estimated by Net Interest Margin. By using secondary data, the study classifies banks operating in India under high Credit Deposit ratio and low Credit Deposit ratio.

2. **Chandran, D., & Francis, P. (2014).**

Here the authors in their study have made an attempt to analyze the relationship between inflation rate and prime lending rate in India. Comparison of inflation with prime lending rates of SBI and ICICI Bank with the help of tools like correlation, regression, and ANOVA. The results showed that the lending and inflation rates are negatively correlated.

3. **D. Padma and V.Arulmathi (2013)-**

The authors have conducted study to compare the efficiency and solvency position of SBI and ICICI banks. The findings of the study are both the banks are maintaining required standards and running smoothly. Further study of SBI shows that there are significant

differences on the performance of SBI and ICICI Bank in terms of Deposits, Advances, Investments, Net profit, and Total assets

4. **Jaiswal, A., Jain, C (2016)-** To study the financial performance between SBI and ICICI banks, the author has not only compared financial performance through ratio analysis but also found the market position of the both banks.

5. **Malhotra, N. (2015).** Here the author has explained the financial soundness of the three banks SBI, ICICI and Standard Bank. The data used is secondary for the study. The study results in terming that growth of assets is more in ICICI bank. The SBI shows growth in advances and deposits whereas standard chartered bank efficiently controls expenditure as well income compared to the other banks. The study suggests that SBI has to improve its financial position to match with these two banks.

6. **Prakash P., Sundararajan, S. (2016)** The study is quantitative analytical research with

fundamental and technical analysis. Here the research is based on the secondary data and the tools used for analysis are Ratio analysis, Beta Analysis (β), Relative Strength Index (RSI) and Rate of Change (ROC).

7. **Sharma, R., Goswami, A., & Kumar, P. (2014).** The authors have made an evaluation of performance of Indian privatization. Since liberalization, the banking system in India has undergone a various reform. Current new privatization has best technology, manpower and efficiency. It is managed by professionals. Due to the new era of banking system it has attracted customers and marketed the financial products.

8. **Singh, A. K. (2015).** The author has conducted study in analysis of profitability position of private bank in India like AXIS, ICICI, Karur Vysa bank (KVB), YesBank, and highlight the overall profitability of bank (i.e.) Interest spread, Net profit margin, return on long term fund, return on net worth & Return on assets, Adjusted cash margin.

9. **Singh, A., & Tandon, P. (2012).** The authors conducted a study in financial performance: a comparative analysis of SBI and ICICI bank. The study found that the mean of Credit Deposit Ratio and interest expenses in ICICI was higher than in SBI. The interest income in SBI was higher as compared to ICICI. This clearly indicated that people prefer ICICI to invest their savings and SBI to take loans & advances.

10. **Singh, J. P., Seth, M. (2017)-** The author has taken CAMEL approach to compare the Capital Adequacy with public and private sector banks. He has selected only one parameter from Capital Adequacy, Asset Quality, Management Quality, Earning Quality and Liquidity.

RESEARCH GAP

Though there is much studies on this sector, the researchers have not focused on comparison of Banks interms of total assets and Market Capitalization. There is no research on the study of mean differences

performance among the selected private sector banks.

OBJECTIVES OF THE STUDY

1. To analyze and compare the financial performance of ICICI bank with selected private sector banks.
2. To find the variance of mean among selected private sector banks.

Hypotheses of The Study

H0₁: There is no significant difference between net profit margin among different selected private sector banks in India.

H0₂: There is no significant difference between Return on net worth among different selected private sector banks in India.

H0₃: There is no significant different between Return on assets among different selected private sector banks in India.

H0₄: There is no significant difference between interests spread among different selected private sector banks in India.

H0₅: There is no significant difference between credit deposit ratio among different selected private sector banks in India.

H0₆: There is no significant difference between cash deposit ratio among different selected private sector banks in India

H0₇: There is no significant difference between **asset turnover** ratio among different selected private sector banks in India.

H0₈: There is no significant difference between liquid assets to demand deposit among different selected private sector banks in India.

Methodology

The research design adopted for the study are experimental and Descriptive in nature. The data collected is based on secondary data. It is collected from Financial Statements published from 2012-2017, books Magazines, thesis and websites of the banks taken for the study and from Reserve Bank of India.

To analyze and interpret the collected data, the financial and statistical tools are used to find the financial performance of the ICICI bank in comparison with selected private sector banks.

The financial tools used for the study is Ratio analysis. The ratios are selected for this Study.

Interest spread, Net profit margin, return on net worth, Total assets turnover ratio Return on assets Credit deposit ratio, Cash deposit ratio and Liquid assets to demand deposit. he

Statistical tools used for the study are Mean, Standard deviation, Co-efficient of variance and ANOVA.

ANALYSIS OF THE RESULTS

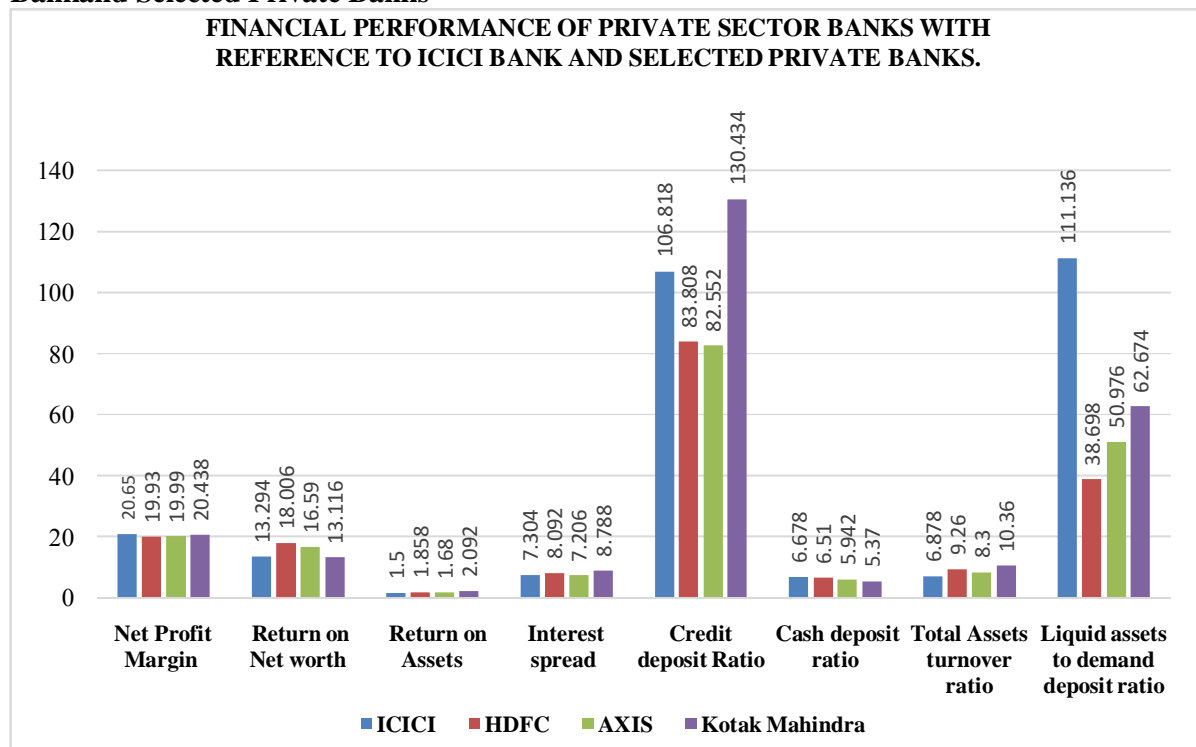
1. RATIO ANALYSIS

Table-1 Financial Performance of Private Sector Banks with Reference to ICICI Bank and Selected Private Banks

Banks	Net Profit Margin	Return on Net worth	Return on Assets	Interest spread	Credit deposit Ratio	Cash Deposit Ratio	Total Assets Turnover ratio	Liquid assets to demand deposit ratio
ICICI	20.65	13.294	1.5	7.304	106.818	6.678	6.878	111.136
HDFC	19.93	18.006	1.858	8.092	83.808	6.51	9.26	38.698
AXIS	19.99	16.59	1.68	7.206	82.552	5.942	8.3	50.976
Kotak Mahindra	20.438	13.116	2.092	8.788	130.434	5.37	10.36	62.674

Source: Annual Reports Of ICICI, HDFC, AXIS AND KOTAK MAHINDRA Banks

Graph- 1 Financial Performance of Private Sector Banks with Reference to ICICI Bank and Selected Private Banks



Interpretation: In the table we can find that the average net profit margin of ICICI bank is more than the other private banks, followed by Kotak Mahindra Bank, Axis and HDFC bank respectively. The average return on net worth of HDFC bank is the highest compare to other

banks followed by Axis Bank, ICICI Bank and Kotak Mahindra Bank respectively. From

the table. it's clear that Kotak Mahindra bank has highest average return on assets compared to other banks, followed by HDFC bank, Axis Bank and ICICI bank respectively. It indicates the weak position of the ICICI bank in return on total assets. It is clear that Kotak Mahindra Bank has got highest average interest spread compared to other banks, followed by HDFC Bank, ICICI Bank and Axis Bank respectively. It indicates the weakness of ICICI bank in total interest income and expenses to average working fund.

Kotak Mahindra Bank has the average highest Credit deposit ratio compared to other banks, followed by ICICI bank, HDFC Bank and Axis Bank respectively. Though ICICI bank is second in line for Credit deposit ratio, it still shows that ICICI bank is able to generate more loans for the deposit received as compared to HDFC and AXIS banks. ICICI Bank has highest Cash deposit ratio compared to other banks, followed by HDFC Bank, Axis Bank and Kotak Mahindra Bank respectively. It indicates that ICICI Bank has more deposit compared to other banks. Kotak Mahindra Bank has highest total assets turnover ratio compared to other banks, followed by HDFC bank, Axis Bank and ICICI Bank respectively. It shows that ICICI bank is less efficient in generating revenue from their assets. The ICICI Bank has highest Liquid assets demand deposit ratio compared to Kotak Mahindra Bank, Axis Bank and HDFC Bank respectively. It shows that ICICI bank has the highest ability to meet immediately and short-term deposit by cash or online banking or ATM. But in another side the high percentage will reflect that the bank did not mobilize the cash effectively in short-term investment.

2. ANALYSIS OF VARIANCES

Table-2 Analysis of mean Standard deviation, Coefficient of Variance of Net profit margin

PARTICULARS	ICICI	HDFC	AXIS	KOTAK MAHINDRA
MEAN	20.65	19.93	19.99	20.438
SD	2.147	1.022	0.752	2.210
CV	0.104	0.051	0.038	0.108

Source: Annual reports of ICICI, HDFC, AXIS AND KOTAK MAHINDRA banks

Interpretation-From the table, it has been evident that ICICI has the highest mean value of net profit margin (20.65) compare to other banks. Kotak Mahindra bank has the highest standard deviation of net profit margin (2.210) as well as co efficient of variance (0.108) compared with other banks, followed by ICICI Bank, HDFC Bank and Axis Bank respectively. ICICI Bank has highest Mean value (20.65) with moderate standard deviation (2.147) and co-efficient of variance (0.104) on Net Profit Margin.

Table -3 Analysis of mean, standard deviation, coefficient of variance of Return on net worth

PARTICULARS	ICICI	HDFC	AXIS	KOTAK MAHINDRA
MEAN	13.294	18.006	16.59	13.116
SD	1.446	1.218	1.198	1.638
CV	10.877	6.764	7.221	12.488

Source: Annual reports of ICICI, HDFC, AXIS AND KOTAK MAHINDRA banks

Interpretation- As per the table it has been found that Axis Bank has highest Mean value of returns on net worth compare to other banks. The Standard Deviation and Coefficient variance of Kotak Mahindra Bank Return on Net worth is higher than other banks. ICICI Bank has moderate Mean Value(13.294) which is lesser than HDFC and AXIS Banks, moderate Standard deviation (1.446) and co-efficient variance (10.877) lesser than Kotak Mahindra bank followed by AXIS and HDFC Bank respectively on Return on Net worth.

Table-4 Analysis of Mean, Standard deviation, co-efficient of variance of Return on assets

PARTICULARS	ICICI	HDFC	AXIS	KOTAK MAHINDRA
MEAN	1.5	1.858	1.68	2.092
CD	0.173	0.095	0.06	0.197
CV	11.556	5.083	3.572	9.424

Source: Annual reports of ICICI, HDFC, AXIS AND KOTAK MAHINDRA banks

InterpretationFrom the table, it has been evident that the return on assets of Axis Bank has highest mean value (2.092) of Return on assets compare to the other banks. The Standard

deviation of Kotak Mahindra bank (0.197) of Return on assets is highest compare to ICICI

bank, followed by HDFC and Axis Banks. ICICI Bank has the lowest mean value (1.5), moderate standard deviation (0.173) and highest coefficient variance (11.556) compared to other banks on Return on assets.

Table 5: Analysis of Mean, Standard Deviation, Coefficient of Variance of Interests Spread

PARTICULARS	ICICI	HDFC	AXIS	KOTAK MAHINDRA
Mean	7.304	8.092	7.206	8.788
SD	0.322	0.528	0.650	0.643
CV	4.413	6.525	9.016	7.317

Source: Annual reports of ICICI, HDFC, AXIS AND KOTAK MAHINDRA banks

Interpretation-From the table, it has been evident that The Kotak Mahindra Bank has the highest interest spread (8.788) compare to other banks The Axis Bank has highest standard deviation (0.650) and co efficient of variance (9.016) of interests spread compare to other banks, followed by Kotak Mahindra Bank, HDFC Bank and ICICI Bank respectively. The ICICI Bank has moderate Mean value (7.304) with lowest standard deviation (0.322) and Co efficient Variance (4.413) compare to other banks on Interests spread.

Table 6: Analysis of Mean, standard deviation, coefficient of variance Credit deposit ratio

PARTICULARS	ICICI	HDFC	AXIS	KOTAK MAHINDRA
MEAN	106.818	83.808	82.552	130.434
SD	4.288	3.233	6.606	13.951
CV	4.014	3.858	8.002	10.696

Source: Annual reports of ICICI, HDFC, AXIS AND KOTAK MAHINDRA banks

Interpretation As per Table, it has been found that Kotak Mahindra Bank has highest Mean value (130.434), Standard deviation (13.951) and Co-efficient of variance (10.696) of Credit deposit compare to other banks. ICICI Bank has the moderate mean value (106.818), Standard deviation (4.288) and Co efficient of variance (4.014) compare to other banks on credit deposit

Table 7: Analysis of Mean, standard deviation, coefficient of variance of cash to deposit

PARTICULARS	ICICI	HDFC	AXIS	KOTAK MAHINDRA
MEAN	6.678	6.51	5.942	5.37
SD	0.638	1.338	0.316	0.658
CV	9.559	20.547	5.309	12.251

Source: Annual reports of ICICI, HDFC, AXIS, AND KOTAK MAHINDRA banks

Interpretation- As per Table it has been found that ICICI bank has the highest mean value (6.678) of cash to deposit compared to other banks. The standard deviation of the Kotak Mahindra bank (0.658) is the highest compared to others and has the highest coefficient of variance (12.251) of cash to deposit. ICICI Bank has highest mean value (6.678), Moderate Standard deviation (0.638) and lower co efficient of variance (9.559) on cash deposit

Table -8 Analysis of mean, standard deviation, coefficient of variance of Total assets turnover ratio

PARTICULARS	ICICI	HDFC	AXIS	KOTAK MAHINDRA
MEAN	6.87	9.26	8.3	10.36
CD	0.14	0.2	0.22	0.43
CV	2.038	2.160	2.650	4.151

Source: Annual reports of ICICI, HDFC, AXIS AND KOTAK MAHINDRA banks

Interpretation As per the table it has been found that Kotak Mahindra bank has the highest mean value (20.36), highest standard deviation and Co efficient of variance (4.151) of total assets ratio. ICICI bank has the lowest mean value (6.87), standard deviation of Asset turnover ratio of the ICICI bank (0.14) with the coefficient of variance (2.037846) when compared to other banks

Table-9 Analysis of mean, standard deviation, coefficient of variance of liquid assets to demand deposit

PARTICULARS	ICICI	HDFC	AXIS	KOTAK MAHINDRA
MEAN	111.136	51.77	50.976	62.674
CD	12.9	8.251	12.189	11.98
CV	11.60	15.93	23.91	19.11

Source: Annual reports of ICICI, HDFC, AXIS AND KOTAK MAHINDRA banks

Interpretation From the above table it is clear that ICICI Bank (111.136) has the highest mean value, Standard deviation (1.290) and co efficient of variance (1.160) of liquid assets to demand deposit compare to the other banks. it is clear that the position of ICICI Bank is better in compassion with HDFC, AXIS, KOTAK bank because high liquid assets indicate better position to meet the immediate and short-term deposits

HYPOTHESIS TESTING

3. ANALYSIS OF ANOVA

H₀₁ : There is no significant difference between Net profit margin among selected private sector banks in India.

Table 10

Sources of variation	Sum of Squares	Degrees of freedom	Mean Square	F (calculated value)	Table value (at 5% level of significant)
Between Groups	1.827	3	.609	0.219	0.881
Within Groups	44.400	16	2.775		
Total	46.227	19			

Interpretation- As per the table the calculated value of F (0.219) is less than the table value (0.881). We accept Null Hypothesis and conclude that, there is no significant difference between net profit margin among ICICI, HDFC, AXIS and KOTAK Mahindra private sector banks in India.

H₀₂: There is no significant difference between Return on net worth among different selected private sector banks in India.

Table 11:

Sources of variation	Sum of Squares	Degrees of freedom	Mean Square	F (calculated value)	Table value (at 5% level of significant).
Between Groups	88.855	3	29.618	15.395	.000
Within Groups	30.781	16	1.924		
Total	119.636	19			

Interpretation: As per the table, the calculated value of F test (15.395) is more than the tabulated value, hence reject null hypothesis and conclude that there is a significant

difference between Return on net worth among ICICI, HDFC, AXIS and KOTAK Mahindra

private sector banks in India.

H0₃: There is no significant difference between Return on assets among selected private sector banks in India.

Table 12:

Sources of variation	Sum of Squares	Degrees of freedom	Mean Square	F (calculated value)	Table value (at 5% level of significant).
Between Groups	.959	3	.320	15.701	.000
Within Groups	.326	16	.020		
Total	1.285	19			

Interpretation: As per the table, the calculated value of F test (15.701) is more than the tabulated value, hence reject null hypothesis and conclude that there is a significant difference between Return on Return on assets among ICICI, HDFC, AXIS and KOTAK Mahindra private sector banks in India.

H0₄: There is no significant difference between Interests spread among selected private sector banks in India.

Table 13:

Sources of variation	Sum of Squares	Degrees of freedom	Mean Square	F (calculated value)	Table value (at 5% level of significant).
Between Groups	8.256	3	2.752	9.034	0.001
Within Groups	4.874	16	.305		
Total	13.130	19			

Interpretation:As per the table, the calculated value of F test (9.034) is more than the tabulated value, hence reject null hypothesis and conclude that there is a significant difference

banks in India.

H0₅: There is no significant difference between credit deposit ratio among selected private sector banks in India.

Table 14:

Sources of variation	Sum of Squares	Degrees of freedom	Mean Square	F (calculated value)	Table value (at 5% level of significant).
Between Groups	7680.327	3	2560.109	38.337	.000
Within Groups	1068.461	16	66.779		
Total	8748.788	19			

Interpretation- As per the table, the calculated value of F test (38.337) is more than the tabulated value, hence reject null hypothesis and conclude that there is a significant difference between credit deposit ratio among ICICI, HDFC, AXIS and KOTAK Mahindra private sector banks in India

H0₆: There is no significant difference between cash deposit ratio among selected private sector banks in India.

Table 20:

Sources of variation	Sum of Squares	Degrees of freedom	Mean Square	F (calculated value)	Table value (at 5% level of significant).
Between Groups	5.287	3	1.762	2.583	.089
Within Groups	10.917	16	.682		
Total	16.205	19			

Interpretation- As per the table, the calculated value of F test (2.583) is more than the tabulated value (0.089), hence reject null hypothesis and conclude that there is a significant difference between cash deposit ratio among ICICI, HDFC, AXIS and KOTAK Mahindra private sector banks in India.

H0₇: There is no significant difference between **Asset Turnover** ratio among selected private sector banks in India.

Table 21:

Sources of variation	Sum of Squares	Degrees of freedom	Mean Square	F (calculated value)	Table value (at 5% level of significant).
Between Groups	32.744	3	10.915	144.869	.000
Within Groups	1.205	16	.075		
Total	33.950	19			

Interpretation-As per the table, the calculated value of F test 144.869) is more than the tabulated value (0.000), hence reject null hypothesis and conclude that there is a significant difference between **Asset Turnover** ratio among ICICI, HDFC, AXIS and KOTAK Mahindra private sector banks in India.

H08: There is no significant difference between liquid assets to demand deposit among different selected private sector banks in India

Table 22:

Sources of variation	Sum of Squares	Degrees of freedom	Mean Square	F (calculated value)	Table value (at 5% level of significant).
Between Groups	12184.216	3	4061.405	30.849	.000
Within Groups	2106.475	16	131.655		
Total	14290.691	19			

Interpretation-As per the table, the calculated value of F test (30.849) is more than the tabulated value (0.000), hence reject null hypothesis and conclude that there is a significant difference between liquid assets to demand deposit among ICICI, HDFC, AXIS and KOTAK Mahindra private sector banks in India.

SUMMARY OF FINDINGS

1. Ratio Analysis

- followed by Axis Bank, ICICI Bank and Kotak Mahindra Bank respectively.
- The average net profit margin of ICICI bank is more than the other private banks, followed by Kotak Mahindra Bank, Axis and HDFC bank respectively.
 - The average return on net worth of HDFC bank is the highest compare to other banks
 - The Kotak Mahindra bank has highest average return on assets compared to other banks, followed by HDFC bank, Axis Bank and ICICI bank respectively. It indicates

- the weak position of the ICICI bank in return on total assets.
- d. The Kotak Mahindra Bank has got highest average interest spread compared to other banks, followed by HDFC Bank, ICICI Bank and Axis Bank respectively. It indicates the weakness of ICICI bank in total interest income and expenses to average working fund.
- e. Kotak Mahindra Bank has the average highest Credit deposit ratio compared to other banks, followed by ICICI bank, HDFC Bank and Axis Bank respectively. Though ICICI bank is second in line for Credit deposit ratio, it still shows that ICICI bank is able to generate more loans for the deposit received as compared to HDFC and AXIS banks.
- f. ICICI Bank has highest Cash deposit ratio compared to other banks, followed by HDFC Bank, Axis Bank and Kotak Mahindra Bank respectively. It indicates that ICICI Bank has more deposit compared to other banks.
- g. Kotak Mahindra Bank has highest total assets turnover ratio compared to other banks, followed by HDFC bank, Axis Bank and ICICI Bank respectively. It shows that ICICI bank is less efficient in generating revenue from their assets.
- h. The ICICI Bank has highest Liquid assets demand deposit ratio compared to Kotak Mahindra Bank, Axis Bank and HDFC Bank respectively. It shows that ICICI bank has the highest ability to meet immediately and short-term deposit by cash or online banking or ATM. But in another side the high percentage will reflect that the bank did not mobilize the cash effectively in short-term investment.

2. Analysis of Variances

- a. The ICICI has the highest mean value of net profit margin (20.65) compare to other banks. Kotak Mahindra bank has the highest standard deviation of net profit margin (2.210) as well as co efficient of variance (0.108) compared with other banks, followed by ICICI Bank, HDFC Bank and Axis Bank respectively. ICICI

- Bank has highest Mean value (20.65) with moderate standard deviation (2.147) and co-efficient of variance (0.104) on Net Profit Margin.
- b. The Axis Bank has highest Mean value of returns on net worth compare to other banks. The Standard Deviation and Coefficient variance of Kotak Mahindra Bank of Return on Net worth is higher than other banks. ICICI Bank has moderate Mean Value (13.294) which is lesser than HDFC and AXIS Banks, moderate Standard deviation (1.446) and co-efficient variance (10.877) lesser than Kotak Mahindra bank followed by AXIS and HDFC Bank respectively on Return on Net worth.
 - c. The return on assets of Axis Bank has highest mean value (2.092) of Return on assets compare to the other banks. The
 - e. The Kotak Mahindra Bank has highest Mean value (130.434), Standard deviation (13.951) and Co-efficient of variance (10.696) of Credit deposit compare to other banks. ICICI Bank has the moderate mean Standard deviation of Kotak Mahindra bank (0.197) of Return on assets is highest compare to ICICI bank, followed by HDFC and Axis Banks. ICICI Bank has the lowest mean value (1.5), moderate standard deviation (0.173) and highest coefficient variance (11.556) compared to other banks on Return on assets.
 - d. The Kotak Mahindra Bank has the highest interest spread (8.788) compare to other banks The Axis Bank has highest standard deviation (0.650) and co efficient of variance (9.016) of interests spread compare to other banks, followed by Kotak Mahindra Bank, HDFC Bank and ICICI Bank respectively. The ICICI Bank has moderate Mean value (7.304) with lowest standard deviation (0.322) and Co efficient Variance (4.413) compare to other banks on Interests spread.
- value (106.818), Standard deviation (4.288) and Co efficient of variance (4.014) compare to other banks on credit deposit

- f. The ICICI bank has the highest mean value (6.678) of cash to deposit compared to other banks. The standard deviation of the Kotak Mahindra bank (0.658) is the highest compared to others and has the highest coefficient of variance (12.251) of cash to deposit. ICICI Bank has highest mean value (6.678), Moderate Standard deviation (0.638) and lower coefficient of variance (9.559) on cash deposit
- g. The Kotak Mahindra bank has the highest mean value (20.36), highest standard deviation and Co efficient of variance (4.151) of total assets ratio. ICICI bank has the lowest mean value (6.87), standard deviation of Asset turnover ratio of the ICICI bank (0.14) with the coefficient of variance (2.037846) when compared to other banks
- h. The ICICI Bank (111.136) has the highest mean value, Standard deviation (1.290) and coefficient of variance (1.160) of liquid assets to demand deposit compare to the

other banks. it is clear that the position of ICICI Bank is better in comparison with HDFC, AXIS, KOTAK bank because high liquid assets indicate better position to meet the immediate and short-term deposits.

3. Hypothesis Testing

There is no significant difference between net profit margin among ICICI, HDFC, AXIS and KOTAK Mahindra private sector banks in India, Since the calculated value of F is less than the table value. We accept Null Hypothesis. The other hypothesis (H_{02} to H_{08}) there is a significant difference between Return on net worth, return on assets, Interests spread, credit deposit ratio, cash deposit ratio, Asset turnover ratio and liquid assets to demand deposit among ICICI, HDFC, AXIS and KOTAK Mahindra private sector banks in India, Since the calculated values are higher than the table value. Hence, we reject the null hypothesis (H_{02} to H_{08}) and accept the alternate hypothesis. This clearly indicates that there are positive

differences in comparison of ICICI Bank and selected private banks.

SUGGESTIONS

1. ICICI Bank has to increase its net profit margin.
2. ICICI bank has to increase its return on equity percentage by buying back their stock, increasing earning, or using more debt to fund operation.
3. ICICI bank should review the managerial performance to improve the efficiency of management in the future and increase generating revenue from its assets because it has the lowest return on assets and Asset turnover ratio
4. In credit and cash deposit ratio ICICI bank has good position. So, the bank has to continue in the same policy and standard to successes.
5. It's important for ICICI bank to mobilize the cash effectively in short-term investments

6. It's important to conduct study in depth financial analysis adequacy capital of ICICI bank with its peers.

7. In depth merger of ICICI bank with AXIS bank which has more potential in terms net worth and return on assets. The combination of these two banks will become the greatest private bank in India and shall be easy to expand in the world.

CONCLUSIONS

With various techniques applied in finding the financial performance of the ICICI Bank, HDFC Bank, AXIS Bank and Kotak Mahindra Bank, we find that ICICI bank has got the highest net profit margin, Cash deposit ratio and liquid assets demand ratio with the positive differences in terms of the variances and ANOVA testing for Hypothesis. Overall ICICI bank has got satisfactory financial position irrespective of having moderate and lowest ratios in terms of return on net worth, return on assets, interest spread and assets turnover ratio. In order to

achieve best financial position in all factors, it must make efforts to increase its current assets and maintain a safety margin which will provide better liquidity position. Reduce the dependence on external equities for meeting capital requirements by focusing on internal equities and other sources of internal

financing. Introduce schemes for public that provides higher rate of interest and shorter maturity period. In order to bring confidence and build their image, banks need to provide finance to more projects. The banks should simplify the procedure of advances for quick disbursement.

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USAGE OF MASS MEDIA IN CONTEMPORARY SOCIETY

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Abstract

These technological advances of the Internet and mobile phones have created a new global culture and seem to impact on people's perspectives. The Internet culture has dared to take on to unbeaten paths to initiate educational, cultural and psychological revolutions. Internet technology has raised the level of awareness to hitherto unknown levels. A cursory glance at the studies conducted across the globe compels one to take notice of the 'digital divide' that has come about in the society. Usage of Mass Media in contemporary society is considered for study because, to understand which medium is more used by the public and to analyze whether the new media have made any inroad into the existing media. This study was confined to four districts in Karnataka (IT bowl of India). The sample consisted of 801 respondents. The Survey method was found to be appropriate to conduct a study of this nature. 1. The print media is still a more popular medium than the new media. There is no significant relation between age and newspaper and magazine reading which means irrespective of age everybody reads newspapers and magazines with few exceptions. 2. Television is watched by everyone irrespective of age unlike radio which is being listened to more by youngsters than adults. 3. There is a correlation between age and listening to the radio, age and using computer, and age and surfing Internet both at home and office. 4. There is no relation between age and owning personal mobile phone

Key terms: Society, Internet, Surfing, Browser, To chat, Social Networking

Introduction

Mass media which have proved to be the most successful channels of communication excelled in creating a common culture. The

advent of TV, in particular promoted the isolation of human beings. Now, finally, there is a counter-trend. Howard Rheingold framed it beautifully, when he wrote *The*

Virtual Community, nearly 15 years ago: "Perhaps cyberspace is one of those informal public places, where people can rebuild the aspects of community that were lost when the malt shop became a mall. Theorists such as Louis Wirth and Talcott Parsons have emphasized the importance of mass media as instruments of social control. In the 21st century, with the rise of the internet, the two-way relationship between mass media and public opinion is beginning to change.¹

The mass media constitute a powerful and pervading force in our lives. We are exposed daily to a bombardment of media messages. Most of the information we receive about our community, our state, the nation and the world comes to us through newspapers, magazines, television and radio.

The information and views communicated through these media have great impact on our attitudes toward people, events and problems. Mass media expose people to a flood of information almost narcotic sing reader, listener or viewer. Due to mass media the range and amount of information available to the people has vastly increased.²Significance of the Study: The new generation is now being raised with widespread availability of Internet connectivity, with consequences on privacy, identity, and copyright concerns.

These "Digital natives" or netizens face a whole set of concerns that was not present for earlier generations. Karnataka is one of the more advanced states with Bangalore being the IT capital of the country. It is the right time to study whether people still are exposed to traditional mass media when they have access to new media for more than a decade now.

In the mid1990s one of the hot topics that dominated the sphere of discourse was regarding sociability and the Internet. On the one hand people argued that there was something innovative about the virtual communities whereas others were of the opinion that online social networking would adversely affect the real life relationships of people.³

With the extending impact of media of mass communication on individuals and groups, the Indian society overall is reacting swiftly. The pervasive effects of the various media on the various spheres of the Indian life-economic, social, cultural, intellectual, religious and even moral values are transforming rapidly.

Mass media are capable of creating various kinds of impact on mankind. They play a crucial role in the function and change of any

society. A study of social change cannot be done without studying mass media. Therefore, in the present times when technology has brought about changes in the society, mass media studies have become important.⁴

Research Methodology: The study makes an effort to measure the exposure of the respondents to various media. The statistical techniques employed for data analysis are described.

Primary Data: Primary data was collected from students and people by the use of structured questionnaire method.

Sample Profile: The sample (800) was selected on the basis simple random sampling

technique. Since the study also pertains to Internet, it requires respondents who are the users of Internet as well. Therefore the sample consists of users of media like newspapers, Radio, magazines, TV and new media and excludes non users.

Specific Objectives

The specific objectives are as follows:

1. To analyze the frequency of utilization of mass media
2. To analyze the exposure to various media

Table-1: Showing frequency of media exposure by respondents:

Media	YES		NO		t-value
	Frequency	Percent	Frequency	Percent	
Newspaper	706	88.1	95	11.9	21'.58
Magazine	447	55.8	354	44.2	3.29
Radio	508	63.4	293	36.6	7.59
TV	708	88.4	93	11.6	21.73
Computer	472	58.9	329	41.1	5.05
Internet at Home	312	39.0	489	61.0	-6.05
Internet at Office	239	29.8	562	70.2	-11.41
Personal Mobile Phone	600	74.9	201	25.1	14.09

t=21.58, p<0.01

df:799

From the table it can be deciphered the print media is still a more popular medium than the new media. The reasons could be newspapers are cheap, easily available, portable, anywhere and everywhere could be read, personal touch towards newspaper and people have been used to read newspaper since their childhood as against new media . It is interesting to note that TV as well as newspapers has the highest viewership and readership. A good percentage of people (75%) own mobile phone whereas only 39% of them have Internet connection at home.

Table- 2: shows reading of newspapers by respondents of different age groups

Age	Newspaper		Total
	Yes	No	
18-24	485	74	559
25-34	128	18	146
35-44	38	2	40
45-54	41	1	42
55 and Above	14	0	14
Total	706	95	801

$\chi^2 = 8.34$; NS; $p > 0.05$, df: 4

There is no significant relationship between age of the respondents and the newspaper reading ($\chi^2 = 8.34$; NS; $p > 0.05$ df: 4). It may be inferred that irrespective of age, people of all age groups read newspapers. Age is independent of newspaper reading.

Table-3: shows the reading of magazines by respondents of different age groups

Age	Magazine		Total
	Yes	No	
18-24	296	263	559
25-34	81	65	146
35-44	27	13	40

45-54	31	11	42
55 and Above	12	2	14
Total	447	354	801

$\chi^2 = 15$; NS; $p > 0.05$, df: 4

Magazines are read by everybody irrespective of age. But the type of magazines read may vary from one age group to another so also time spent on reading. The table also reveals that the number of youth who read newspaper and those who don't is almost equal. But age is not the factor for reading or not reading magazine

Table-4: shows listening radio by respondents of different age groups

Age	Radio		Total
	Yes	No	
18-24	367	192	559
25-34	74	72	146
35-44	28	12	40
45-54	27	15	42
55 and Above	12	2	14
Total	508	292	801

$\chi^2 = 15.76$; $p < 0.05$ df: 4

It may be inferred that listening to radio varies from one age group to another. Younger the age higher is the listening pattern. Radio appears to be more popular among the younger people than older ones. There is high listening in the age group of 18-35 years.

Table-5: shows watching TV by respondents of different age groups

Age	TV		Total
	Yes	No	
18-24	490	69	559
25-34	129	17	146
35-44	35	5	40
45-54	41	1	42
55 and Above	13	1	14

Age	TV		Total
	Yes	No	
18-24	490	69	559
25-34	129	17	146
35-44	35	5	40
45-54	41	1	42
55 and Above	13	1	14
Total	708	93	801

$\chi^2 = 4.09$; NS; $p > 0.05$ df: 4,

Television is watched by everybody irrespective of age as it is an attractive audio visual medium unlike radio where youngsters listen more compared to adults.

Table-6 shows using of Computers by respondents of different age groups

Age	Computer		Total
	Yes	No	
18-24	307	252	559
25-34	95	51	146
35-44	26	14	40
45-54	32	10	42
55 and Above	12	2	14
Total	472	329	801

$\chi^2 = 15.92$; $p < 0.05$, df: 4

The reasons for the popularity of computers among the youngsters could be attributed to the fact that they are exposed to computers since their childhood days where as adults were not, as the computers set strong foot in India only after 1990s and the present adults most of them are computer illiterates and or not computer savvy.

Table-7: shows owning personal mobile phone by respondents age wise

Age	Personal Mobile Phone		Total
	Yes	No	
18-24	412	147	559

25-34	109	37	146
35-44	34	6	40
45-54	34	8	42
55 and Above	11	3	14
Total	600	201	801

$\chi^2 = 3.52$; NS; $p > 0.05$, df: 4

The data shows that mobile phones are owned by everybody irrespective of age. Though it is an assumed notion that youth are the maximum users of mobile phones the data indicates there is no relation between age and owning personal mobile phone.

Analysis and Discussion:

The analysis of data was done by using percentage analysis and graphical representation. The interpretation of data was done using chi-square and t- tests.

1. The print media is still a more popular medium than the new media. There is no significant relation between age and newspaper and magazine reading which means irrespective of age everybody reads newspapers and magazines with few exceptions.

2. Television is watched by everyone irrespective of age unlike radio which is being listened to more by youngsters than adults.

3. There is a correlation between age and listening to the radio, age and using

computer, and age and surfing Internet both at home and office.

4. There is no relation between age and owning personal mobile phone.

Inferences and Implications of the Study

Media have many facets in our daily life. It affects our thoughts, feelings and emotions sometimes it affects our total behavior. The study in general reveals that though internet has grown exponentially in India, surprisingly access to Internet among the respondents is very limited. While newspapers and television rule the roost, radio and magazine follow suit. But computers are still a far cry.

There is no significant relation between age and newspaper, magazine reading and television viewing. But there is a significant relation between age and exposure to computers.



New media (Internet and mobile phone) are considered to be the marvels of the twentieth century. It is an assumption that exposure to Internet is high among the younger

generation. The data revealed that people have embraced computers as one among mass media in their day-to-day life.

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Usage of K-means Algorithm to Analyze Crime Dataset

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Abstract

Crime analysis is a set of techniques that assist the police departments to become more effective though better information. Our Proposed system help to predict the probability of crime occurrence in a city by analyzing the crime dataset and visualize the results on a google map for better understanding. Here we can predict the most places where the crime might occur. This is done by using K-means clustering algorithm which group the similar objects into clusters. This system can be used by police for crime prediction cases and proactive steps for catching criminals.

Keywords —Crime, Data mining, Clustering, K-Means, Google Map, Web application.

Introduction

Nowadays, the crime rate is increasing day by day and all the efforts of the government's worldwide aim to reduce the crime rate. With the help of data mining which is a great field of applying high volume of dataset and it proved that it helps to take advantages of historical data with its techniques and it is going to benefit the police departments with analyzing the data and extract the knowledge from it. Data mining consists of many techniques like clustering, classification,

prediction, etc. Clustering used to cluster (group) objects with similar attributes from dataset for further analysis and one of the algorithm used in clustering is k-means algorithm. Most of the crimes are unsolved and contained empty values so that restrict us to choose clustering over classification. Clustering is known as the simplest and fastest algorithm for clustering compared to other algorithms and it is the best choice when It comes to cluster high volume of data due to its less computational speed. In this project we are going to create a web

application with five features that can be helpful for police and this project use crime dataset that belongs to Chicago city in USA and we implemented k-means algorithm in NetBeans software, to cluster the crime dataset and give the results which is going to show us the crime prone areas with the rate of crime occurred there, and it is going to determine the percentage of a particular crime occurring in particular area as well as it is going to visualize the results of each crime on google map including the type, number and the time so the police can take advanced strategies for crime reduction.

Literature Review

Jyoti Agarwal et al [1] proposed a system which includes steps for crime analysis starting with extraction of crime patterns and prediction the crime using k-means algorithm and that lead to detection of the crime at the end with the use of Rapid miner tool.

Manish Gupta et. al. [2] study the existing system in use by Indian police and highlighted the basic features of the system, then he introduced a criminal analysis tool which is based on data mining techniques that helps police department to carry out the activities efficiently.

Maloti and Santhosh Baboo [3] proposed a crime analysis tool for Indian scenario and proved that it is effective for identifying crime patterns and prediction. To develop the tool, he develops a data cleaning algorithm and he enhanced clustering algorithm (Kmeans, DBScan).

Kadhim Swadi Al-Janabi [4] proposed a framework for crime and criminal data analysis. For data classification, he used decision tree algorithms and simple K-means for data clustering. The result is used for prediction of trends and behavior between crimes and criminals.

Chris Delaney [5] he pointed out about the importance of identifying and make tactical analysis of crime trends and patterns by criminal investigators all over the world.

Priyanka Gera and Rajan Vohra [6] did a study at the use of clustering technique in data mining to analyze the crime patterns which helped to recognize which type of crime is more occurring and showed the distribution of each crime type in every area category.

Methodology

Data mining techniques can be applied in crime analysis and it help to take advantage of historical data and extract knowledge from it therefor help to take better decisions. A data mining approach such as clustering is used to cluster the data into groups where similar objects are placed together and in this system, clustering helps to group the same crime types together which means crime like “murder” are grouped together and same for “rape” cases and so on. In addition to that, the system determines the low, medium and high areas of crime based on the dataset

K-means process consist of the following steps:

choose k number of clusters as initial step.

choose a set of K instances as centers of the clusters.

each instance assigned by the algorithm to the cluster which is closest.

The cluster centroids are recalculated either after whole cycle of re-assignment or each instance assignment.

The process is iterated.

The algorithm requires to specify k number of clusters in advance. It is unable to handle noisy data and outliers and not suitable to discover clusters with non-convex shapes.

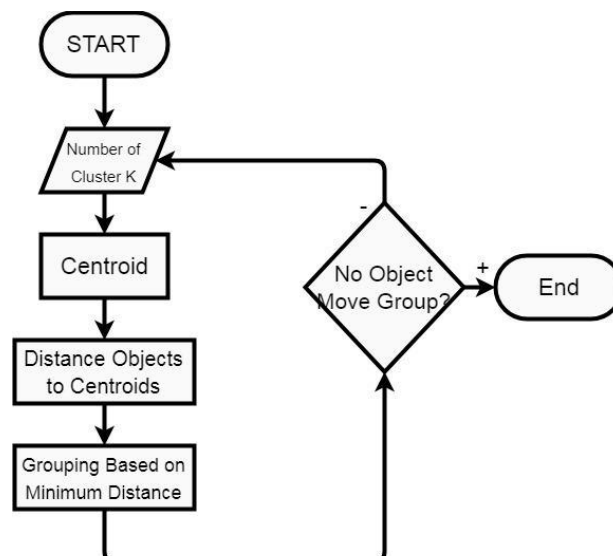


Fig. 1. K-means Clustering Algorithm

K-means is chosen to be used here because the ease of implementing it using java, plus its simplicity and speed which is very appealing in practice and it is suitable for high volume crime dataset and can help to extract useful information.

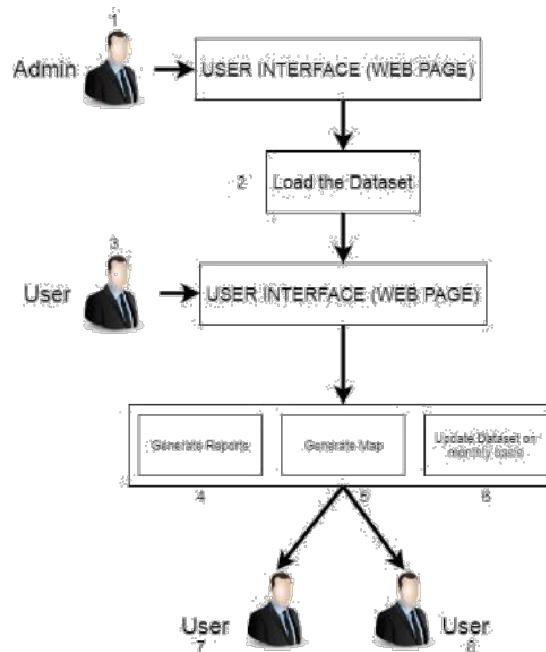


Fig. 2. System Architecture

The dataset imported from Chicago police department included 6.54M rows of committed crimes from 2011 until present and 22 columns such as (id, date, type, location...).

We are going to take this data and imported into NetBeans software and implement the k-means algorithm in java and here we aimed to implement the algorithm in the best way with an optimized code to ensure the efficacy and speed as well as the accuracy in the work. The next part is to choose the number of clusters and it is somehow subjective in general. As we saw, that we are dealing with

a huge dataset, we decided to choose 10 clusters for better prediction. Then we can visualize the clusters that are created by k-means on the google map and determine the crime prone areas and each cluster is going to be denoted with a number indicates the crimes included in it. Then it will visualize the places where a specific crime occurs (such as there more theft incidents occurs at tourist

destinations and that is the main work which is going to help the police to focus on some areas and take more precautions to prevent any future crimes and hence reduce the crime rate. we can also visualize all the crime locations of the city on the google map for good understanding of the situation. Additional feature is implemented to show the percentage of a specific crime that occur in specific part of the city and an example of that is “rape” incidents are twice in villages than cities. In addition to that, implementing a performance features are necessary to help to monitor the rate of the crime to see if it is increasing or decreasing.

Finally, reports must be generated and can be download that contains the crime rate graphs and map images.

Module Description

Proposed system consists of two modules, Admin Module and User Module.

Admin module where his work is to train the dataset and uploaded to make it available to the authorized users. The crime dataset should not contain any empty values and some dataset contain a lot of attributes so here we filter our dataset according to some

requirements to ensure the accuracy in the clustering process.

The user module is about the user’s work of determining the cluster number which is depends on the method used for measuring similarities and the parameters used for partitioning. Then applying the k-means algorithm on the dataset and starting his job for analyzing the crime patterns and monitoring the crime rate. Then generating the required reports that is going to be demanded by the employees in the police department. So here, many users can share the same work on analyzing the clustering results and trying with different number of clusters to ensure the accuracy and finally they can identify common crime patterns with the help of the system.

Conclusion and Future Work

This system is mainly used to cluster the dataset and apply k-means algorithm on the crime dataset for crime analysis purpose and visualizing the clustering results and crime incidents on the map and preparing reports of the crime rate. This process is to help to predict future crime based on this historical dataset.

As a future work more features can be added to this project in the future which can be more helpful and give more information about the crimes and criminals. For better predicting results, different techniques can be

used in crime analysis field or using a different algorithm and comparing the results and efficiency between the different algorithms.

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POST MODERNISM

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Abstract

Post modernism pertains to the deepest aspects of our being and life. Postmodern approaches antagonize methodological conventions. It challenges established structures and belief systems in society and culture from 1960s. It embraces complex and often contradictory layers of appreciation. It introduced a new wave of freedom and a break from established rules and regulations.

Key Words: Post Modernism, approaches

Introduction

Post Modernism is a theory and practice which has become popular in Literature and the Arts in a late 20th century characterized by a broad skepticism. Post Modernism, as a Philosophical movement is largely a reaction against the philosophical assumptions and values of the Modernism which started after the end of the First World War. Just like post structuralism followed structuralism, post modernism followed modernism.

Post Modernism

Modernism and Post Modernism are like two opposed moods or attitudes. The modernist is

sad and desperate at the state of affairs and possesses a tone of lament while the post-modernist is glad and had fun on it. Postmodern philosophy tends to conceptualize the world as being impossible to strictly define or understand. After the First World War ends, society had lost its morality and religious faith and hope were fading away, the environment was polluted. Modern writers wrote in hope of reforming the society and lamenting the glory of the Country's past .T.S. Eliot in his poem *The Wasteland* opened the lines,

“April is the cruellest month, breeding Lilacs
Out of the dead land, mixing Memory and desire
Stirring Dull roots with spring rain.”

The opening lines shows the contrasted situation of the land with its past when Chaucer begins with a description of April's "sweetest showers" in his *Prologue to The Canterbury Tales*. While modernist writer T.S. Eliot lamenting the present situations with the consciousness of the past beauty. The modernist generation was often termed as THE LOST GENERATION writers like Ernest Hemingway, F. Scott Fitzgerald etc. often wrote about the disillusionment and moral degradation as well as the horror of the aftermath of the war while Post-modernist writers played with the present situations ironically in reactions to the modernism. As post modernism started after the end of the Second World War in the 1950s somehow the problems faced with the new generation were same with the former generation but differs in their perspective.

THE CHARACTERISTICS OF POST MODERNISM

Exploration and understanding the characteristics of Post modernism through the play

Waiting for Godot

Waiting for Godot is a play by Samuel Beckett premiered in 1953 which falls both into the genre of both modernism and postmodernism. The play celebrates the fragmentation in all dimensions. The language, plot, character, setting and themes are presented in a fragmented form. The difference between *The Wasteland* and *Waiting for Godot* is that the former laments the glory of the past which has fallen apart, but the latter never laments for the past, it celebrates the fragmentations.

Secondly, post-modernism holds the view that irrational is real and what is real is irrational. Post modernism rejected logical thinking. The play with its bizarre characteristics turns irrationality in the very rationality, the very unreality into the reality.

Thirdly, in post-modernist era, there is changelessness in the life of the people and they grew bitter towards their monotonous lifestyle. It can also be seen in the play *Look Back in Anger* where the writer portrayed the unchanging life of the characters and Jimmy

Porter's bitterness towards the unchanged. In *Waiting for Godot* also, there is no plot as well as action in the play and nothing happens in the play like there is no order in post modernism and life was hopeless.

Fourthly, in the play, there is no truth, all things are relative. Postmodernism asserts that truth is not mirrored in human understanding of it, but is rather constructed as the mind tries to understand its own personal reality. Thus, facts and falsehood are interchangeable.

Fifthly, Identity crisis .In the play, we do not learn anything about the two major characters Vladimir and Estragon such as their age, status in society, job etc. They do not even tell about their past, their loss of memory is also associated with their identity crisis. In Act 2, Pozzo appears blind and he cannot remember that they had met Estragon and Vladimir the previous day.

Sixthly, Post modernism emphasized the reader than the writer, so most of the themes have multi meanings which can differ according to the reader's interpretation. For instance the name GODOT in the play *Waiting for Godot* can have a multi meaning.

For some critics asserts that Godot represents God in life, while some interpreted as change which was eagerly awaited by the postmodern generation and hopes.

Seventhly, the existential crisis, the characters faced an existential crisis as life seems nothing to them; Samuel Beckett asserts that at the root of our being there is nothingness. This frustration is expressed through the repetition of the sentence, "nothing to be done" by Estragon. Almost all modern people after two world wars experienced the same feelings; life appears to them as an absurd thing with full of purposeless, nothingness and meaningless.

Other characteristics of post modernism are liberal ethics which is defending the cause of feminist and homosexuals, pro-environmentalism defending 'Mother Earth' they blamed the Western society for its destruction, disillusionment and ownership.

Among the best known post-modernism philosophers are Michel Foucault, Jacques Derrida, Jean Francois Lyotard, Jean Baudrillard, Roland Barthes etc. Lyotard is perhaps one of the most identifiable postmodernist and he has described Post

modernism as a condition of the present state of culture, social structure and self.

As the aftermath of the Second World War many youngsters grew frustrated at the society and corrupted authorities, birth of the concept of an 'Angry Young Man' to describe frustrated young men of its era who hopefully waited for a change and security but never arrives. During this age of despairing, Ernest Hemingway said that man is not made for defeat in his novella *The Old man And the Sea* As the post modernism emerge out of skepticism, so did the

movement of the Beat Generation during its era too in America. The writers who were called Beat writers questioned the materialism of the society, authority and environment pollutions. The Beat generations hold many similar perspectives with the post-modernist writers and they were quite influential as they influenced many frustrated young people there influence was also one of the many things which stirred the spirit of the youth when the famous 'Counter Culture Movement' evolved in the 1960s in America and spread all over Europe.

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