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CUSTOMER SATISFACTION IN THE COMMERCIAL BANKS WITH SPECIAL REFERENCE TO NEPAL

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ABSTRACT

The present study is about knowing the customer satisfaction of customers of commercial banks in Nepal. A five point likert scale is used for measurement of customer satisfaction. The respondents gave a fairly high rating. One way ANOVA revealed that satisfaction varies according to the gender of the customer, but age, profession, income, occupation, marital status and duration of dealing with bank did not show variations across different levels.

KEYWORDS

commercial bank, customer satisfaction.

1. INTRODUCTION

Customers face a growing range of choices in the products and services they can buy. They are making their choice on the basis of their perceptions of quality, service, and value. Banks need to understand the determinants of customer value and satisfaction. Customer delivered value is the difference between total customer value and total customer cost. Customers will normally choose the offer that maximizes the delivered value. Customer satisfaction is the outcome felt by buyers who have experienced a company performance that has fulfilled expectations. Customers are satisfied when their expectations are met and delighted when their expectations are exceeded. Satisfied customers remain loyal longer, buy more, are less price sensitive, and talk favorably about the company. The company's goal is not only to get customers, but even more importantly to retain customers. Customer relationship marketing provides the key to retaining customers and involves providing financial and social benefits as well as structural ties to the customers. Banks must decide how much relationship marketing to invest in different market segments and individual customers, from such levels as basic, reactive, accountable, proactive, and full partnership. Total quality marketing is seen today as a major approach to providing customer satisfaction and company profitability. Banks must understand how their customers perceive quality and how much quality they expect. Banks must then strive to offer relatively higher quality than their competitors.

2. LITERATURE REVIEW

Shrestha (2013) in his article entitled "An empirical study of customers' satisfaction in the Nepalese commercial banks" has examined the customers' satisfaction level of six commercial banks of Nepal. It is found that the average score of customers' responsiveness of foreign joint venture commercial banks were more than the national commercial banks, it means that the customers' of foreign joint venture banks were more satisfied than the customers' of national banks in terms of service provided by Nepalese commercial banks.

Munusamy, Chelliah and Mun (2010) their research concluded that the combination of assurance, reliability, tangibles, empathy and responsiveness together contributed to 62.1% effective on customer satisfaction.

Lohani and Bhatia (2012) in their research paper entitled "Assessment of Service Quality in Public and Private Sector Banks of India with Special Reference to Lucknow City measured the customers satisfaction level of 410 respondents, 220 from three public sector and 190 from three private sector banks, by using SERVQUAL model and five point Likert's scale. The result of the study revealed that the majority of the respondents of public sector banks and private sector banks were male (69.2%) and belong to the age group of 34-45 years (26.10%). Majority of the respondents for this study were post graduate (34.15%), private employees (29.76%) and were having income in the range of Rs.25,000-40,000 (30.98%). The overall customers' attitude towards bank services was that they were satisfied with the service provided by their banks. But still customers expect more and better services to be provided.

Haq and Muhammad (2012) in their research paper entitled "Customer Satisfaction :A Comparison of Public and Private Banks of Pakistan "have examined and compared the public and private sector banks in Pakistan in terms of customer satisfaction. The researchers prepared structured questionnaire and distributed to 351 randomly selected respondents to know their views. The research concluded that the customers of private sector banks were more satisfied than the customers of public sector banks.

Kumbhar (2011) in his research concluded that the public sector banks need to improve efficiency, e-fulfillment, easiness & convenience and perceived value. Likewise, the private sector banks need to improve easiness and convenience, efficiency, security and responsiveness, brand reputation and perceived value in ATM service.

Gyawali and Kunwar (2014) concluded that there is significant relationship between dependent variable SQ (service quality) perception and independent variables tangibles, empathy, reliability, assurance and responsiveness.

Gorji and Sargolzaee (2011) in their research indicated that the service quality and customer satisfaction in the public sector was better than those in the private sector.

Banerjee and Sah (2012) in their research paper entitled "A Comparative Study of Customers' Perception of Service Quality Dimensions between Public and Private Banks in India" have identified the gap between customer expectation and perceptions of the actual service received in public and private banks in India by using the SERVQUAL model. The study concluded that customers' expectations' was more with the private banks and the level of satisfaction was also higher while they deal with the private banks.

Pravin (2014) in his research paper entitled "Evaluation of Individual Depositors' Satisfaction from the Deposit Management Services of Commercial Banks of Bangladesh" has evaluated the satisfaction of the individual depositors from deposit management services of bank of Bangladesh.

Buttle (1996) in his research paper entitled "SERVQUAL concluded that the SERVQUAL has become an important research topic and it provides a technology for measuring and managing services quality (SQ).

Koirala and Shrestha (2012) in their research found that the Nepal Investment Bank was the first popular bank. It was also concluded that customer satisfaction is highly affected by service quality. Service also leads to customer relation and brand loyalty and increase the image of the bank.

Karim and Chowdhury (2014) in their study concluded that tangibles, reliability, responsiveness, assurance and empathy significantly and positively influenced customer attitudes in terms of satisfaction that is service quality dimensions are crucial for customer satisfaction in private commercial banking sector in Bangladesh.

3. RESEARCH METHODOLOGY

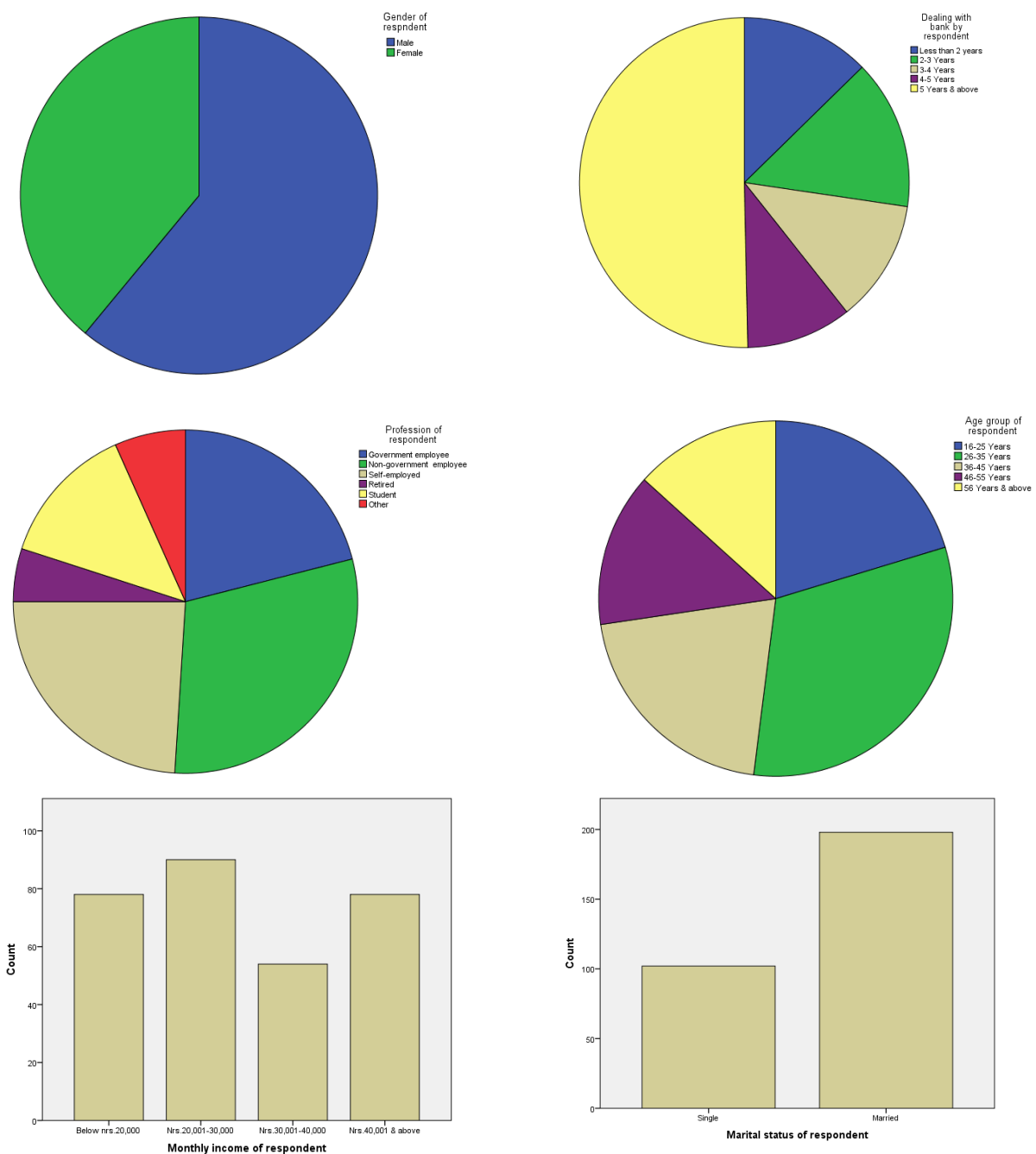
The objective of the study is to measure the customer satisfaction in the banks and to find out if customer satisfaction varies with customers' demography. Convenience method of sampling is used. Data is collected from the customers of six banks which are located in Nepal. Customer satisfaction is measured using a 5 point likert scale by using a structured questionnaire.

4. ANALYSES AND FINDINGS

The mean, median and mode of customer satisfaction are found as 3.86,4,4 (appendix 1). Thus we can say that the customers of banks in Nepal are satisfied with the services.

One way ANOVA test was significant in only gender case. Thus we may conclude that customer satisfaction varies with gender, i.e. male and female customers differed in their satisfaction level. All other characteristics age, occupation, income, profession, qualification and dealing with bank years' did not show variations across groups (appendix 2, 3, 4, 5, 6, 7, 8). The sample details are presented next:

FIGURE: 1 to 6



5. CONCLUSION

The results of the study show that customer satisfaction level of banks is good. When personal characteristics of customers were checked for variation with regard to satisfaction level, only one characteristic i.e. sex tested positive in ANOVA. That is gender wise customer satisfaction level differs. All other personal characteristics did not reveal significant differences. Age, income, occupation, profession, income and duration of dealing with bank variables did not show significant difference at different levels. Customer satisfaction had no variation according to age differences, occupation differences, profession differences, income difference, and duration of dealing with banks differences.

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APPENDIX

Mean value of Customer satisfaction of customers of banks in Nepal.

APPENDIX 1: STATISTICS

Satisfaction level		
N	Valid	300
	Missing	0
Mean		3.68
Median		4.00
Mode		4
Variance		.392

APPENDIX 2 : ONEWAY SATISFACTION LEVEL BY AGE

ANOVA					
Satisfaction level					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.542	4	.635	1.634	.166
Within Groups	114.738	295	.389		
Total	117.280	299			

APPENDIX: 3 ONEWAY SATISFACTION LEVEL BY GENDER

ANOVA					
Satisfaction level					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.922	1	2.922	7.613	.006
Within Groups	114.358	298	.384		
Total	117.280	299			

APPENDIX 4 : ONEWAY SATISFACTION BY MSTATUS

ANOVA					
Satisfaction					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.252	1	.252	.850	.357
Within Groups	88.286	298	.296		
Total	88.537	299			

APPENDIX 5 : ONEWAY SATISFACTION LEVEL BY QUALIFICATION

ANOVA					
Satisfaction level					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.973	5	.395	1.006	.414
Within Groups	115.307	294	.392		
Total	117.280	299			

APPENDIX 6 : ONEWAY SATISFACTION LEVEL BY MINCOME

ANOVA					
Satisfaction level					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.010	3	.670	1.721	.163
Within Groups	115.270	296	.389		
Total	117.280	299			

APPENDIX 7 : ONEWAY SATISFACTION LEVEL BY PROFESSION

ANOVA					
Satisfaction level					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.580	5	.516	1.323	.254
Within Groups	114.700	294	.390		
Total	117.280	299			

APPENDIX 8 : ONEWAY SATISFACTION LEVEL BY DWBANK

ANOVA					
Satisfaction level					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.322	4	.580	1.490	.205
Within Groups	114.958	295	.390		
Total	117.280	299			

COMPUTER VIRTUALIZATION: STRATEGIC ADVANTAGE TO BUSINESS

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ABSTRACT

Virtualization refers to technologies designed to provide a layer of abstraction between computer hardware systems and the software running on them. By providing a logical view of computing resources, rather than a physical view, virtualization solutions make it possible to do a couple of very useful things. It can allow to trick operating systems into thinking that a group of servers is a single pool of computing resources and to run multiple operating systems simultaneously on a single machine. Virtualization continues to demonstrate additional tangible benefits the more it's used, broadening its value to the enterprise at each step.

KEYWORDS

computer virtualization, CIO, JVM, RAID.

1. INTRODUCTION

Virtualization has its roots in partitioning, which divides a single physical server into multiple logical servers. Once the physical server is divided, each logical server can run an operating system and applications independently. In the 1990s, virtualization was used primarily to re-create end-user environments on a single piece of mainframe hardware. If you were an IT administrator and you wanted to roll out new software, but you wanted see how it would work on a Windows NT or a Linux machine, you used virtualization technologies to create the various user environments. But with the advent of the x86 architecture and inexpensive PCs, virtualization faded and seemed to be little more than a fad of the mainframe era.

During the past few decades, CIOs (Chief Information Officers) have stood at the center of one of the great technological revolutions in history: the replacement of the physical atom by the computational bit as the medium of commerce and culture. Virtualization is the substitution of physical computing elements, either hardware or software, with artificial impostors that exactly replicate the originals, but without the sometimes inconvenient need for those originals to actually exist. As every aspect of computing has grown more complex, the flexibility and intelligence that virtualization adds to the management of computing resources have become steadily more attractive.

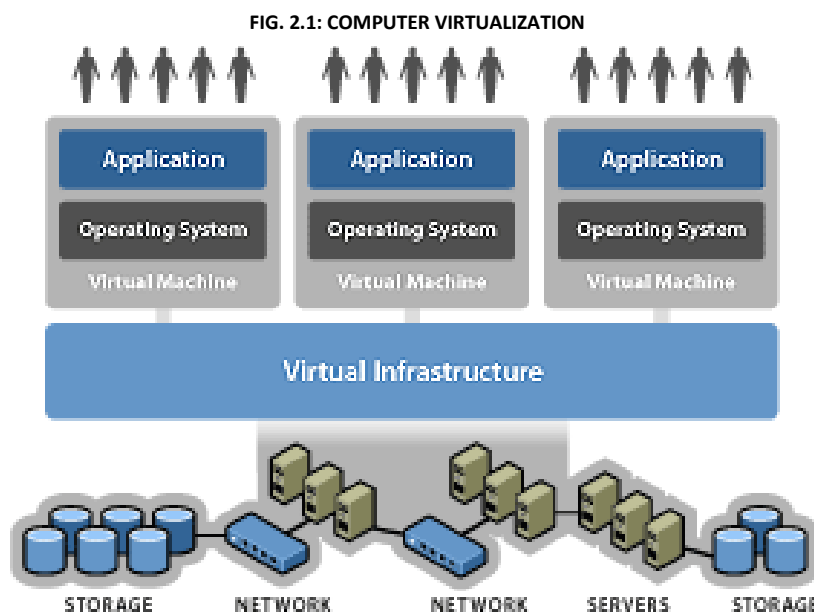
2. DIFFERENT TYPES OF VIRTUALIZATION

The power to design any kind and number of servers that you like allows you to align capacity with load continuously and precisely. It is able to deploy nearly 200 virtual servers on only a dozen physical machines. Typical CPU, network, disk and memory utilization on the virtualization is greater than 50 percent—compared with utilization of around 5 percent on dedicated server hardware. Virtualization also makes disaster recovery planning simpler, because it allows you to write server clusters appropriate to whatever infrastructure you have on hand. There are three basic categories of virtualization:

Storage virtualization melds physical storage from multiple network storage devices so that they appear to be a single storage device.

Network virtualization combines computing resources in a network by splitting the available bandwidth into independent channels that can be assigned to a particular server or device in real-time.

Server virtualization hides the physical nature of server resources, including the number and identity of individual servers, processors and operating systems, from the software running on them.

**3. STRATEGIC ADVANTAGE OF VIRTUALIZATION**

Virtualization underlies the well-known RAID storage tricks that allow many disks to be treated as one huge drive for ease of access, and one disk to be treated as many for the purpose of robust backup. Another prime use for virtualization is development. The hardware world is growing much more complex all the time: Product cycles are turning faster, the number of device types is always rising, and the practice of running programs over networks means that any given program might come in contact with a huge universe of hardware. Developers can't begin to afford to buy all of this hardware for testing, and they don't need to: Running products on virtualized models of the hardware allows for quality assurance without the capital expense. Virtualizing the underlying hardware also gives developers far more control. During the next year or two, virtualization is on track to move from its current success in storage, servers and development, to networks and data centers. So CIOs will then be able to build software versions of firewalls, switches, routers, load balancers, accelerators and caches, exactly as needed. Everything that was once embodied in cards, disks and physical equipment of any kind, will be organized around a single point of control.

In general, virtualization possesses four key characteristics that benefit the business:

- **Compatibility:** Virtual machines are compatible with all standard computers

Just like a physical computer, a virtual machine hosts its own guest operating system and applications, and has all the components found in a physical computer (motherboard, VGA card, network card controller, etc).

- **Isolation:** Virtual machines are isolated from each other as if physically separated

While virtual machines can share the physical resources of a single computer, they remain completely isolated from each other as if they were separate physical machines. If, for example, there are four virtual machines on a single physical server and one of the virtual machines crashes, the other three virtual machines remain available. Isolation is an important reason why the availability and security of applications running in a virtual environment is far superior to applications running in a traditional, non-virtualized system.

- **Encapsulation:** Virtual machines encapsulate a complete computing environment

A virtual machine is essentially a software container that bundles or “encapsulates” a complete set of virtual hardware resources, as well as an operating system and all its applications, inside a software package. Encapsulation makes virtual machines incredibly portable and easy to manage.

- **Hardware independence:** Virtual machines run independently of underlying hardware

Virtual machines are completely independent from their underlying physical hardware. For example, you can configure a virtual machine with virtual components (eg, CPU, network card, SCSI controller) that are completely different from the physical components that are present on the underlying hardware. Virtual machines on the same physical server can even run different kinds of operating systems (Windows, Linux, etc).

Virtualization examples so far have all been hardware-centric, because the inherent inflexibility of hardware means the elasticity advantages of virtualization are greater than with software. However, virtualization can work anywhere in the computing stack. You can virtualize both the hardware and the operating system, which allows programs written for one OS to run on another, and programs written for a virtual OS to run anywhere (similar to how Java maintains its hardware independence through the Java Virtual Machine, JVM). Quite possibly the growth of virtualization predicts a deep change in the responsibilities of CIOs. Perhaps in the not-too-distant future no CIO will ever think about hardware: Raw physical processing and storage will be bought in bulk from information utilities or server farms. Applications will be the business of the departments or offices requiring them. The center of a CIO's job will be the care and feeding of the execution environment. The very title of CIO might vanish, to be replaced, of course, by CVO.

4. CONCLUSION

In that world, virtualization could graduate into a full-throated simulation of entire systems, the elements of which would not be just computing hardware, as now, but all the motors, switches, valves, doors, engines, vehicles and sensors in a company. The model would run in parallel with the physical company and in real-time. Where now virtualization is used for change management, disaster recovery planning, or maintenance scheduling for networks and their elements, it would in the future do the same for all facilities. Every object or product sold would come with a model of itself that could fit into one of these execution environments. It would be the CVO's responsibility to make sure that each company's image of itself was accurate and complete and captured the essentials. And that would not be a virtual responsibility in the least.

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ROLE OF MANAGEMENT INFORMATION SYSTEM FOR DECISION MAKING PROCESS IN THE ORGANIZATION

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ABSTRACT

Today's business environment is volatile, dynamic, turbulent and necessitates the demand for accurate, relevant, complete, timely and economical information needed to drive the decision-making process in order to accentuate organizational abilities to manage opportunities and threats. Information system is a professional and academic discipline concerned with the strategic, managerial and operational activities involved in the gathering, processing, storing, distributing and use of information and its associated technologies in society and organizations. Management Information System(MIS) is called as information system which is useful for decision making in an organization. The main emphasis of MIS is to analyze operational activities in the organization. MIS considers three primary resources i.e. people, technology and information and its purpose is to meet the general information need of all the managers in the organization. MIS ensures that an appropriate data is collected from the various sources, processed and send further to all the needy destinations. MIS provides information which is useful to manage organizations and institutions efficiently and effectively. MIS is commonly used to refer to the group of information management methods to support human decision making like decision support systems, expert systems and executive information systems. MIS provides accurate and timely information necessary to facilitate the decision-making process and enable the organizations planning, control and operational functions to be carried out effectively.

KEYWORDS

information system, MIS, MSS, DSS, ICT, decision making.

1. INTRODUCTION

Today due to increased organizational size, expanded operational scope, competitive influence and overall environmental vagaries, information needs of modern organizations have become quite enormous and challenging. Every organization needs to pay great attention to how information is gathered, stored, disseminated and utilized. Information system is organized combination of people, hardware, software, communication networks, data resources, policies and procedures that stores, retrieves, transforms and disseminates information in an organization. The purpose of information system is to improve the effectiveness and efficiency of the organization. MIS is a type of information system combine hardware, software and network products in an integrated solution and provides data to the managers in a format suitable for analysis, monitoring, decision-making and reporting. MIS is one of the major computer based information systems where Information and Communication Technology plays an important role in MIS. The system collects data, stores it in a database and makes it available to users over a secure network. It supports planning, control and operation functions of an organization by furnishing uniform information in the proper time frame to assist the decision makers. This system contains information about people, documents, technology, places and things within the organization and institution or the environment surrounding around it. This paper presents objectives of MIS, role of information and communication technology in MIS, MIS and decision making process and importance of MIS in the organization. [1][4]

2. OBJECTIVES OF MANAGEMENT INFORMATION SYSTEM

MIS is a system to convert data from internal and external sources into information and communicate that information in an appropriate form, to managers at all levels in all functions to enable them to make timely and effective decisions for planning, directing and controlling the activities for which they are responsible (Bee and Bee, 1999). MIS is concerned with the process of collecting, processing, storing and transmitting relevant information to support the management operations in any organizations. To take effective and rational decisions, timely and reliable information is essential and is procured through logical method of information collecting, processing and disseminating to decision makers. In today's world of ever increasing complexities of carrying out business, in order to survive and grow, every organization must have a properly planned, analyzed, designed and maintained MIS. MIS assist decision makers by providing the required information at various stages of decision making and help the organization to achieve its goals and objectives. Well-constructed and well-organized MIS can provide management with the knowledge it needs to reduce operating costs and increase profits. MIS can help management to increase efficiency by quickly providing critical information about procedures and operations. [2] [13]

In view of this, the followings objectives of MIS are set.

- To provide an overview of the information requirements of organizations.
- To analyze the role of management and its dependency on information.
- To discuss the role of information in the decision making process.
- To identify the need for information in day-to-day operations of an organization.
- To support the organization's strategic goals and decisions.
- To produce scheduled and demand reports.
- To serve as a strategic weapon to gain competitive advantages.

3. ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN MIS

In the last decade, there are significant advances in computer hardware and software, human-computer interfaces, communications and scientific tools and techniques. Information networks play a major role in controlling and directing the flow of huge amount of information among organizations. The power of technology has transformed the role of information in a business organization. M.I.S. is basically concerned with processing data into information. Data collection involves the use of Information Technology (IT) comprising computers and telecommunications networks (EMail, Voice Mail, Internet, telephone, etc.). ICT plays an important role for storage, retrieval and transmission of message and become an essential component in the process of decision making in the organization to assist managers at all levels. MIS with ICT aimed at assisting managers and operating personnel, to produce timely, accurate information, well presented and up-to-date information required for efficient and effective process. Different systems are designed with the support of ICT like expert system, decision support system, executive decision support, information systems, enterprise resource planning etc. MIS combines raw data with information in expert system, ask the query and obtain result in the required format [4][5].

4. MIS AND DECISION MAKING PROCESS

In today's competitive world, managers have to assimilate large amount of data, convert that data into information, form conclusions and make decisions leading to the achievement of business objectives. MIS provide accurate and timely information necessary to facilitate the decision-making process and enable the organizations planning, control and operational functions to be carried out effectively. MIS is defined as a computer based Information System based on the database of the organization evolved for the purpose of providing information to the people in the organization (Bresfelean, 2009). MIS processes data into

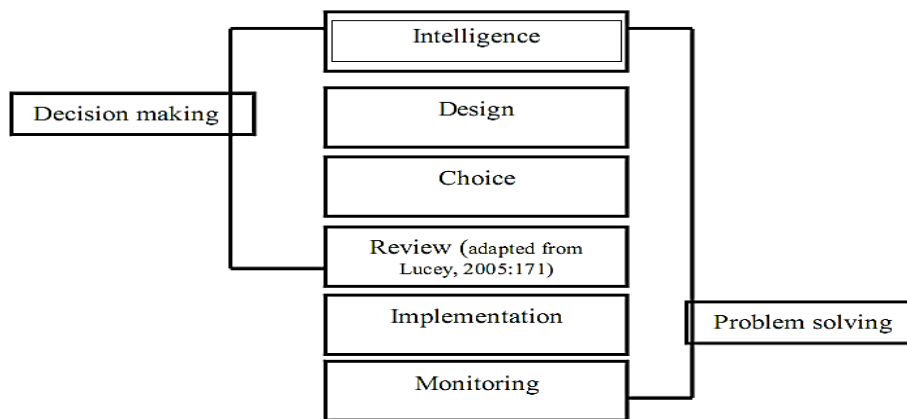
information, which is then communicated to various departments for appropriate decision making. MIS is basically concerned with the process of collecting, processing, storing and transmitting relevant information to support decision making in any organizations. It is also relevant for nonprogrammer decisions as it provides support by supplying information for the search, analysis, evaluation, choice and implementation process of decision making [8]10].

MIS is useful in the area of decision making as it can monitor by itself disturbances in a system, determine a course of action and take action to get the system in control. MIS is a system to convert data from internal and external sources into information and to communicate that information in an appropriate form to managers at all levels, in all functions to enable them make timely and effective decisions for planning, directing and controlling the activities for which they are responsible. The information in MIS describes the firm or one of its major systems in terms of what has happened in the past, what is happening now and what is likely to happen in the future. The information is made available in form of periodic reports, special reports and output of mathematical simulations. The effectiveness of any organization is dependent on the quality of decisions that informs its operation. The success of decision-making is highly dependent on available information and partly on the functions that are the components of the process. For effective decisions to evolve in any organization, therefore receiving information from and supplying information to people within the system are a necessity [13].

Simon (1984), a leading authority in management decision-making considers that decision making comprises four principal phases:

- Intelligence- Searching the environment for conditions calling for decision making.
- Design- Inventing, developing and analyzing possible courses of actions. This involves processes to understand the problem, to generate solutions and testing of solutions for feasibility.
- Choice- Selecting an alternative or course of action from those variables.
- Review- Assessing past choices.

FIG. 1: PROCESS OF DECISION MAKING

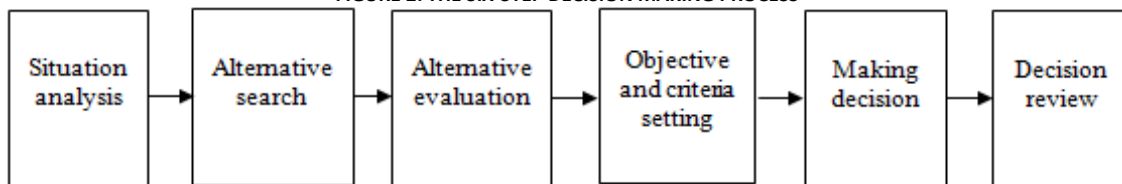


Simon has further classified decisions into two broad categories according to the extent that the process of decision-making can be pre-planned:

- **Programmed Decision:** These decisions are made using standard rules, procedures or quantitative methods. To make a programmed decision, the decision maker uses a performance program, a standard sequence of behavior that organizational members follow routinely whenever they encounter a particular type of problem or opportunity. For example, inventory control decisions, machine loading decisions, scheduling, etc. are routine and repetitive decisions and the organization typically develops specific ways and guidelines to handle them.
- **Non-programmed Decisions:** These type of decisions deal with unusual or exceptional situations. They are decisions made in response to novel problems and opportunities. This type of decision is associated with high degree of uncertainty, cannot be delegated to low levels, may involve things, but always involves people. The decisions like merger, acquisitions, launching of new product, personnel appointments etc. are non-programmed decisions.

MIS include interaction with other decision support systems, information inquiries, cross referencing of external information and potential data mining techniques. A typical MIS consist of six-step decision making process.

FIGURE 2: THE SIX-STEP DECISION MAKING PROCESS



Source: Simon, 1997

i) **INFORMATION ACCESS:** Managers need rapid access to information to make decisions about strategic, financial, marketing and operational issues. MIS simplifies and speeds up information retrieval by storing data in a central location that is accessible via a network and provides decisions that are quicker and more accurate.

ii) **DATA COLLECTION:** When decision is to be taken in groups and individuals, MIS assist for collaborative decisions. MIS enable all members in a project team to access the same essential data, even if they are working in different locations.

iii) **INTERPRETATION:** MIS help decision-makers to understand the implications of their decisions. The systems display raw data in a form of reports that enables decision-makers to quickly identify patterns and trends. Decision-makers can also use MIS to understand the potential effect of change.

iv) **PRESENTATION:** The reporting tools within MIS enable decision-makers to tailor reports to the information needs of other parties. If a decision requires approval by a senior executive, the decision-maker can create a brief executive summary for review. If managers want to share the detailed findings of a report with colleagues, they can create full reports and provide different levels of supplementary data.

At operational levels, decisions are structured with known decision rules and objectives. Sometimes the decisions at such level are the semi-structured type. Table shows decision types taken at different levels of management.

TABLE NO. 1: TYPES OF DECISION AT DIFFERENT LEVELS OF MANAGEMENT

Management Level	Decision Type	Information System Support
Strategic Management	Unstructured	Executive information system
Tactical/Middle Management	Semi-structured	Expert systems, decision support systems
Operational/Lower Management	Structured	Transaction processing, automatic decision-making or accounting models

Source: Renolds, 2003, pp 65

5. IMPORTANCE OF MIS IN THE ORGANIZATION

From the above, it is clear that MIS plays a vital role in the management, administration and operation of an organization. It simplifies and speeds up information retrieval by storing data in a central location that is accessible via a network. The information in MIS describes in terms of what has happened in the past, what is happening now and what is likely to happen in the future. The information is made available in the form of periodic reports, special reports and output of mathematical simulations. All managers use the information output as they make decisions to solve the firm's problems [4].

1. MIS satisfies the diverse needs through variety of systems such as query system, analysis system, modeling system and decision support system.
2. MIS helps in strategic planning, management control, operational control and transaction processing. The MIS helps to the clerical personal in the transaction processing and answers the queries on the data pertaining to the transaction, the status of a particular record and reference on a variety of documents.
3. MIS helps the junior management personnel by providing the operational data for planning, scheduling and control and helps them further in decision-making.
4. MIS helps the middle management in short term planning, target setting and controlling the business functions.
5. MIS helps the top level management in goal setting, strategic planning and evolving the business plans and their implementation.
6. MIS plays the role of information generation, communication, problem identification and helps in the process of decision-making.
7. MIS revolutionized decision-making process through automated systems, through such systems, managers no longer rely on 24-hour service from workers, instead, machines are to be programmed to do things, such as routine decisions, in place of humans.

6. CONCLUSION

MIS is a critical component of the institution's overall risk management strategy and supports management's ability to perform reviews. MIS should be used to recognize, monitor, measure, limit and manage risks. In the age of liberalization and globalization, where information is doubling up every two or three years, a manager has to process a large voluminous data and has to take quick decision. Today organizations cannot grow without properly planned, designed, implemented and maintained MIS. MIS provides accurate and timely information necessary to facilitate the decision-making process and enable the organizations planning, control and operational functions to be carried out effectively. The use of ICT enables organization to have better operate in a global competitive environment and make effective decision making and improve the quality of decision making that is crucial factor for organization. Information resources have become of high demand in today's organizations and MIS is the only option for the satisfaction of such demands. To facilitate better flow of information, adequate MIS is the need of the hour.

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GAP OF LEADERSHIP SKILLS AMONGST MALE AND FEMALE STUDENTS

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ABSTRACT

The classic debate about leadership revolves around the question: "are leaders born or are they made?" (Avolio, 2005). Previously it was believed that leaders are born but now the current concern is 'developing leadership'. Management courses believe that leadership is something that can be taught. Leadership is considered as a process rather than skill. These kinds of programmes tend to consist of a variety of practices that aim to facilitate leadership on a number of levels. It includes public speaking ability, management techniques, ability to process complex ideas, training, knowledge development, and capacity building. On the basis of random convenient sampling, the survey was conducted. A sample of 160 respondents was considered and study was conducted amongst the students in Sangli and Kolhapur. The sample was administered in person. A self-structured questionnaire was used to collect the data. The results clearly indicate that there is significant difference between male and female students for leadership skills.

KEYWORDS

leadership skills, management courses, process, training.

1. INTRODUCTION

Leadership remains a complex issue that generates plenty of interest and discussions. Leadership can be defined as a process in which a person tries to influence a set of individuals in the pursuit of achieving individual, group and organizational objectives. Leadership is not confined to people who occupy top positions in organizations. Leadership is needed at all level of organization and can be displayed even by a person who has not been assigned a formal position in the organization. The ability to lead others is a rare quality. It is very difficult at senior position as it requires the interplay of lots of different skills. Leadership is one of the most important challenges facing corporate India and the problem becomes acute when we talk about the leadership quality in females. It seems that the training provided in business schools fall short of preparing individuals to face challenges later in the corporate world. This study is an attempt to find the gap of leadership skills amongst male students and female students.

2. LEADERSHIP AND LEADERSHIP SKILLS

A leader works with others to make a difference. He exhibits positive energy, creates something of value that did not exist before and encourages change. Leaders have the quality of initiative integrity, intelligence and perceptive. A skill is an acquired talent that a person develops related to a specific task. Different leadership skills for which a leader can be trained are as follows:

ADMINISTRATIVE SKILLS: A good leader has the skill to organize the work more effectively and make high quality decisions. Administrative skills provide the ability to handle the difficult situations effectively.

COMMUNICATION SKILLS: One of the most important of leader is communication skills. When one communicates effectively; he/she can reach to everyone with ease. It also strengthens the capability of influencing and persuading others. Overall it develops good rapport with everyone.

INTERPERSONAL SKILLS: It refers about the knowledge of human behavior. It includes empathy, charm, diplomacy and persuasiveness. The leader with high interpersonal skills is readily accepted by others.

CONCEPTUAL SKILLS: It includes inductive and deductive reasoning, logical thinking and analytical ability.

3. OBJECTIVE OF THE STUDY

The objective of the study was to compare the leadership skills of male and female students.

4. HYPOTHESES

H01: There is no significant difference in administrative skills between male and female students.

H02: There is no significant difference in communication skills between male and female students.

H03: There is no significant difference in interpersonal skills between male and female students.

H04: There is no significant difference in conceptual skills between male and female students.

5. RESEARCH METHODOLOGY

A survey was conducted in Sangli and Kolhapur. The institutes which have post graduate courses in management programmes in these two regions constitute universe of the study. 6 institutes have been taken as per convenience by the researcher. Out of total 6 institutes a sample of 160 students was selected (80 were male and rest 80 were female students). A self-structured questionnaire was developed to check the leadership skills learnt and also to compare the leadership skills amongst male and female students. Administrative, communication, interpersonal and conceptual skills were checked through the questionnaire given to the respondents.

6 ANALYSIS AND INTERPRETATIONS**TABLE 1: MEAN AND SD OF MALE AND FEMALE STUDENTS**

Gender	N	Mean	SD	t value
Male	90	58.58	19.85	6.14
Female	80	46.15	20.42	

TABLE 2: MEAN AND SD OF MALE AND FEMALE STUDENTS FOR ADMINISTRATIVE SKILLS

Leadership Skills	Male		Female		t value
	Mean	SD	Mean	SD	
Administrative Skills	15.10	5.08	11.90	5.15	6.28

TABLE 3: MEAN AND SD OF MALE AND FEMALE STUDENTS FOR COMMUNICATION SKILLS

Leadership Skills	Male		Female		t value
	Mean	SD	Mean	SD	
Communication Skills	15.07	5.10	11.65	5.14	6.67

TABLE 4: MEAN AND SD OF MALE AND FEMALE STUDENTS FOR INTERPERSONAL SKILLS

Leadership Skills	Male		Female		t value
	Mean	SD	Mean	SD	
Interpersonal Skills	14.40	5.28	11.45	5.45	5.45

TABLE 5: MEAN AND SD OF MALE AND FEMALE STUDENTS FOR CONCEPTUAL SKILLS

Leadership Skills	Male		Female		t value
	Mean	SD	Mean	SD	
Conceptual Skills	14.28	5.86	11.20	5.85	5.28

Table 1 shows male have high mean value for leadership skills. Table 2,3,4,5 shows that the calculated 't' value is higher than the table value. There is significant difference between the male and female students on the basis of leadership skills. So our null hypotheses (H01, H02, H03, H04) are rejected and alternate hypotheses that there is significant difference between the male and female students for different leadership skills are accepted.

7. CONCLUSION

The above results revealed that there is gap between leadership skills between male and female students. Better grooming facility and exposure will provide a platform to excel in leadership skills. This will enable women to realize their full potentials. They will have greater ability to plan their career, life and greater control over circumstances.

8. LIMITATIONS OF THE STUDY

The sample elected for the study suffers from many constraints. Sample was selected at micro level. The selection of respondents was based on their willingness to participate and their convenience consequently resulted into constraints. Present study chooses only four factors for leadership skills; however, future researchers can consider the other dimensions. They can opt for more appropriate sampling techniques.

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CASE STUDY ON MINING BIG DATA

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ABSTRACT

Big Data is a broad term for datasets used to describe the exponential growth and availability of data, both structured and unstructured., we cannot handle them with our existing methodologies or data mining tools. Big Data is the capability of extracting valuable information from these large datasets or streams of data, that due to its volume, variability, and velocity, it was not possible before to do it.

KEYWORDS

tools, 5Vs, application.

I. INTRODUCTION

In Recent years there are lot of tools & technologies available to collect data from various devices in different formats, from independent or connected applications. This data overflow has capability to process, analyze, store and understand these datasets. Consider the Internet data. The web pages indexed by Google were around one million in 1998, but quickly reached 1 billion in 2000 and have already exceeded 1 trillion in 2008. As per Google in 2013 it reached 30 trillion unique individual pages. It increased 30 times in five years. To store all that data, it need over three million 32GB USB thumb drives. This rapid expansion is accelerated by the dramatic increase in acceptance of social networking applications, such as WhatsApp, LinkedIn, Google plus, Face book, Twitter, Instagram, etc., that allows individuals to create a public profile, to create a list of users with whom to share connections, and view and cross the connections within the system. In addition, with smart phones a device that combines a cell phone with a hand-held computer, typically offering Internet access, data storage, email capability, etc. In day to day life lot of bill payments (recharge, credit card, bus booking etc.,) are doing through smart phones. People and devices (from home, shopping mall to cars, to buses, railway stations and airports) are all loosely connected. Trillions of data and valuable information must be discovered from the data to improve value of life and build our world a better place.

II. BIG DATA

Big data is a popular search query. Big data is data that exceeds the processing capacity of conventional database systems. The data is too big, moves too fast, or doesn't fit the strictures of your database architectures. Input data to big data systems could be chatter from social networks, web server logs, sensor technology and networks, satellite imagery, broadcast audio streams, banking transactions, MP3s of rock music, the content of web pages, scans of government documents, GPS trails, telemetry from automobiles, financial market data etc., Google now processes over 40,000 search queries every second on average which translates to over 3.5 billion searches per day. Number of Twitter search engine queries every day - 2.1 billion. Hours of video watched per month on you tube is 6 billion. We need new algorithms, and new tools to deal with all of this data.

To characterize different type of big data the five Vs of volume, velocity variety, veracity and variability are commonly used.

Volume- It is a scale of data. Big data implies enormous volumes of data. Now that data is generated by machines, networks and human interaction on systems like social media the volume of data to be analysed is very big. For example, 1) It is estimated that 2.5 trillion of gigabytes of data are created every day. 2) World population is 7 billion in that 6 billion of people using cell phones

Velocity – Velocity is analysis of streaming data. Data is being generated fast and need to be processed fast. It deals with speed at which data flows from sources like business processes, machines, networks and human interaction like social media sites, mobile devices, etc. The flow of data is massive and continuous. For example 1) Modern cars have close to 100 sensors that monitor item such as fuel level and tire pressure. 2) New york stock exchange captures 1TB of trade information during each trading session.

Variety – Variety is a different types of data both structured and unstructured. It is used to store data from sources like spreadsheets and databases. Now data comes in the form of emails, photos, videos, monitoring devices, PDFs, audio, etc. This variety of unstructured data creates problems for storage, mining and analysing data. For example, 1) Every month 30 billion pieces of content are shared in Facebook. 2) Every month 4 billion hours of videos are watched in you tube.

Veracity- It refers to uncertainty of data. Accuracy of analysis depends on the source data. For example, the company is losing due to poor data management

Variability- There are changes in the structure of the data and the process of being able to handle and manage the data effectively.

The application of Big data are as per following:

Internet of things: It involves IoT-connected devices managed by hardware, sensor, and information security. "These devices are sitting in their customers' environment, and they phone home with information about the use, health, or security of the device".

A 360 degree view of the customer: Online dealers want to find out what customers are doing on their sites – which pages they visit, where they remain, how long they stay, and when they leave.

Operation analysis: Analyze a variety of data to improved business results. By using big data for operations analysis, organizations can gain real-time visibility into operations, customer experience, transactions and behaviour.

Information Security: Vendor is looking for an efficient way to store petabytes machine data. In the past, companies would store this information in relational databases. "These traditional systems weren't scaling, both from a performance and cost "so big data is a better option for storing machine data.

III. BIG DATA ANALYSIS AND TOOLS

Hadoop: It is an open source framework and distributed processing of very large data sets on computer clusters. Hadoop consists of a storage part (Hadoop Distributed File System (HDFS)) and a processing part (Map Reduce). The Apache distributed data processing software is "Hadoop" and "big data" are used. Map Reduce is a programming model and software framework for writing applications that rapidly process vast amounts of data in parallel on large clusters of compute nodes. It's used by Hadoop, as well as many other data processing applications.

STORM: It's highly scalable, robust, fault-tolerant and works with nearly all programming languages. It is owned by twitter.

MangoDB: An open-source document database, mongoDB is model for developers to control over the final results and processes for handling Big Data. It is a NoSQL database with document oriented, full index support, it has a flexibility to index any attribute and functionality. Rich, document-based queries and GridFS for storing files of any size without the risk of compromising your stack, mongoDB is a scaleable, flexible, and powerful solution for Big Data.

HBase: HBase is the non-relational data store for Hadoop. Features include linear and modular scalability, strictly consistent reads and writes, automatic failover support

CouchDB: CouchDB stores data in JSON documents can access via the Web or query using JavaScript. It offers distributed scaling with fault-tolerant storage.

OrientDB: This NoSQL database can store and can load graphs. It combines the flexibility of document databases with the power of graph databases, while supporting features such as ACID transactions, fast indexes, native and SQL queries, and JSON import and export.

Guavus: Guavus drives decision making with powerful analytics to combined with advanced data science and the ability to handle data in real time to derive actionable insights at the precise moment of opportunity.

IV. OPERATIONAL VS ANALYTICAL

Two classes of Technology in big data are system that provide the real time interactive workload where data is captured and stored is operational big data and system that complex analysis of data is analytical big data.

OPERATIONAL DATA: For operational Big Data workloads, NoSQL Big Data systems such as document databases have emerged to address a broad set of applications, and other architectures, such as key-value stores, column family stores, and graph databases are optimized for more specific applications. NoSQL technologies, which were developed to address the shortcomings of relational databases in the modern computing environment, are faster and scale much more quickly and inexpensively than relational databases.

ANALYTICAL DATA: Analytical Big Data workloads, on the other hand, tend to be addressed by MPP database systems and MapReduce. These technologies are also a reaction to the limitations of traditional relational databases and their lack of ability to scale beyond the resources of a single server. Furthermore, MapReduce provides a new method of analyzing data that is complementary to the capabilities provided by SQL.

As applications gain traction and their users generate increasing volumes of data, there are a number of retrospective analytical workloads that provide real value to the business. Where these workloads involve algorithms that are more sophisticated than simple aggregation, MapReduce has emerged as the first choice for Big Data analytics. Some NoSQL systems provide native MapReduce functionality that allows for analytics to be performed on operational data in place. Alternately, data can be copied from NoSQL systems into analytical systems such as Hadoop for MapReduce.

OPERATIONAL DATA

A company's operations are supported by applications that automate key business processes. These include areas such as sales, service, order management, manufacturing, purchasing, billing, accounts receivable and accounts payable. These applications require significant amounts of data to function correctly. This includes data about the objects that are involved in transactions, as well as the transaction data itself. For example, when a customer buys a product, the transaction is managed by a sales application. The objects of the transaction are the Customer and the Product. The transactional data is the time, place, price, discount, payment methods, etc. used at the point of sale. The transactional data is stored in On-Line Transaction Processing (OLTP) tables that are designed to support high volume low latency access and update.

ANALYTICAL DATA

Analytical data is used to support a company's decision making. Customer buying patterns are analyzed to identify churn, profitability, and marketing segmentation. Suppliers are categorized, based on performance characteristics over time, for better supply chain decisions. Product behavior is scrutinized over long periods to identify failure patterns. This data is stored in large Data Warehouses and possibly smaller data marts with table structures designed to support heavy aggregation, ad hoc queries, and data mining. Typically the data is stored in large fact tables surrounded by key dimensions such as customer, product, supplier, account, and location.

V. CONCLUSION

The study concluded that Big Data is a broad term for datasets used to describe the exponential growth and availability of data, both structured and unstructured., we cannot handle them with our existing methodologies or data mining tools. Big Data is the capability of extracting valuable information from these large datasets or streams of data, that due to its volume, variability, and velocity, it was not possible before to do it.

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SECURE DATA TRANSMISSION IN MOBILE AD-HOC NETWORK USING RSDSV PROTOCOL**A. P. PANDE****ASST. PROFESSOR****DEPARTMENT OF INFORMATION TECHNOLOGY****P.V.P.I.T****SANGLI****A. U. PATIL****ASST. PROFESSOR****PAD. VASANTRAODADA PATIL INSTITUTE OF TECHNOLOGY****BUDHGAON****ABSTRACT**

In mobile ad hoc network (MANET) is an autonomous system of mobile nodes. The nodes are free to move arbitrarily. Due to lack of a centralized secure infrastructure, the communication is prone to security attacks and the nodes can be easily compromised. Security has become one of the major issues for data communication over wired and wireless networks so various security-enhanced measures have been proposed to improve the security of data transmission over public networks. The objective of this work is to improve routing security we represent a proactive mechanism as Randomized routing that explores the existence of multiple routes and forces packets to take alternate paths randomly from its neighbors that is a Randomize delivery path for secure data transmission. We maintain neighboring nodes of each node by sending hello packets. Then we find out delivery path from neighboring nodes by random operation excluding previous hop which is maintained as history node. Protocol RSDSV is implemented to randomize delivery paths and compared the proactive routing protocols DSDV and RSDSV for different number of nodes. The performance of these protocols is measured under a particular scenario on the basis of three metrics as Packet delivery ratio, e2e delay and jitter. This work is implemented in Network Simulator version 2.35.

KEYWORDS

mobile nodes, packets, routing, security.

1. INTRODUCTION

Wireless cellular systems have been in use since 1980s. Wireless systems operate with the aid of a centralized supporting structure such as an access point. These access points assist the wireless users to keep connected with the wireless system, when they roam from one place to the other. The presence of a fixed supporting structure limits the adaptability of wireless systems. In other words, the technology cannot work effectively in places where there is no fixed infrastructure. Future generation wireless systems will require easy and quick deployment of wireless networks. This quick network deployment is not possible with the existing structure of current wireless systems.

Wireless networking is an emerging technology that allows users to access information and services electronically, regardless of their geographic position. Wireless networks can be classified in two types: Centralized approach Or Infrastructure Networks and Decentralized approach or Infrastructure less (ad-hoc) Networks[1]. Infrastructure network consists of a network with fixed and wired gateways. A mobile host communicates with a bridge in the network (called base station) within its communication radius. The mobile unit can move geographically while it is communicating. When it goes out of range of one base station, it connects with new base station and starts communicating through it. This is called handoff. In this approach the base stations are fixed.

In contrast to infrastructure based wireless network, in ad-hoc networks all nodes are mobile and can be connected dynamically in an arbitrary manner. A MANET is a collection of wireless mobile nodes forming a temporary network without using any existing infrastructure or any administrative support. The wireless ad-hoc networks are self-creating, self-organizing and self-administrating. The nodes in an ad-hoc network can be a laptop, cell phone, PDA or any other device capable of communicating with those nodes located within its transmission range. The nodes can function as routers, which discover and maintain routes to other nodes. The ad-hoc network may be used in emergency search-and-rescue operations, battlefield operations and data acquisition in inhospitable terrain.

Nodes in mobile ad-hoc network are free to move and organize themselves in an arbitrary fashion. Each user is free to roam about while communication with others. The path between each pair of the users may have multiple links and the radio between them can be heterogeneous. This allows an association of various links to be a part of the same network. In ad-hoc networks, dynamic routing protocol must be needed to keep the record of high degree of node mobility, which often changes the network topology dynamically and unpredictably.

The security of communication in ad hoc wireless networks is important, especially in military applications. The absence of any central coordination mechanism and shared wireless medium makes MANETs more vulnerable to digital/cyber-attacks than wired networks. These attacks are generally classified into two types: passive and active attacks. Passive attacks do not influence the functionality of a connection. An adversary aims to interfere in a network and read the transmitted information without changing it. If it is also possible for the adversary to interpret the captured data, the requirement of confidentiality is violated. It's difficult to recognize passive attacks because under such attacks the network operates normally.

In general, encryption.[2] is used to combat such attacks. Active attacks aim to change or destroy the data of a transmission or attempt to influence the normal functioning of the network. Active attacks when performed from foreign networks are referred to as external attacks. If nodes from within the adhoc network are involved, the attacks are referred to as internal attacks

2. LITERATURE REVIEW

C. Villamizar [3] proposed the delivery of secret information across insecure networks. They proposed an end-to-end data delivery scheme called secure protocol for Reliable data delivery (SPREAD). The basic idea of SPREAD is to improve the confidentiality by using multipath routing.

D. Clark et al [4] proposed a simple algorithm called Adaptive Multi-Path routing (AMP) algorithm for dynamic traffic engineering within autonomous systems. In contrast to related multipath routing proposals, AMP does not employ a global perspective of the network in each node. Here available information is restricted to a local scope, through which signaling overhead and memory consumption in routers are reduced.

S. Kent, et al. [5] explored a security enhanced dynamic routing algorithm which randomizes the paths in which the data packets are sent. This algorithm is efficient and compatible with mostly used routing protocols like Routing Information Protocol (RIP) and Destination-sequenced Distance Vector (DSDV) protocol for wired and wireless networks respectively. Both the above stated protocols need to exchange extra control messages. But control messages are avoided in security enhanced dynamic routing. The main objective in it is to minimize the path similarity i.e. the path taken by the consecutive packets must not be the same. Virtual Private Networks [5], or VPNs, have been used as a way to securely interconnect a (typically small) number of sites. While private networks use dedicated lines, VPNs try to implement private networks atop a publicly-accessible communication infrastructure like the Internet. VPNs typically employ some combination of encryption, authentication, and access control techniques to allow participating sites to communicate securely.

The emergence of IPsec [6] as a IETF standardized protocol has prompted VPN solutions to use IPsec as the underlying network-layer protocol. Secure BGP (S-BGP) [7] makes use of public key and authorization infrastructure, as well as IPsec to verify the authenticity and authorization of control traffic generated by the Border Gateway Protocol (BGP).

Onion routing [7] is another approach to security that focuses on hiding the identities of communicators. It uses several layers of encryption, where each layer is used to encrypt the transmission between routers on each end of a link. Because of the many layers of encryption, routers are unable to decrypt the data or even the source and destination addresses. All that a router can decipher is the next-hop information. While onion routing is very effective for anonymity, it is not very efficient: each connection must be built and torn down, routers must encode and decode packets, and memory-intensive source routing is used. More recently, motivated by constant distributed denial-of-service attacks (DDoS) to the Internet, several research efforts have focused on addressing routing-level security. Center track [8] uses an IP overlay network composed of Center track routers to log packets. Using the resulting logs, it is possible to reconstruct the path traversed by attacker's packets.

IP trace back [9] tries to accomplish the same goal of tracking DDoS attacks by tracing packets back to their source. The IP trackback mechanism uses probabilistic. Packet marking at routers which allows a victim to identify the path(s) attack traffic traversed without support from service providers/administrators.

Another related effort is the Resilient Overlay Networks (RON) project [11] whose goal is to improve the performance and robustness of network-layer routing. RON nodes monitor current routing paths and decide whether to choose other routes (by selecting alternate application-layer paths through other RON nodes) to meet application-specific performance requirements.

Existing work on security-enhanced data transmission includes the designs of cryptography algorithms and system infrastructures and security-enhanced routing methods. Their common objectives are often to defeat various threats over the Internet, including eavesdropping, spoofing, session hijacking, etc. Among many well-known designs for cryptography based systems, the IP Security (IPSec) and the Secure Socket Layer are popularly supported and implemented in many systems and platforms. Although IPSec and SSL do greatly improve the security level for data transmission, but they introduce substantial overheads which is unavoidable. Especially on gateway/host performance and effective network bandwidth. For example, the data transmission overhead is 5 cycles/byte over an Intel Pentium II with the Linux IP stack alone, and the overhead increases to 58cycles/byte when Advanced Encryption Standard (AES) is adopted for encryption/decryption. Different from the past work on the designs of cryptography algorithms and system infrastructures, we implemented Randomize delivery paths algorithm for data transmission

3. RDSDV IMPLEMENTATION

The objective of implemented work is to a Randomize delivery path for secure data transmission. The delivery of a packet with the destination at a node in order to minimize the probability that packets are eavesdropped over a specific link, a randomization process for packet deliveries. In this process, the previous next-hop for the source node *s* is identified in the first step of the process. Then, the process randomly picks up a neighboring node as the next hop for the current packet transmission. The exclusion for the next hop selection avoids transmitting two consecutive packets in the same link, and the randomized pickup prevents attackers from easily predicting routing paths for the coming transmitted packets. The existing system relies on distance information exchanged among neighboring nodes for the seeking of routing paths. In distance-vector-based implementations, those based on rip, each node *n_i* maintains a routing table in which each entry is associated with a unique destination node (*t*), an estimated minimal cost to send a packet to *t*, and the next node cost to send a packet to *t* (next hop). we modify routing table entry by adding set of node candidates for the next hop and as a set of entries records the history for packet deliveries through the node *n_i* to the destination node *t*.

4. RANDOMIZED NEXT HOP SELECTION ALGORITHM

- 1: Let *hs* be the used nexthop for the previous packet delivery for the source node *s*.
- 2: prepare neighbor list of node *s* by sending hello packets.
- 3: if neighbor list is > 1 then
- 4: Randomly choose a node *x* from neighbor list
- If *x* equal to *hs* then repeat from step 3 three times
- else
- send the packet *pkt* to the node *x*.
- 5: set *hs* as node *x*, and update the routing table of node *n*.
- 7: Send the packet *pkt* to *hs*.
- 9: else
- 10: Randomly choose a node *y* from neighbor list and send the packet *pkt* to the node *y*.
- 11: set *hs* as *y*, and update the routing table of *N_i*.
- 12: end if

5. EXPERIMENTAL RESULT

SIMULATION PARAMETERS

Following table shows network simulation parameters which are configured in tcl script as network interface, queue type and simulation area and others.

TABLE 1: NETWORK SIMULATION PARAMETER

Parameters	Values
Network interface/channel type	Wireless
Radio-propagation model	TwoRayGround
Network interface type	Phy/WirelessPhy
packet size	512bytes
Interface queue type	Queue/DropTail/PriQueue
Max packet in IFQ	50
Number of mobile Nodes	50
Simulation area size	1000*1000
Simulation duration	150 second
Transmission range of each node	250 m
Mobility model	Random
Routing protocols	RDSDV ,DSDV

The performance of the two protocols under different scenario are Compared on the different performance metrics as PDR, average end to end delay and Jitter.

TABLE 2: NETWORK PERFORMANCE METRICS

Sr.no	Performance Metric	Description
1	PDR (packet Delivery Ratio)	$PDR = \frac{\sum \text{Number of packet receive}}{\sum \text{Number of packet send}}$
2	Average E2E Delay (End to End delay)	$\text{End to End Delay} = \frac{\sum (\text{arrive time} - \text{send time})}{\sum \text{Number of nodes}}$
3	Jitter	$\text{AVERAGE JITTER} = \frac{\sum [((\text{recvtime}(j) - \text{sendtime}(j)) - (\text{recvtime}(i) - \text{sendtime}(i))) / (j - i)]}{\text{number of nodes}}$

We find out experimental results on above performance metric in following scenario as for Random position and random node movement. We consider different topology size with 30 to 110 nodes. Results of performance metric are compared in using Microsoft Excel tool.

SCENARIO 1

Under this scenario, we consider network size as 1000 X 1000 m

1. Jitter variation for network size 1000 x 1000

TABLE 3: JITTER VARIATION FOR NETWORK SIZE 1000 X 1000

Number of Nodes	Jitter of DSDV Protocol	Jitter of Randomized DSDV
30	0.001883	0.002108
50	0.002121	0.004522
70	0.002130	0.003985
90	0.001875	0.005734
110	0.002143	0.003625

FIGURE 1: JITTER VALUES VARIATION FOR NETWORK SIZE 1000 X 1000 M

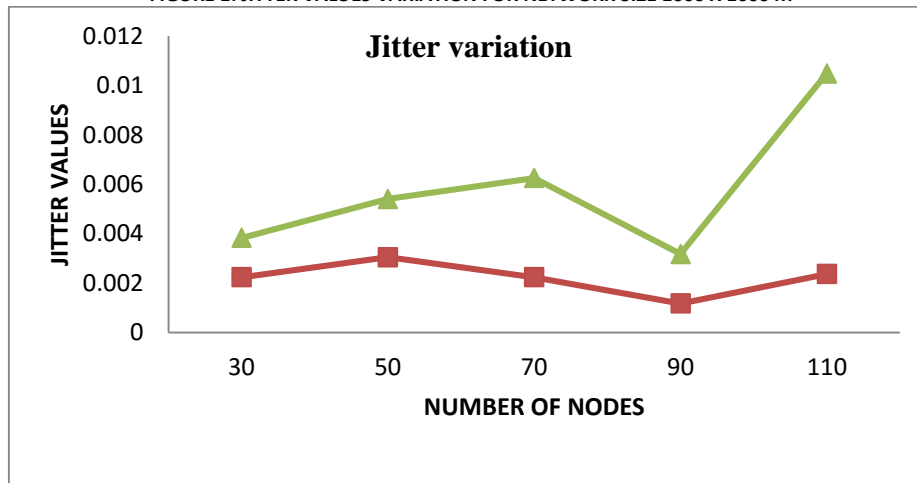


Table 3 shows the jitter variation for network size 1000X1000 m for nodes 30 to 110. Figure 1 shows the graph based on table 3. These results show the jitter values of RSDV protocol are more than the values of DSDV. Hence the path variation more than existing DSDV protocol.

1) **PACKET DELIVERY RATIO VARIATION**

TABLE 4: PDR VARIATION FOR NETWORK SIZE 1000 X 1000

Number of Nodes	PDR of DSDV Protocol	PDR of Randomized DSDV
30	99.79	99.84
50	99.38	99.65
70	99.32	99.70
90	99.51	99.91
110	99.35	99.85

FIGURE 2: PDR VARIATION FOR NETWORK SIZE 1000 X 1000 M

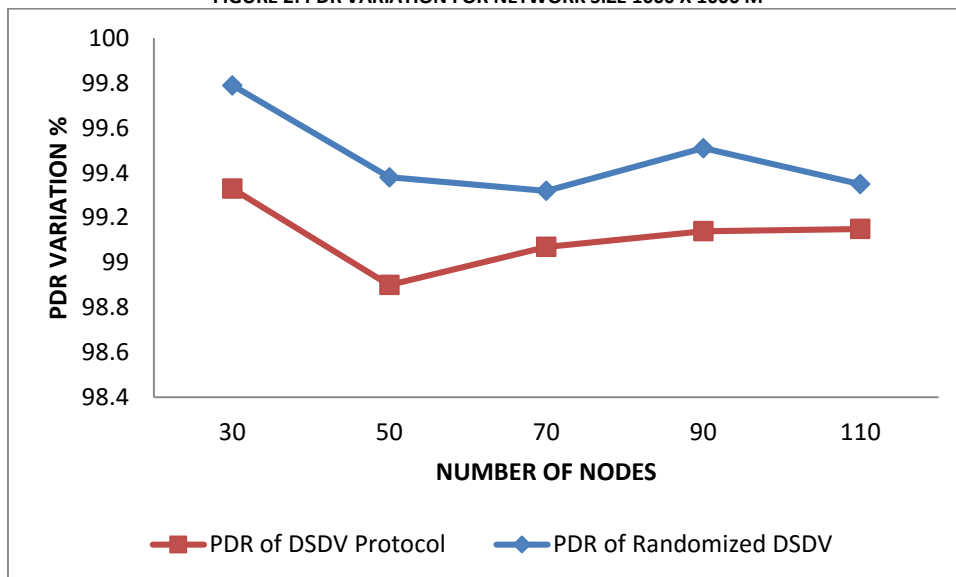


Table 4 shows the PDR variation for network size 1000 X 1000 m for nodes 30 to 110. Figure 2 shows the graph based on table 4. These results show the PDR values of RSDSV protocol are more than the values of DSDV. Hence the PDR variation more than existing DSDV protocol.

2. AVERAGE END TO END DELAY VARIATION

TABLE 5: AVERAGE END TO END DELAY VARIATION FOR NETWORK SIZE 1000 X 1000

Number of Nodes	AVERAGE DELAY OF DSDV Protocol	AVERAGE DELAY of Randomized DSDV
30	140.14	112.81
50	123.88	126.11
70	152.92	150.33
90	132.98	116.54
110	143.35	118.68

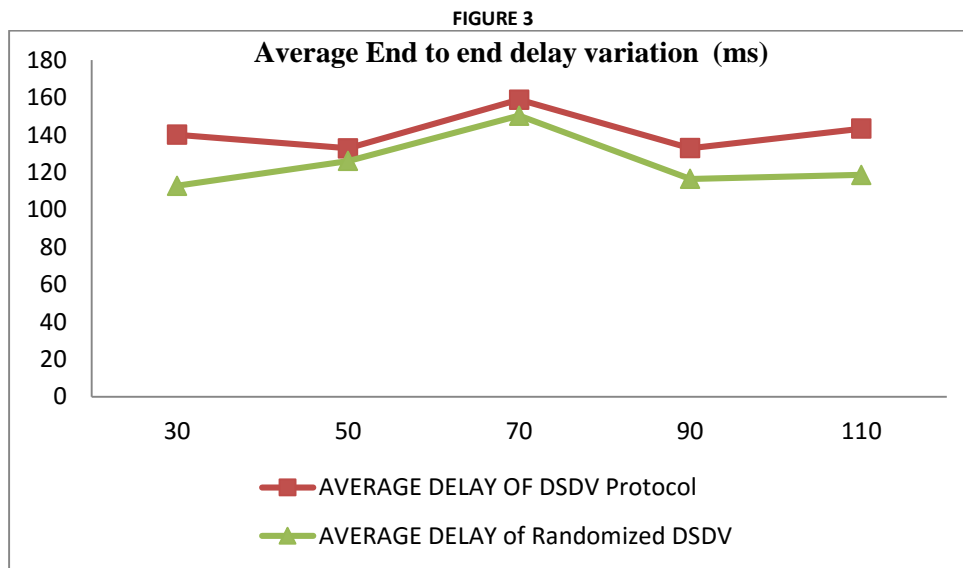


Table 5 Shows the Average end to end delay variation for network size 1000 X 1000 m for nodes 30 to 110. Figure 3 shows the graph based on table 5. These results show the average end to end delay values of RSDSV protocol are less than the values of DSDV. Hence the average end to end delay variation of RSDSV protocol is less than existing DSDV protocol.

6. CONCLUSION

To protect information and resources from attacks and misbehavior. We implemented randomized delivery path protocol. In order to minimize the probability that packets are eavesdropped over a specific link, a randomize process for packet deliveries, randomly picks up a neighboring node as the next hop for the current packet transmission. The exclusion for the next hop selection avoids transmitting two consecutive packets on the same link and the randomized pickup prevents attackers from easily predicting routing paths for the coming transmitted packets.

Experimental results are drawn on different scenarios with different numbers of nodes and network size and nodes mobility speed shows that jitter value is greater and increases as number of nodes increases hence prove that each packet transmitted at different path to destination. As jitter values are more means more path variations for packet delivery to destination which combat security attacks. The PDR and End to End Delay metrics of RSDSV protocol is closer to the metrics for DSDV protocol under same topology. Hence we conclude that security attacks can be avoided by this process without reducing performance.

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ENHANCEMENT OF TEMPORAL DATA CLUSTERING WITH CLIPPED GAUSSIAN DISTRIBUTION

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ABSTRACT

Temporal data clustering provides underpinning techniques for discovering the intrinsic structure and condensing information over temporal data. There have been presented a lot of temporal data clustering framework ensemble of multiple partitions produced by initial clustering analysis on different temporal data representations. Here, this paper introducing an approach of clipping the time series that reduces memory requirements and significantly speeds up clustering without decreasing clustering accuracy. This means that if the series are long enough clustering with clipped data is significantly high in accuracy than clustering with unclipped data. Clipping makes clustering more robust to outliers. Show that the clusters formed are significantly better with clipped data when there is at least a small probability of the data containing outliers. Using clipped data have rewards are that algorithms developed for discrete or categorical data can be employed and that clustering on clipped data can serve as a diagnostic method for outlier and model misspecification detection. With the help of Gaussian distribution function will be getting a smooth series of clipped data which are high in accuracy. As a result, the proposed approach provides an effective enabling technique for the joint use of different representations, which cuts the loss of information in a single representation and exploits various information sources underlying temporal data. In addition, the approach tends to capture the intrinsic structure of a data set that is the number of clusters.

KEYWORDS

temporal data, weighted clustering ensemble, clipping, gaussian distribution.

I. INTRODUCTION

Data mining, the extraction of hidden predictive information from large databases, is a dominant fresh technology with grand potential to help companies focus on the most important information in their data warehouses. Data mining tools predict upcoming trends and behaviors. It allows businesses to make proactive and knowledge-driven decisions. Data mining tools can response business questions which usually were too time strong to resolve [1].

Temporal data clustering is to provide an effective way to discover the intrinsic structure and condense information over temporal data by exploring dynamic regularities underlying data in an unsupervised learning. In the proposed system, the clipping technique for the clustering in the time series is used [2]. This paper demonstrates that the simple process of *clipping* time series reduces memory requirements and can speed up fundamental operations on time series. This paper proposes temporal data clustering model.

Clipped Gaussian distribution approach consists of initial clustering analysis on different representations to produce multiple partitions and clustering ensemble construction to produce a final partition by combining those partitions achieved in initial clustering analysis. Initial clustering analysis can be done by any existing clustering algorithms that propose a novel weighted clustering ensemble algorithm. Then, implement the clipped Gaussian distribution concept on the clustering time series. This would reduce the cost of time. Finally the proposed system is get illustrated and compared with the conventional approaches. From the simulation results on a variety of temporal data clustering tasks and concludes that this approach is outperforming with high accuracy, lesser cost of time due to the proposed technique in this system.

II. TEMPORAL DATA CLUSTERING

Underpinning techniques provided by temporal data clustering for discovering the intrinsic structure and condensing information over temporal data. Temporal data stored in a temporal database [2] is different from the data stored in non-temporal database in that a time period close to the data expresses when it was suitable or stored in the database. Temporal data are ubiquitous in the real world and there are many application areas ranging from multimedia.

An effective way to discover the intrinsic structure and condense information over temporal data by exploring dynamic regularities underlying temporal data in an unsupervised learning way by the performance of Temporal clustering analysis. Its ultimate objective is to partition an unlabeled temporal data set into clusters so that sequences grouped in the same cluster is coherent. There are two core problems in clustering analysis, first problem is model selection and the second is grouping.

Clustering analysis is an extremely difficult unsupervised learning task [4]. Due to the high dimensionality and complex temporal correlation the temporal data clustering poses a real challenge in temporal data mining. Temporal data clustering algorithms as three categories: (i)temporal-proximity-based, (ii) model-based and (iii) representation-based clustering algorithms.

Temporal-proximity-based and model-based clustering algorithms directly work on temporal data [7]. Representation-based algorithm converts temporal data clustering into static data clustering. The basic idea behind clustering ensemble is combining multiple partitions on the same data set to produce a consensus partition expected to be superior to that of given input partitions. In this paper, approach to temporal data clustering with different representations to overcome the fundamental weakness of the representation-based temporal data clustering analysis.

The contributions of this paper is to develop a practical temporal data clustering model by different representations via clustering ensemble learning to overcome the fundamental weakness the representation-based temporal data clustering analysis. Proposing a novel weighted clustering ensemble algorithm, which not simply provides an enabling technique sustain this model but also can be used to merge any input partition. Formal analysis has also been done. And the third finally is the demonstrate the effectiveness and the efficiency of the model for a variety of temporal data clustering tasks as well as its easy-to-use nature as all internal parameters are fixed in the simulations. The motivation to propose the temporal data clustering model is working on different representations via clustering ensemble learning.

II.1 TEMPORAL DATA REPRESENTATIONS

In this, describe the motivation to propose temporal data clustering model. Then, present a temporal data clustering model working on different representations. For illustration, perform the principal component analysis (PCA) on four typical representations of a synthetic time-series data set.

The data set is produced by the stochastic function $F(t) = A \sin(2\pi\alpha t + B) + \epsilon(t)$, where A , B , and α are free parameters and $\epsilon(t)$ is the added noise drawn from the normal distribution $N(0, 1)$. The uses of different parameter set (A, B, α) leads to time series of four classes and 100 time series in each class [3]. Temporal data stored in a temporal database is different from the data stored in non-temporal database in that a time period attached to the data expresses when it was valid or stored in the database.

III. WEIGHTED CLUSTERING ENSEMBLE

A cluster ensemble technique is characterized by two components: the mechanism to generate diverse partitions and the consensus function to combine the input partitions into a final clustering or by applying a single algorithm with different parameter settings, possibly in combination with data or feature sampling. The k -means algorithm with random initializations or with random number of clusters has been widely used in the literature to generate diverse clustering.

III.1 WEIGHTED CONSENSUS FUNCTION

The basic proposal of weighted consensus function is the use of the pair wise similarity between objects in a partition for evident accumulation, where a pair wise similarity matrix is derived from weighted partitions and weights are determined by measuring the clustering quality with different clustering validation criteria. Then, a dendrogram is constructed based on all similarity matrices to generate candidate consensus partitions.

$$w_m^\pi = \frac{\pi(P_m)}{\sum_{m=1}^M \pi(P_m)},$$

Select three criteria of complementary nature for generating weights from different perspectives as Modified Huber’s r index (MHR), Dunn’s Validity Index (DVI) and Normalized Mutual Information (NMI). A high MHR value for a partition indicates that the partition has a compact and well-separated clustering structure. However, this decisive factor strongly nepotism a partition containing more clusters.

IV. CLIPPING ON TEMPORAL DATA

The simple process of clipping time series reduces memory requirements. The information discarded by clipping does not significantly decrease the accuracy of clustering algorithms. Clipped time series require much less memory to store and can be manipulated faster [5]. If the series are long enough clustering with clipped data is not significantly less accurate than clustering with unclipped data.

Advantages of using clipped data are that algorithms developed for discrete or categorical data can be employed and that clustering on clipped data can serve as a diagnostic method for outlier and model misspecification detection. Clipping could be considered a specific type of SAX (Symbolic Aggregate approxImation) transformation with two classes and no dimension reduction. The properties of clustering with clipped series are firstly, binary data can be more compactly represented and efficiently manipulated and secondly, it is possible to assess their theoretical behavior.

SAX allows a time series of arbitrary length n to be reduced to a string of arbitrary length w , ($w < n$, typically $w \ll n$). The alphabet size is also an arbitrary integer a , where $a > 2$. Below table summarizes the major notation used in this and subsequent sections.

TABLE 1: SUMMARIZATION OF THE NOTATION

C	A time series $C = c_1, \dots, c_n$
\bar{C}	A Piecewise Aggregate Approximation of a time series $\bar{C} = \bar{c}_1, \dots, \bar{c}_w$
\hat{C}	A symbol representation of a time series $C = \hat{c}_1, \dots, \hat{c}_w$
w	The number of PAA segments representing time series C
a	Alphabet size (e.g., for the alphabet = {a,b,c}, $a = 3$)

The discrimination procedure is unique in that it uses an intermediate representation between the raw time series and the symbolic strings. First transform the data into the Piecewise Aggregate Approximation (PAA) representation and then symbolize the PAA representation into a discrete string. There are two important advantages to doing this is dimensionality reduction and lower bounding.

IV.1 CLIPPING ON CLUSTERING TIME SERIES

This paper proposed approach for the temporal clustering problem. Here, implementing a clipping technique for the data clustering. Clipping or *hard limiting*, a time series is the process of transforming a real valued time series Y into a binary series C where 1 represents above the population mean and 0 below, i.e. if μ is the population mean of series Y then

$$C(t) = \begin{cases} 1 & \text{if } Y(t) > \mu \\ 0 & \text{otherwise} \end{cases}$$

Clipped time series require much less memory to store and can be manipulated sooner, yet preserve much of the fundamental structure that characterizes the real valued series. This means that if the series are long enough clustering with clipped data is not significantly less accurate than clustering with unclipped data. Clipping makes clustering more strong to outliers. This shows that the clusters formed are significantly better with clipped data when there is at least a small probability of the data containing outliers.

Additional advantages of using clipped data are that algorithms developed for discrete or categorical data can be employed and that clustering on clipped data can serve as a diagnostic method for outlier and model misspecification detection. This approach to demonstrating the benefits of clipping is to firstly specify a class of model from which the data may arise, secondly is to present the weighted clustering ensemble approach to this model and finally to experimentally demonstrate that there is significant evidence of the benefits of clipping over the class of existing approach.

IV.2 CLIPPING ON CLUSTERING TIME SERIES WITH GAUSSIAN DISTRIBUTION

Here the clipping on clustering the time series is done by the help of the Gaussian distribution function which make helps to improve the representation of the cluster effective. Thus after collecting data based on the clipping technique on the different temporal data representations, this present the Gaussian distribution function to represent the data obtained. Thus by using this Gaussian distribution function will be getting a smooth series of clipped data which are high in accuracy. Next step is to implement the existing Weighted Clustering Ensemble to process the data obtained from the previous clipping technique. That is again moving on with the processing of the previous module with this clipped data represented by Gaussian distribution function. The Gaussian is a continuous distribution

μ = mean of distribution (also at the same place as mode and median)

σ^2 = variance of distribution

y is a continuous variable ($-\infty \leq y \leq \infty$)

Probability (P) of y being in the range $[a, b]$ is given by an integral

$$P(a < y < b) = \int_a^b p(y) dy = \frac{1}{\sigma\sqrt{2\pi}} \int_a^b \frac{e^{-\frac{(y-\mu)^2}{2\sigma^2}}}{\sigma\sqrt{2\pi}} dy$$

V. A SIMPLE DIMENSIONALITY REDUCTION TECHNIQUE FOR FAST SIMILARITY SEARCH IN LARGE TIME SERIES DATABASES

Address the problem of similarity search in large time series databases. Introduce a novel-dimensionality reduction technique that supports an indexing algorithm that is more than an order of magnitude faster than the previous best known method. In addition to being much earlier our approach has many other advantages.

It is easy to know and apply, allows more stretchy distance measures as well as weighted Euclidean queries and the index can be built in linear time. Call our approach PCA-indexing (Piecewise Constant Approximation) and experimentally validate it on space telemetry, financial, astronomical, medical and synthetic data.

VI. SOLVING CLUSTER ENSEMBLE PROBLEMS BY BIPARTITE GRAPH PARTITIONING

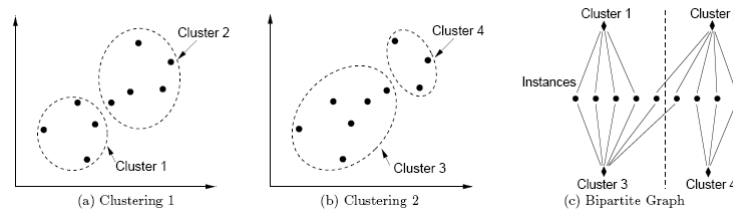
A critical problem in cluster ensemble research is how to combine multiple clustering's to yield a final superior clustering result. Leveraging advanced graph partitioning technique, solve this crisis by sinking it to a graph partitioning problem. Introduce a new reduction method that constructs a bipartite graph from a given cluster ensemble. The resulting graph models similarly instances and clusters of the ensemble concurrently as vertices in the graph. This approach retains all of the information provided by a given ensemble, allowing the resemblance with instances and the similarity among clusters to be considered jointly in forming the final clustering. Further, the resulting graph partitioning crisis can be solved skillfully. Empirically estimate the planned approach against two commonly used graph formulations and show that it is more robust and achieves comparable or better performance in comparison to its competitors.

Clustering for unsupervised data discovery and examination has been investigated for decades in the statistics, data mining, and machine learning communities. A critical problem in designing a cluster ensemble system is how to combine a given ensemble of clustering in order to produce a final solution, referred to as the cluster ensemble problem here. The approach of this problem is by reducing it to a graph partitioning problem. In graph partitioning, the input is a graph that consists of vertices and weighted edges. The goal is to partition the graph into K roughly equal-sized parts with the objective of minimizing the cut.

This paper proposes a new graph formulation that simultaneously models both instances and clusters as vertices in a bipartite graph. Such a graph retains all the information of an ensemble, allowing both the similarity among instances, and the similarity among clusters to be considered collectively to construct the final clusters. Moreover, the resulting graph partitioning problem can be solved efficiently. The experiment compares the proposed graph formulation to the instance-based and cluster-based approaches on five data sets.

The graph partitioning based approaches appear to be very competitive compared with other techniques.

FIGURES: 1 TO 3



An example of the graph formulation

The above figure shows the cluster ensemble with the help of bipartite graph. Figure (a) and (b) depict two different clustering of nine instances and Figure (c) shows the graph constructed by Hybrid Bipartite Graph Formation (HBGF), in which the diamond vertices represent the clusters and the round vertices represent the instances. An edge between an instance vertex and a cluster vertex indicates that the cluster contains the instance. All the edges in the graph have weight one.

Shown in Figure (c) as a dashed line, a separation of the bipartite graph partitions the cluster vertices and the instance vertices concurrently. The separation of the instances can then be output as the ending clustering.

VII. GENERATING CLUSTER ENSEMBLES

Cluster ensembles can be generated in different ways. The resulting ensembles may differ and the same approach for solving the ensemble problems may perform differently accordingly. It is thus important for this experiment to consider different ways to generate cluster ensembles. Experiments use two approaches, random sub sampling and random projection, to generate the ensembles. Note that for both approaches, K-means is used as the base clustering algorithm and the number K is pre-specified for each data set and remains the same for all clustering runs. Also examined a third approach, randomly restarting K-means, and it produced similar results to those of random sub sampling.

VII.1 GRAPH PARTITIONING ALGORITHMS

The goal is to evaluate different graph formulation approaches. To reduce the innocence of any chosen graph partitioning algorithm on this evaluation, use two well-known graph partitioning algorithms that differ with respect to their search for the best partition.

1. Spectral graph partitioning is a well studied area with many successful applications. Then, choose a popular multi-way spectral graph partitioning algorithm proposed
2. Metis (Karypis & Kumar, 1998), a multilevel graph partitioning system, approaches the graph partitioning problem from a different angle. It separates a graph with three basic steps: Coarsen the graph by collapsing vertices and edges, partition the coarsened graph and refine the partitions.

Comparison with other graph partitioning algorithms, Metis is highly efficient and achieves competitive performance.

VIII. COMBINING MULTIPLE CLUSTERING USING EVIDENCE ACCUMULATION

Explore the idea of evidence accumulation (EAC) for combining the results of multiple clustering. First, a clustering ensemble - a set of object partitions, is produced. Given a data set (n objects or patterns in d dimensions), special way of produce data partitions are (1) Applying different clustering algorithms and (2) Applying the same clustering algorithm with different values of parameters or initializations.

The final data partition of the n patterns is obtained by applying a hierarchical agglomerative clustering algorithm on this matrix [7]. Stability of the results is evaluated using bootstrapping techniques. Investigational results of the planned method in several synthetic and real data sets are compared with other combination strategies, and in the company of individual clustering results shaped by well known clustering algorithms.

VIII.1 IMPLEMENTATION AND EVALUATION

Data clustering or unsupervised learning is an important but an extremely difficult problem. The objective of clustering is to partition a set of unlabeled objects into homogeneous groups or clusters. Many application areas use clustering techniques for organizing or discovering structure in data, such as data mining, information retrieval, image segmentation, and machine learning. In real world problems, clusters can show with different shapes, sizes, data sparseness, and degree of separation. Additionally, noise in the data can mask the true underlying structure present in the data.

Both agglomerative and divisive approaches have been proposed; different algorithms are obtained depending on the definitions of similarity measures between patterns and between clusters. The single-link (SL) and the complete-link (CL) hierarchical methods are the best known techniques in this class, emphasizing, respectively, connectedness and compactness of patterns in a cluster. Prototype-based hierarchical methods, which define similarity between clusters based on cluster representatives, such as the centroid, emphasize compactness.

Among the various clustering methods, the K-means algorithm, which minimizes the squared-error criteria, is one of the simplest clustering algorithms. Extensions of the basic K-means algorithm include: use of Mahalanobis distance to identify hyper-ellipsoidal clusters.

While hundreds of clustering algorithms exist, it is difficult to find a single clustering algorithm that can handle all types of cluster shapes and sizes. And even decide which algorithm would be the best one for a particular data set.

VIII.I.I PRODUCING CLUSTERING ENSEMBLES

Clustering ensembles can be generated by following two approaches: (1) choice of data representation, and (2) choice of clustering algorithms or algorithmic parameters. In the first approach, different partitions of the objects under analysis may be produced by (a) Employing different pre-processing and/or feature extraction mechanisms, which ultimately lead to different pattern representations (vectors, strings, graphs, etc.) or different feature spaces?

(b) Exploring sub-spaces of the same data representation, such as using sub-sets of features

(c) Perturbing the data, such as in bootstrapping techniques (like bagging), or sampling approaches, as for instance, a set of prototype samples using to represent huge data sets.

The second approach can generate clustering ensembles by: (i) applying different clustering algorithms, (ii) using the same clustering algorithm with different parameters or initializations and (iii) exploring different dissimilarity measures for evaluating inter-pattern relationships, within a given clustering algorithm. A combination of these two main mechanisms would produce clustering ensembles leads to exploration of distinct views of inter-pattern relationships. From a computational perspective, clustering results produced in an independent way facilitate efficient data analysis by utilizing circulated computing, and reuse the results obtained previously.

VIII.I.II COMBINING EVIDENCE

The Co-Association Matrix In order to cope with partitions with different numbers of clusters, propose a voting mechanism to combine the clustering results leading to a new measure of similarity between patterns.

FIG. 4

DATA CLUSTERING USING EVIDENCE ACCUMULATION (USING SL).

Input: n - number of patterns $n \times p$ nearest neighbor matrix p - nearest neighbor index

N - number of clusterings $\mathbb{P} = \{P^1, \dots, P^N\}$ - clustering ensemble

Output: P^* - Combined data partition.

Initialization: Set the $n \times p$ co-association matrix, $C(\dots)$, to a null matrix.

1. For each data partition $P^p \in \mathbb{P}$ do:

1.1. Update the co-association matrix: for each pattern pair (i, j) in the p th neighbor list, that belongs to the same cluster in P^p , set $C(i, j) = C(i, j) + \frac{1}{N}$.

2. Compute the SL dendrogram of C ; the final partition, P^* , is chosen as the one with the highest lifetime.

The proposed method for combining various clustering partitions of a given data set in order to obtain a partition that is better than individual partitions. These entity partitions could have been obtained either by applying the similar clustering algorithm with different initialization of parameters or by different clustering algorithms applied to the given data. A K-means based evidence accumulation technique was analyzed with light of the proposed optimality criteria. Outcome obtained on both synthetic and real data sets illustrate the ability of the evidence accumulation technique to identify clusters with arbitrary shapes and arbitrary sizes.

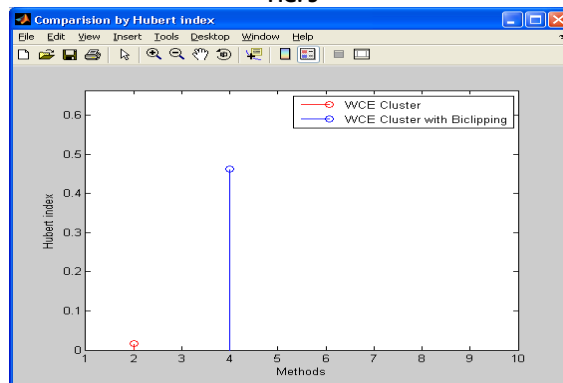
Experimental results were compared with individual runs of well known clustering algorithm, and also with other cluster ensemble combination methods.

The main principle of the temporal data clustering is to provide an effective way to discover the intrinsic structure and condense information over temporal data by exploring dynamic regularities underlying data in an unsupervised learning [6]. Its ultimate objective is to partition an unlabeled temporal data set into clusters so that sequences grouped in the same cluster are coherent. In order to have an effective performance in our proposed system are proposing a clipped Gaussian distribution technique to the clustering time series which could increase the accuracy and reduces the cost of time.

IX. PERFORMANCE MEASURES

Evaluating and comparing proposed approach of temporal data clustering with clipped Gaussian distribution with the previous approach. Here are evaluating with the classification accuracy rate with the missing data and is found that proposed approach performs better than the existing approach.

FIG. 5



The above figure was compared with weighted clustering ensemble and weighted clustering ensemble with clipped gaussian distribution are compared by Dunns Index.

X. CONCLUSION

The conclusion of this imply that a temporal data clustering approach with clipped Gaussian distribution on different representations are further propose a useful measure to understand clustering ensemble algorithms based on a formal clustering ensemble analysis. Simulations show that this approach yields favorite results for a variety of temporal data clustering tasks in terms of clustering quality and model selection.

As a generic framework, this weighted clustering ensemble approach allows other validation criteria to be incorporated directly to generate a new weighting scheme as long as they better reflect the intrinsic structure underlying a data set. Thus, this approach provides a promising yet easy-to-use technique for real world applications.

XI. FUTURE ENHANCEMENT

The clipping with Gaussian on temporal data clustering can be presented for the future work by focusing to more methodological settings in which the benefits of clipping data when clustering time series. With most real world time series clustering problems space and time will be a genuine constraint on the mining process. Clipping time series will allow for more series to be stored in main memory, which in itself will increase the speed of mining. Specific algorithms for binary series can lead to improved time complexity.

When clustering, the information discarded by clipping does not decrease the accuracy if the series are long enough if the data series are long enough then clipping does not significantly decrease clustering accuracy; and if the data contains outliers, the clustering accuracy on clipped data is significantly better. Thus our information when clustering time series is to start with clipped data, then examine any results from more sophisticated transformations in relation to the results obtained after clipping, particularly if the series are long and time and space are important considerations.

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A COMPARATIVE STUDY ON IDENTIFYING USAGE OF MOBILE BANKING SERVICES IN SELECTED PUBLIC AND PRIVATE SECTOR BANKS

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ABSTRACT

Mobile banking is used for using various banking services like- balance checks, account transactions, payments, credit applications etc. via a mobile device such as a mobile phones. The earliest mobile banking services were offered via SMS. Due to competition today every bank is providing modern and innovative services to attract customer. Mobile banking is one of the important and most popular, user friendly and widely used service. Today every bank is providing mobile bank service. To identify the performance of Public and Private sector banks researcher selected and compared some selected public and private sector banks which are providing mobile services from January to August 2015. It is concluded that, private sector banks mobile usage is more than public sector banks.

KEYWORDS

mobile banking, mobile usage, public and private banks, SMS.

1. INTRODUCTION

In 1999 first European banks started to offer mobile banking on this platform to their customers. Wireless Application Protocol (WAP) support enabling the use of the mobile banking services. Provision of banking and financial services are referred by mobile banking; with the help of mobile telecommunication devices. The scope of offered services may include facilities to conduct bank and stock market transactions, to administer accounts and to access customized information. Mobile Banking can be said to consist of three inter-related concepts:

- Mobile Accounting.
- Mobile Brokerage.
- Mobile Financial Information Services.

Most services are transaction-based, in the categories designated accounting and brokerage. The non-transaction-based services of an informational nature are however essential for conducting transactions - for instance, balance inquiries might be needed before committing a money remittance. The accounting and brokerage services are therefore offered invariably in combination with information services. Information services, on the other hand, may be offered as an independent module.

2. MOBILE BANKING SERVICES

Mobile banking can offer services such as the following:

Account Information, Mini-statements and checking of account history, Alerts on account activity, Monitoring of term deposits, Access to loan statements, Access to card statements, Mutual funds/ equity statements, Insurance policy management, Pension plan management, Status on cheque, stop payment on cheque, Ordering cheque books, Balance checking in the account, Recent transactions, Due date of payment (functionality for stop, change and deleting of payments), PIN provision, Change of PIN and reminder over the Internet, Blocking of (lost, stolen) cards.

3. OBJECTIVES OF THE STUDY

1. To study the conceptual framework of Mobile banking.
2. To study the Mobile services used by service users in selected Public and Private sector.

4. RESEARCH METHODOLOGY

For the present study, the empirical research methodology has been adopted.

5. SELECTION OF BANKS

For research purpose, 10 banks out of which 5 are Public sector banks and 5 are Private sector banks has been selected for the study.

TABLE 1: SAMPLE SIZE

Sr. No	Public Sector Banks	Private Sector Banks
1	BANK OF BARODA	AXIS BANK LTD
2	BANK OF INDIA	HDFC BANK LTD.
3	BANK OF MAHARASHTRA	HSBC
4	CANARA BANK	ICICI BANK LTD
5	CORPORATION BANK	KARNATAKA BANK LTD

Source: Bank of India, Lead Bank Scheme, Annual credit Plan Report Sangli District, 2008-09

6. COLLECTION OF DATA

Present paper is based on data collected from annual reports of banks and Reserve Bank of India, internet, books, published articles, E-banking business journals. Also data has been collected from various reputed libraries from SIBER, Kolhapur, V.P. Institute of Management Studies & Research, Sangli, Shivaji University, Kolhapur, National Institute of Bank Management (NIBM), Pune.

7. DATA PRESENTATION FOR MOBILE USAGE BY SERVICE ISERS IN PUBLIC AND PRIVATE SECTOR BANKS FROM JANUARY TO AUGUST 2015

TABLE 2: BANK WISE MOBILE BANKING TRANSACTION FOR THE MONTH OF JAN 2015

SN	BANK NAME	VOLUME (ACTUAL)	VALUE IN (RS. '000)
1.	AXIS BANK LTD	2034428	14406144
2.	BANK OF BARODA	102677	561327
3.	BANK OF INDIA	6	2
4.	BANK OF MAHARASHTRA	75	361
5.	CANARA BANK	239143	8834701
6.	CORPORATION BANK	28377	238888
7.	HDFC BANK LTD.	1491924	49068678
8.	HSBC	5523	227527
9.	ICICI BANK LTD	3610783	22249750
10.	KARNATAKA BANK LTD	23477	72785

Source: RBI Report: BANKWISE VOLUMES IN ECS/NEFT/RTGS/MOBILE TRANSACTIONS

FIG. 1

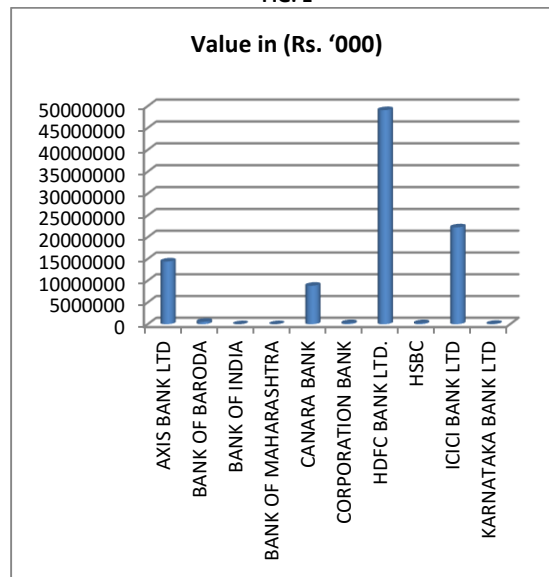


TABLE 3: BANK WISE MOBILE BANKING TRANSACTION FOR THE MONTH OF FEB. 2015

SN	Bank Name	Volume (Actual)	Value in (Rs. '000)
1	AXIS BANK LTD	2105755	15068388
2	BANK OF BARODA	125907	575771
3	BANK OF INDIA	449793	2063878
4	BANK OF MAHARASHTRA	47	252
5	CANARA BANK	223158	13637929
6	CORPORATION BANK	24342	200561
7	HDFC BANK LTD.	1547909	49339786
8	HSBC	5994	230339
9	ICICI BANK LTD	3401248	21722642
10	KARNATAKA BANK LTD	23261	70217

Source: RBI Report: BANKWISE VOLUMES IN ECS/NEFT/RTGS/MOBILE TRANSACTIONS

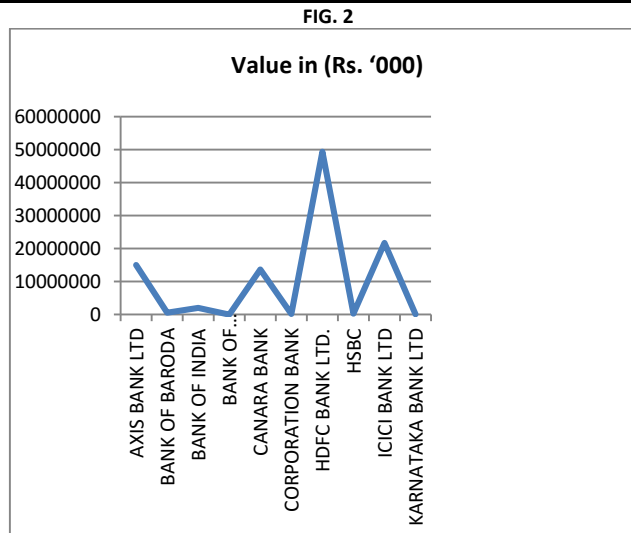


TABLE 4: BANK WISE MOBILE BANKING TRANSACTION FOR THE MONTH OF MAR. 2015

SN	Bank Name	Volume (Actual)	Value in (Rs. '000)
1	AXIS BANK LTD	2646483	19704718
2	BANK OF BARODA	164810	701293
3	BANK OF INDIA	14444	102204
4	BANK OF MAHARASHTRA	59	271
5	CANARA BANK	268888	17152541
6	CORPORATION BANK	34944	300623
7	HDFC BANK LTD.	1720761	60305775
8	HSBC	6628	324624
9	ICICI BANK LTD	3775221	25153160
10	KARNATAKA BANK LTD	27537	88411

Source: RBI Report: BANKWISE VOLUMES IN ECS/NEFT/RTGS/MOBILE TRANSACTIONS

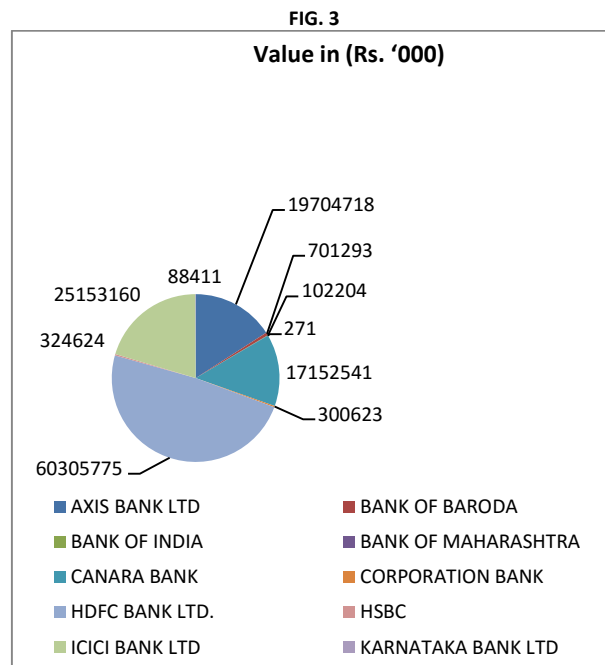


TABLE 5: BANK WISE MOBILE BANKING TRANSACTION FOR THE MONTH OF APR. 2015.

SN	Bank Name	Volume (Actual)	Value in (Rs. '000)
1	AXIS BANK LTD	2671656	18973609
2	BANK OF BARODA	179951	738244
3	BANK OF INDIA	14444	100153
4	BANK OF MAHARASHTRA	17257	227819
5	CANARA BANK	296784	19875930
6	CORPORATION BANK	33216	301974
7	HDFC BANK LTD.	1746757	56865767
8	HSBC	6473	318781
9	ICICI BANK LTD	3857085	53429724
10	KARNATAKA BANK LTD	26696	81256

Source: RBI Report: BANKWISE VOLUMES IN ECS/NEFT/RTGS/MOBILE TRANSACTIONS

FIG. 4

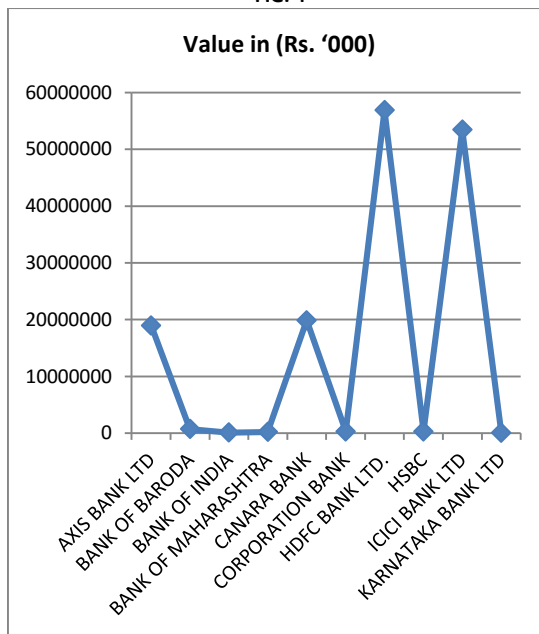


TABLE 6: BANK WISE MOBILE BANKING TRANSACTION FOR THE MONTH OF MAY 2015

SN	Bank Name	Volume (Actual)	Value in (Rs. '000)
1	AXIS BANK LTD	2922049	19814926.01
2	BANK OF BARODA	223656	892550
3	BANK OF INDIA	13971	99853
4	BANK OF MAHARASHTRA	20081	255444.70
5	CANARA BANK	324438	21405131
6	CORPORATION BANK	38065	89346
7	HDFC BANK LTD.	1976968	61471618.67
8	HSBC	7025	327798
9	ICICI BANK LTD	4556247	55247409
10	KARNATAKA BANK LTD	28464	90652.53

Source: RBI Report: BANKWISE VOLUMES IN ECS/NEFT/RTGS/MOBILE TRANSACTIONS

FIG. 5

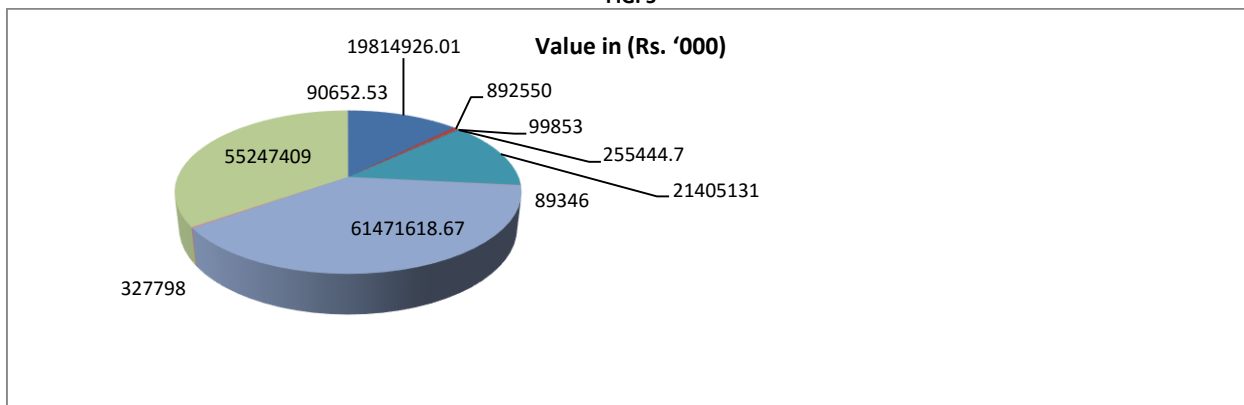


TABLE 7: BANK WISE MOBILE BANKING TRANSACTION FOR THE MONTH OF JUN 2015

SN	Bank Name	Volume (Actual)	Value in (Rs. '000)
1	AXIS BANK LTD	2900563	24171122.2
2	BANK OF BARODA	252935	1006626.0
3	BANK OF INDIA	14632	104556.0
4	BANK OF MAHARASHTRA	21751	287685.9
5	CANARA BANK	355148	2253798.0
6	CORPORATION BANK	38692	93623.0
7	HDFC BANK LTD.	1940074	61219854.1
8	HSBC	6631	302586.0
9	ICICI BANK LTD	4704046	61601831.0
10	KARNATAKA BANK LTD	29324	96505.1

Source: RBI Report: BANKWISE VOLUMES IN ECS/NEFT/RTGS/MOBILE TRANSACTIONS

FIG. 6

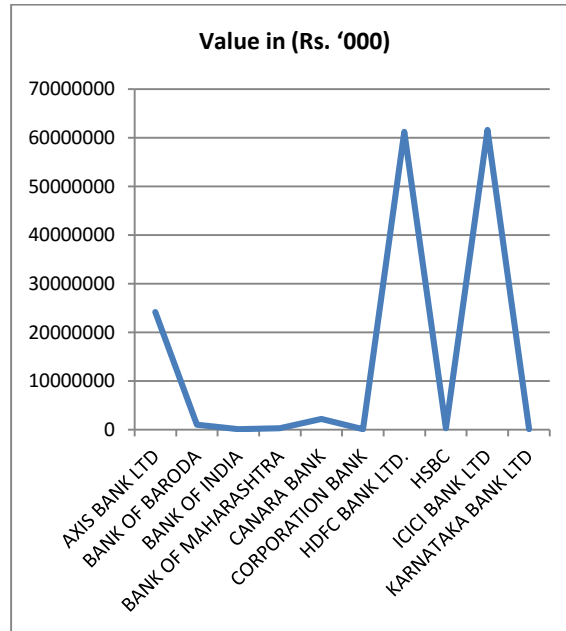


TABLE 8: BANK WISE MOBILE BANKING TRANSACTION FOR THE MONTH OF JUL 2015

SN	Bank Name	Volume (Actual)	Value in (Rs. '000)
1	AXIS BANK LTD	3264967	25899559.2
2	BANK OF BARODA	315108	1248726.0
3	BANK OF INDIA	16102	121335.0
4	BANK OF MAHARASHTRA	27449	376261.9
5	CANARA BANK	406578	2530514.0
6	CORPORATION BANK	41701	117103.0
7	HDFC BANK LTD.	2103487	64612435.4
8	HSBC	7300	339480.6
9	ICICI BANK LTD	5320683	68853685.0
10	KARNATAKA BANK LTD	34682	125776.4

Source: RBI Report: BANKWISE VOLUMES IN ECS/NEFT/RTGS/MOBILE TRANSACTIONS

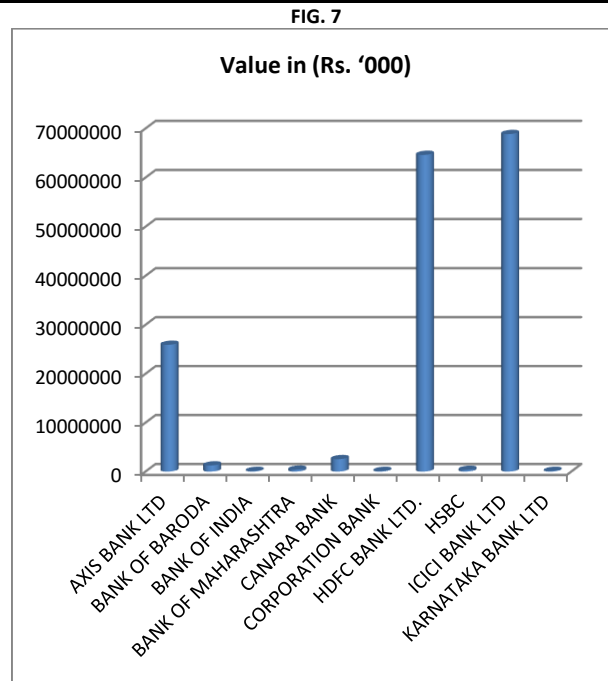
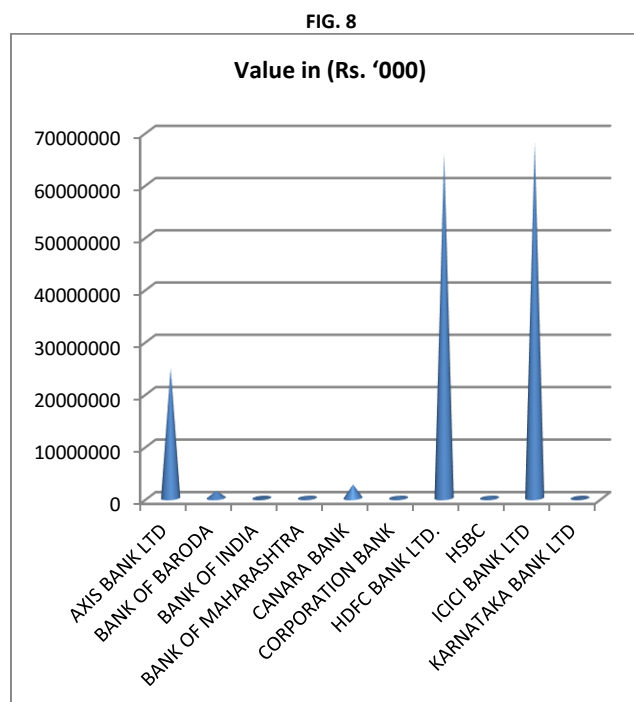


TABLE 9: BANK WISE MOBILE BANKING TRANSACTION FOR THE MONTH OF AUG. 2015

SN	Bank Name	Volume (Actual)	Value in (Rs. '000)
1	AXIS BANK LTD	3423414	24801138.00
2	BANK OF BARODA	353032	1356377.00
3	BANK OF INDIA	15086	117074.00
4	BANK OF MAHARASHTRA	30617	386729.49
5	CANARA BANK	416602	2581111.00
6	CORPORATION BANK	44168	397941.00
7	HDFC BANK LTD.	2215841	65809131.11
8	HSBC	7727	375139.00
9	ICICI BANK LTD	5725200	67941254.00
10	KARNATAKA BANK LTD	36948	130939.79

Source: RBI Report: BANKWISE VOLUMES IN ECS/NEFT/RTGS/MOBILE TRANSACTIONS



8. SUGGESTIONS

From the above data it is observed that HDFC BANK LTD., ICICI BANK LTD. and AXIS Banks having maximum mobile value transaction, therefore it is suggested that, other banks should have to make necessary modification in mobile bank services.

9. FUTURE SCOPE

Above research is based on mobile usage by service users in selected banks, in future study should be made on E-banking services.

10. CONCLUSION

From the above study it is concluded that, Private sector banks provides excellent mobile services as compare to the Public sector banks.

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A REVIEW ON THE ROLE OF DATA MINING IN BANK

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ABSTRACT

Data mining is the process of automatically searching large volumes of data for patterns. It is the term used to describe the process of extracting knowledge from a large amount of data. Data mining is also known as Knowledge-Discovery in Databases (KDD). Data mining techniques plays important role in banks. The huge amount of data generated by bank transactions. This large amount of data processed and analyzed by traditional methods and these methods becomes too complex. Data mining techniques provides technology to transform large amount of data into information for decision making. This paper reviews data mining techniques and its applications in banks. The main purpose of this paper is to study various data mining models and techniques used in banks for decision making.

KEYWORDS

customer relationship management (CRM), data mining algorithms, data mining tools, fraud detection and prevention.

1. INTRODUCTION

The bank contains data related to the customer information, transactions details, loan details etc. To get better financial performance and customer relationship banks started other applications such as net banking which reduces cost and time. Use of internet and automated software's completely changes basic concept of banking, this will result into increase in data. The data generated by bank is very huge amount and too complex to be analyzed by traditional methods. This data need to be converted into information. Without data mining it is difficult to process and realized the large data collected within banks. So, there is need to generate powerful tool for analyze data and extract information from huge complex data.

In the present era, the technology becomes advanced and it facilitates to generate, capture and store data in increased extremely. Today, data mining become important part for many business organizations including banks because there is need of capable technology for detecting unknown and valuable information in banks. Most of banks uses data mining technologies which can be help them to compete in the market. The results generated by the data mining technologies provides benefits to banks like customer segmentation, profitability, customer relationship management, fraud detection and prevention in transactions etc.

2. RELATED WORK

1. Research of the Bank's CRM Based on Data Mining Technology, Yong Wang, Dong Sheng Wu^[1], Researchers work focuses on data mining analysis methods that are classification analysis, association rule analysis, cluster analysis and sequential pattern analysis. According to the quality of bank's customers this paper introduces the CRM and data mining tools combined. By using classification technique the researcher explain classification of bank's customers and build decision tree by applying ID3 algorithm. They inspect that use of data mining technology in banks improves high quality CRM target.
2. Data Mining Techniques and its Applications in Banking Sector -Dr. K. Chitra¹, B. Subashini^[2], researcher inspect, customer holding is most important factor in banking sector. The major problem in banking sector is fraud. Detecting and avoiding fraud is major issue because imposter uses new patterns all the time. In this paper the researcher analyze the data mining techniques- supervised and unsupervised data mining algorithms for fraud detection and prevention. In the supervised data mining algorithm they prefer Decision Tree, Generalized linear models (GLM), minimum description length (MDL), Naive Bays (NB) and Support vector Machine (SVM). For the unsupervised data mining algorithm they suggest Aprior, k-Means, Non-Negative Factorization and One class support Vector Machine. They also focus on data mining applications in banking sector.
3. 'Use of Data Mining in Banking'-Kazi Imran Moin, Dr. QaziBaseer Ahmed^[3], this paper describe the overview of data mining techniques and highlights the applications of data mining. Huge amount of customer's data can be stored in data warehouses that data can be mined and then the data can be analyzed. According to researcher, data mining is very helpful for the banks for getting new customers, fraud detection and credit scoring.
4. A REVIEW ON DATA MINING IN BANKING SECTOR-Vikas Jayasree and Rethnamoney Vijayalakshmi Siva Balan^[4], in this paper researchers highlights the importance and advantages of data mining techniques in banking sectors. This paper provides the information about data mining tools is used in various departments in bank. Department implements data mining technologies in various areas such as customer segmentation and profitability, detection of fake transactions, credit risk that can be changes in the value of credit products, money market business etc. As per the researcher's opinion, marketing departments of financial organizations uses data mining algorithms to analyze customer's interest in the product and another product related with existing one. According to the researcher, in strategic planning clustering is used and web services provided by banks uses pattern mining algorithm.
5. DATA MINING APPROACH TO PREDICT PROSPECTIVE BUSINESS SECTORS FOR LENDING IN RETAIL BANKING USING DECISION TREE Md. Rafiqul Islam¹ and Md. Ahsan Habib²^[5], researchers analyze issues in retail commercial bank. To predict the future of business sectors in retail bank the researcher design a model using decision tree classification technique in data mining and then tested its efficiency with the Weka software. According to the researcher the output of proposed model is almost same as the Weka software.
6. Data mining: Techniques for Enhancing CustomerRelationship Management in Banking and Retail Industries - P Salman Raju, Dr V Rama Bai, G Krishna Chaitanya^[6], mainly discuss data mining techniques and its applications with major areas like customer relationship management, fraud detection and prevention, credit card approval.
7. A Review: Application of Data Mining Tools in CRM for Selected Banks. Dileep B. Desai ,Dr. R.V.Kulkarni^[7],This paper reviews Data Mining tools and applications for Customer Relationship Management in Banks. They highlights data mining algorithms are used to predict bank profitability and payment from customers, detecting fraud transactions, marketing and for customer segmentation.
8. Loan Credibility Prediction System Based on Decision Tree Algorithm- Sivasree M S Rekha Sunny T^[8], researcher proposed effective model for credit risk assessment. In this work decision tree induction data mining algorithm is used to generate the related attributes and also make the decisions in the model i.e. to approve or reject loan request of the customers. In this work the Weka data mining tool is used.
9. A Comprehensive usage of Enhanced K-Medoid Clustering Algorithm in Banking Sector-B. Kalaiselvi^[9], researcher uses clustering technique and K-Medoid algorithm in data mining for loan approval of customers. According to the researcher, bankers can easily sanction loan for customers by using K-Medoid algorithm. Also researcher focuses on limitations of K-Medoid algorithm.
10. Bank Direct Marketing Based on Neural Network -Hany. A. Elsalamony, Alaa. M. Elsayad^[10], Researcher compares two different data mining techniques models Multilayer perceptron neural network(MLPNN) and Ross Quinlan new decision tree model (C5.0) for bank deposit subscription. As per researchers opinion C5.0 has slightly better performance than MLPNN. Performance of these two models measured by using three statistical measures: classification accuracy, sensitivity and specificity.

3. CONCLUSION

Most of the researcher uses integrated data mining techniques like neural network, classification and clustering, decision tree algorithms for getting better performance. Some researchers focus on issues in customer transaction. They suggested data mining techniques for fraud detection and prevention. Many researchers provide work for credit risk assessment which helps bankers to approve or reject loan of customer. According to the researchers, decision tree algorithm and clustering technique is more useful in credit risk assessment. They also focused on data mining techniques and its applications. It is observed from the above review of literature that majority of researchers have used and would like to conduct study on data mining techniques in banks with reference to customer relationship management, portfolio management.

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AN EVALUATION OF WEB SERVICES USED BY CUSTOMERS OF SELECTED BUSINESS SECTORS IN ISLAMPUR CITY

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ABSTRACT

The concept of e-service (short for electronic service) represents one prominent application of utilizing the use of (ICTs) in different areas. Purpose of this study is to identify the impact of e-services on selected businesses in Islampur city. Nowadays e-commerce, e-business and financial services industry have increasingly become a necessary component of business strategy and a strong catalyst for economic development. Increased use of mobile services and use of internet as a new distribution channel for banking transactions and international trading requires more attention. The development and the increasing progress that is being experienced in the information and communication technology have brought about a lot of changes in almost all facets of business. This study is based on primary survey in which researcher collects data from various businesses in Islampur city via structured questionnaire to identify impact of e-services on selected businesses.

KEYWORDS

e-commerce, e-services, ICT, mobile services.

1. INTRODUCTION

There are different e-services available today among this e-banking is one of the important e-service. E-banking is defined as the deployment of banking services and products over electronic and communication networks directly to the customers (Singh and Malhotra, 2004). These electronic and communication networks include Automated Teller Machines (ATMs), direct dial-up connections, private and public networks, the Internet, televisions, mobile devices and telephones. Among these technologies, the increasing penetration of personal computers, relatively easier access to the Internet and particularly the wider diffusion of mobile phones has drawn the attention of most banks to E-banking. Other e-service are-Online sales/Purchase, Social networking, Mail messengers, Application software's, Online marketing, Business Web portals.

In present scenario e-services are more popular, easy to use and available anywhere also cost required for operating is very low. Availability of internet and supportive technology enhances more usage of e-services in business. Researcher will make survey on usage of e-services used by selected businesses in Islampur city using structured questionnaire and identify how these services affecting on businesses, there for the statement is entitled as "To study the impact of usage of E-services on selected businesses with reference to Islampur city."

2. REVIEW OF LITERATURE

Present research is based on survey conducted in Islampur city. Therefore it is Exploratory Research. Exploratory research helps for deciding strategic plan to organizations, deciding policies, issues and implementation innovative ideas in business. Traditional offline service quality were measured by comparing customers' expectations with firms' actual service performance (Sasser, Olsen, and Wyckoff, 1978)[11], items evaluating electronic service quality were changed to adapt to the electronic context (Parasuraman et al., 2005). For example, items in part of tangible should be substituted to items about Website design or appearance on evaluations of electronic service quality (Parasuraman et al., 2005). With the recognition of the difference measuring service quality between online and offline, dimensions in the evaluation of electronic service quality are required to develop rather than simply adapting traditional offline scales (Parasuraman et al., 2005).

3. OBJECTIVES

1. To study the use of e-services in selected businesses in Islampur city.
2. To study impact of e-services on selected businesses.

4. RESEARCH METHODOLOGY

4.1 SAMPLING

In Islampur city various businesses are there like- hotels, retail shops, medical stores, mobile shopee, manufacturing firms, foundries, cloth shops, jewelry shops, super markets, banks, post office, super market, hospitals, showrooms, government offices, educational institutes, cold storages etc. Following table shows the manufacturing and service firms in Islampur city.

SAMPLE SIZE IN ISLAMPUR CITY

Sr. No.	Manufacturing Firms		Service Firms		Total
	Available	Selected (10%)	Available	Selected (10%)	
1	163	16	276	28	44

In Islampur city there are near about 163 manufacturing firms among that 10% i.e. 16 has been selected and among 276 service firms 10% i.e. 28 service firms has been selected for study purpose. These firms were selected using random sampling technique.

For the present study service users from above (i.e. 44) organizations has been selected based on the availability and more usage of e-services.

4.2 DATA COLLECTION AND ANALYSIS PROCEDURES

Data is collected in through structured questionnaire. Collected data will be present in suitable table form, graphical form and interpreted. Statistical techniques like mean, mode, standard deviation, correlatin, chi-square test and or SPSS etc. will be used for testing hypotheses.

4.3 SOURCES OF DATA

PRIMARY SOURCES: Questionnaire, observation, discussions, Interview.

SECONDARY SOURCES: Books, Research articles, Internet, Published and unpublished theses, Magazines, News papers.

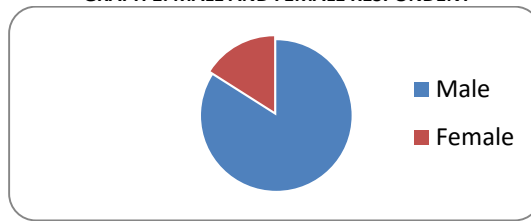
5. DATA ANALYSIS AND INTERPRETATION

5.1 PROPORTION OF MALE RESPONDENTS AND FEMALE RESPONDENTS

TABLE NO. 1: MALE AND FEMALE RESPONDENT

Gender	Respondent	Percentage
Male	84	84
Female	16	16
Total	100	100

GRAPH 1: MALE AND FEMALE RESPONDENT



From the above table (table 1) it is clear that among total website respondents there are 84% male respondents and 16% women respondents which are selected on the basis of frequently usage of the website.

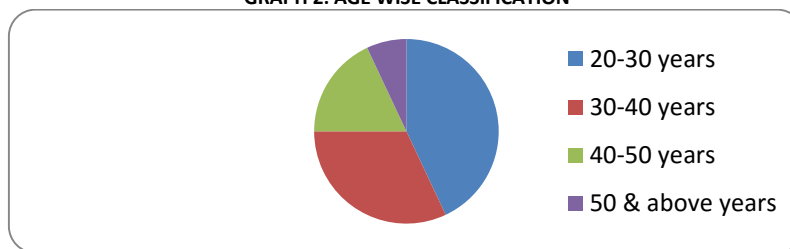
Since the majority of respondents is Male.

5.2 CLASSIFICATION ACCORDING TO AGE GROUP

TABLE NO. 2: AGE WISE CLASSIFICATION

Age	Respondent	Percentage
20-30 years	43	43
30-40 years	32	32
40-50 years	18	18
50 & above years	7	7
Total	100	100

GRAPH 2: AGE WISE CLASSIFICATION



From the above table (table2) it is clear that among total website users, 43% respondents are from 20 to 30 years age group, 32% respondents from 30 to 40 years age group, 18% respondents from 40 to 50 years age group and 7% respondents are from 50 & above.

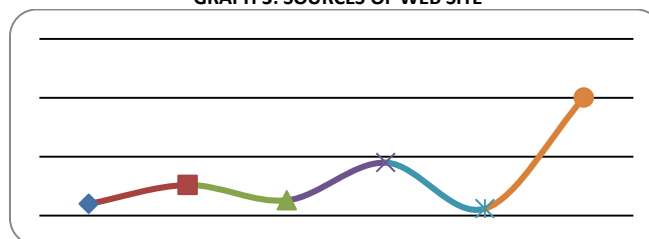
Majority of respondents are from 20-30 age groups.

5.3 PROPORTION OF FINDING THE WEBSITE

TABLE NO. 3: SOURCES OF WEB SITE

Particular	Respondent	Percentage
Search Engine	22	22
Newspaper/Magazine article	35	35
Friend or business associates	18	18
Advertisement	9	9
Don't know/don't remember	7	7
Other	9	9
Total	100	100

GRAPH 3: SOURCES OF WEB SITE



From above graph it is clear that among total customers there are 22% of respondents who find the websites through search engine, 35% of respondents are find website through newspaper/magazine article, 18% of respondents who find website through friend or business associates 9% of respondents are find website through advertisement, 7% of respondents are find website through don't know/don't remember, 9% of respondents who find website through other sources.

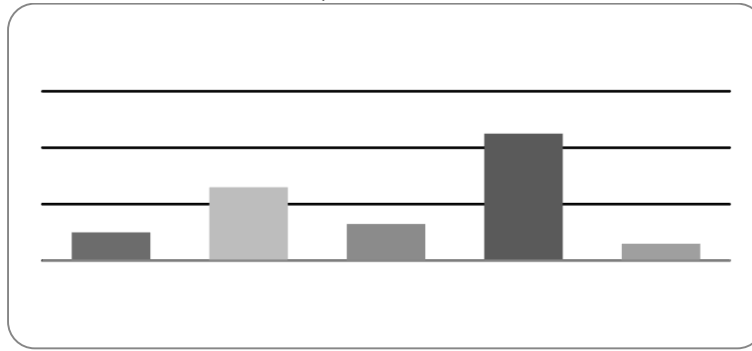
From the above table it is concluded that majority of the respondents (i.e.35%) are known the website from newspaper/magazine article.

5.4 PROPORTION OF VISITING OUR WEB SITE

TABLE NO. 4: FREQUENCY OF VISITING WEB SITE

Particular	Respondent	Percentage
Everyday	10	10
Several times a week	26	26
Once in a week	13	13
Several times a month	45	45
Once in a month	6	6
Total	100	100

GRAPH 4: FREQUENCY OF VISITING WEB SITE



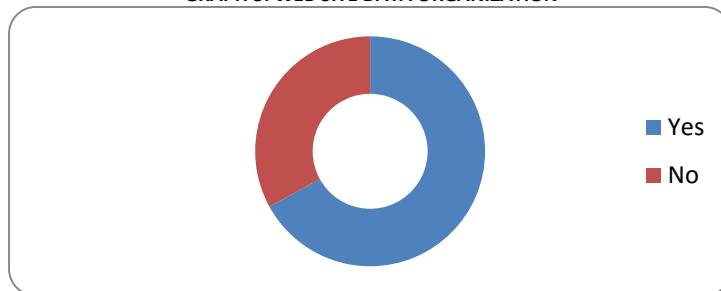
From above graph it is clear that among total respondents there are 10% respondents are visit the website everyday, 26% respondents are visit the website several times in a week, 13% respondents are visit the website once in a week, 45% respondents are visit the website several times in a month, & 6% respondents are visit the website once in a month.

5.5 PROPORTION OF ORGANIZATIONS WEB SITE IS CLEAR & LOGICAL

TABLE NO. 5: WEB SITE DATA ORGANIZATION

Particular	Respondent	Percentage
Yes	67	67
No	33	33
Total	100	100

GRAPH 5: WEB SITE DATA ORGANIZATION



From above graph it is clear that among total respondents there are 67% respondents are says the website is logical & clear, 33% respondents are says the website is not logical & clear.

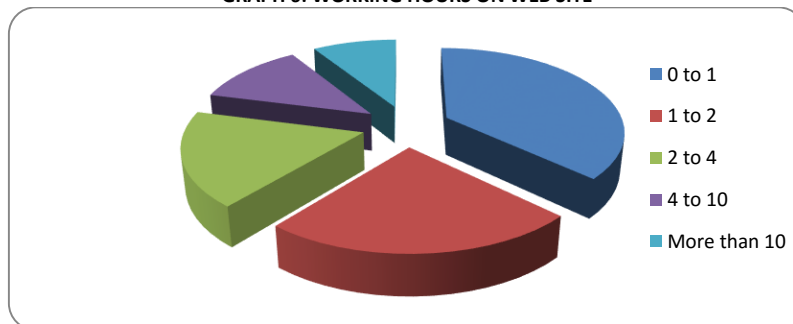
Since 67% of respondents agreed on contents of the organization is clear and logically well presented.

5.6 PROPORTION OF WORKING HOURS ON WEBSITE

TABLE NO. 6: WORKING HOURS ON WEB SITE

Particular	Respondent	Percentage
0 to 1	37	37
1 to 2	24	24
2 to 4	18	18
4 to 10	12	12
More than 10	9	9
Total	100	100

GRAPH 6: WORKING HOURS ON WEB SITE



From above graph it is clear that among total respondents there are 37% respondents are spend their time in working on website 0 to 1 hour in a week, 24% respondents are spend their time in working on website 1 to 2 hour in a week, 18% respondents are spend their time in working on website 2 to 4 hour in a week, 12% respondents are spend their time in working on website 4 to 10 hour in a week, 9% respondents are spend their time in working on website more than 10 hour in a week.

6. CONCLUSION

It is concluded that, this study reflects exactly how many businesses are using e-services and how it is affecting on their businesses. Further suggestions will be given based on observations, data analysis through survey of various businesses which helps businesses to expand and take more advantages of e-services in their business. Many new ideas will be shared with businesses for upgrading their e-services. Businesses definitely gets more benefited using e-services.

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A PERFORMANCE EVALUATION OF SOFTWARE INSTALLED IN RAJARAMBAPU MILK DAIRY, ISLAMPUR

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ABSTRACT

In present scenario software plays a vital role in various organizations, information is becoming more important for every business sector. Therefore today software plays an crucial role in every organization for business decision and growth to achieve better customer satisfaction. This study helps to identify opinion regarding software installed in Rajarambapu Milk Dairy, Islampur by InfoTech Solutions. This study helps to understand the strengths and requirements of software. It also helps to improve the quality of software which then having more demand in the market. To measure the performance of software researcher uses a CUIRIESM parameters. Various factors are responsible for identifying the performance of installed software.

KEYWORDS

business decision making, software, CUIRIESM, usage of software.

1. INTRODUCTION

For the present work researcher used CUIRIES parameters for study purpose. Therefore the software quality can be better measured based on these parameters.

- a) **Correctness:** The software which we are making should meet all the specifications stated by the customer.
- b) **Usability:** The amount of efforts or time required to learn how to use the software so that it makes user-friendly even for IT-illiterate people.
- c) **Integrity:** Integrity of sub-systems in the software an effect of it on working of other applications.
- d) **Reliability:** The software product should not have any defects. Also it should not fail while execution.
- e) **Efficiency:** It relates to the way software uses available resources. The software should make effective use of the storage space and execute command as per desired timing requirements.
- f) **Security:** Security in terms of user authentication, data recovery and backup facility etc. are necessary to check the performance of software. The software shouldn't have ill effects on data / hardware. Proper measures should be taken to keep data secure from external threats.
- g) **Multiplatform Support:** Identifying the performance of the software on the basis of how it supporting for multiple platform for providing services.

2. STATEMENT OF THE STUDY

"A Performance Evaluation of Software installed in Rajarambapu Milk Dairy, Islampur "

3. OBJECTIVES OF THE STUDY

1. To study the characteristics of the application software.
2. To check the performance of the Software installed in Rajarambapu Dudh Dairy, Islampur by the InfoTech Solutions.
3. To provide suggestions to the InfoTech Solutions for providing better services.

4. RESEARCH METHODOLOGY

Researcher collected data by two ways. One is primary data and other is secondary data. There are various sources of collecting primary data and secondary data.

- a. **Primary Data:** The data which is collected at first hand is called primary data. The primary data is collected through various sources like well structured Questionnaire. Data is collected from 14 customers who are continuously using software well structured questionnaire is prepared for collecting opinion of end users regarding software installed.
- b. **Secondary Data:** The data which is already published, available in hard/soft form is called secondary data. The data is available in books, magazines etc. For the study purpose the data is collected from Internet, Books, Research Journals, company reports etc.

5. SCOPE OF THE STUDY

The study is carried for analyzing Software Installed by the InfoTech Solutions in Rajarambapu Dudh Dairy, Islampur. Therefore all users who uses this software in the Rajarambapu Dudh Dairy, Islampur are respondent and are selected for data collection.

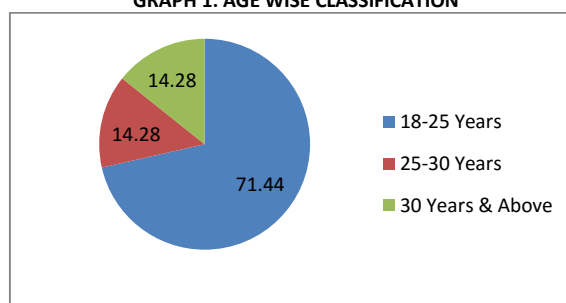
6. DATA ANALYSIS

6.1 AGE WISE CLASSIFICATION OF RESPONDENTS

TABLE 1: AGE WISE CLASSIFICATION

Age Group	18-25 Years	25-30 Years	30 Years & Above
Percentage	71.44	14.28	14.28

GRAPH 1: AGE WISE CLASSIFICATION



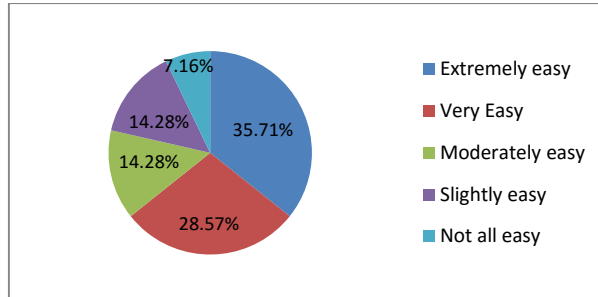
It is observed that, 71.44% respondents are from 18-25 years age group and 14.28% respondents are from 25 to 30 years and 30 and above years of age groups.

6.2 REGARDING SOFTWARE INSTALLATION

TABLE 2: REGARDING SOFTWARE INSTALLATION

Particulars	Percentage (%)
Extremely easy	35.71
Very Easy	28.57
Moderately easy	14.28
Slightly easy	14.28
Not all easy	7.16
Total	100

GRAPH 2: REGARDING SOFTWARE INSTALLATION



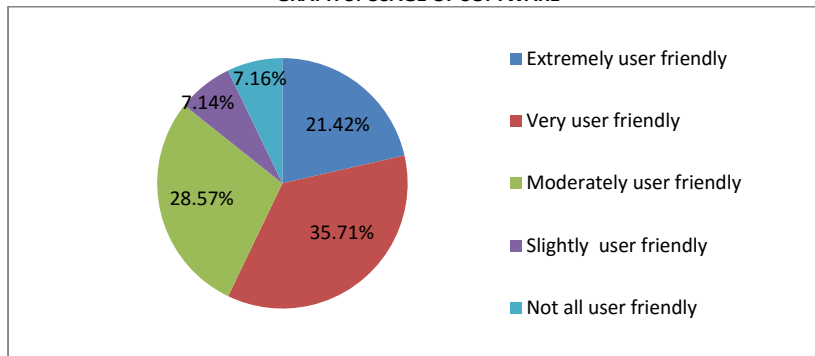
From the above Table 2 it is observed that, 35.71% respondent opined that they find software extremely easy for installation where as 28.57% respondent opined that it is easy for installation, 14.28% respondent has opined that moderately easy as well as slightly easy and 7.16% respondent opined that it is quite difficult for installation of software.

6.3 USAGE OF SOFTWARE

TABLE 3: USAGE OF SOFTWARE

Particulars	Percentage (%)
Extremely user friendly	21.42
Very user friendly	35.71
Moderately user friendly	28.57
Slightly user friendly	7.14
Not all user friendly	7.16
Total	100

GRAPH 3: USAGE OF SOFTWARE



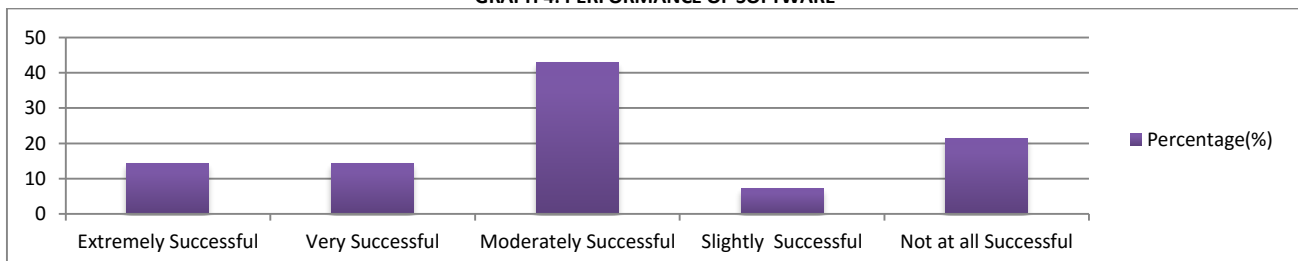
Above table depicts the usage of software. It is observed that, out of total respondent 21.42% is extremely user friendly, 35.71% has found that they find software very user friendly, 28.57% has got moderately user friendly, 7.14% has got slightly user friendly and 7.16% has got not all user friendly.

6.4 OPINION FOR PERFORMANCE OF SOFTWARE

TABLE 4: PERFORMANCE OF SOFTWARE

Particulars	Percentage (%)
Extremely Successful	14.28
Very Successful	14.28
Moderately Successful	42.88
Slightly Successful	7.14
Not at all Successful	21.42
Total	100

GRAPH 4: PERFORMANCE OF SOFTWARE



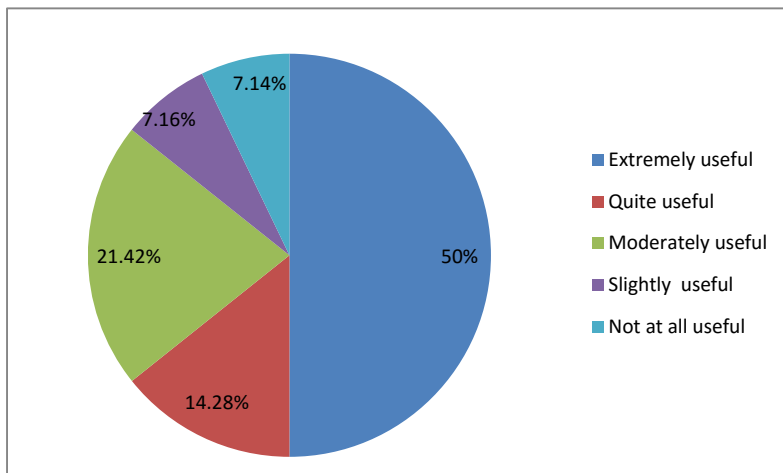
It is seen that, 14.28% respondent opined that they find extremely and very successful software installation and usage whereas 42.88% respondent opined that moderately successful performance, 7.14% respondent opined that it is slightly successfully and 21.42% respondent clearly defined not at all successful.

6.5 DOCUMENTATION SUPPORT

TABLE 5: DOCUMENT SUPPORT

Particulars	Percentage (%)
Extremely useful	50
Quite useful	14.28
Moderately useful	21.42
Slightly useful	7.16
Not at all useful	7.14
Total	100

GRAPH 5: DOCUMENT SUPPORT



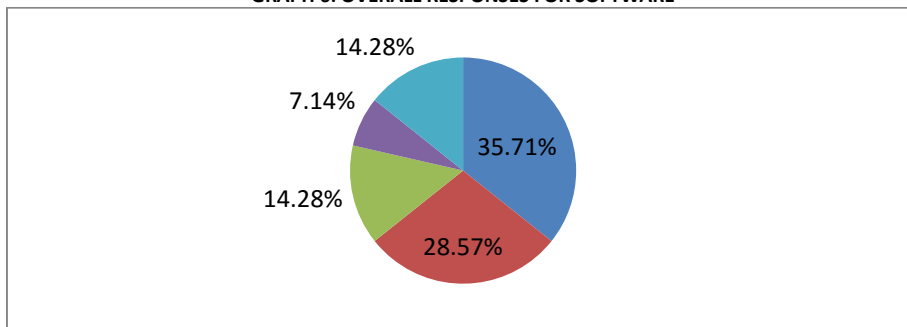
From the above graph it is observed that, 50% users opined that, the software documentation usefulness is more, whereas 21.42% is moderately useful. 7.14% opined that, it is slightly and not at all useful.

6.6 OVERALL RESPONSE FOR SOFTWARE

TABLE 6: OVERALL RESPONSES FOR SOFTWARE

Particulars	Percentage (%)
Extremely responsive	35.71
Quite responsive	28.57
Moderately responsive	14.28
Slightly responsive	7.14
Not all responsive	14.28
Total	100

GRAPH 6: OVERALL RESPONSES FOR SOFTWARE



The above table shows opinion of user regarding overall responses for software. From the above graph shows it is clear that 35.71% is extremely responsive, 28.57% respondent are quite responsive for software usage, 14.28% has got moderately responsive & not all responsive and 7.14% has got slightly responsive whereas 14% are not all responsive.

7. FINDINGS

- 1) Software should be clear easy to understand and user friendly.
- 2) Software should performing intended task moderately successful.
- 3) Software company should provide quick update about the new software so that the customers can easily get new updates of software.

8. CONCLUSION

Present study helps to identify the requirements of software, phases required for software, working and interfacing software. This study is more helpful for software developers for improving quality of the software. From the opinion of the end users it is clear that, they are satisfied with existing software installed by InfoTech Solutions.

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IMPACT OF 'MAKE IN INDIA' ON FOREIGN DIRECT INVESTMENT**SHRADDHA PRASAD KULKARNI****ASST. PROFESSOR****VPIMSR****SANGLI****ABSTRACT**

Make in India is an international marketing campaigning slogan framed by the Prime Minister of India Mr. Narendra Modi on September 25, 2014. The aim of such campaign is to attract businesses from around the world to invest and manufacture in India. Manufacturing hub and economic transformation are main aims by reducing the unnecessary laws and regulations, government become transparent, responsive and accountable. This study focuses on impact of n Make in India policy of government on Foreign Direct Investment. It also focuses on growth due to increase in contribution in India. The government emphasized upon the framework which include the time-bound project clearances through a single online portal which will be further aided by the eight-member team dedicated to answering investor queries within 48 hours and addressing key issues including labor laws, skill development and infrastructure. This campaign basically gives hope to more job opportunities in lots of service sector activity. India will have to focus on quality education rather than just skill development. It has been high correlation between Industrial Production and FDI inflows.

KEYWORDS

FDI, Make in India, SEZ.

1. INTRODUCTION

In August 2014, the Cabinet of India allowed 49% foreign direct investment (FDI) in the defense sector and 100% in railways infrastructure. India has already marked its presence as one of the fastest growing economies of the world. It has been ranked among the top 3 attractive destinations for inbound investments. The regulatory environment in terms of foreign investment has been consistently eased to make it investor-friendly. Being a critical driver of economic growth, foreign direct investment (FDI) is a major source of non-debt financial resource for the economic development of India. Foreign companies invest in India to take benefit of relatively lower wages, special investment privileges such as tax exemptions, exception etc. For a country where foreign investments are being made, it also means achieving technical know-how and generating employment. India is the most preferred destination in terms of financial attractiveness, people and skills availability and business environment. Foreign direct investment involves mergers and acquisitions, building new facilities, reinvesting profits earned from overseas operations and intra company loan. In a narrow sense, foreign direct investment refers just to building new facilities. According to Department of Industrial Policy and Promotion (DIPP), the total FDI inflows improved by 24.5 per cent to US\$ 44.9 billion during FY2015, as compared to US\$ 36.0 billion in FY2014. FDI into India through the Foreign Investment Promotion Board (FIPB) route boost up by 26 per cent to US\$ 31.9 billion in the year FY2015 as against US\$ 25.3 billion in the previous year, indicating that government's effort to improve ease of doing business and relaxation in FDI norms is yielding results. By introduction of new policy of Government i.e. Make In India will focuses on improvement in contribution by Foreign direct investment. It also focuses on zero defect in production process to attract foreign investors. Make in India is an initiative of the Government of India to encourage multinational, domestic companies to manufacture their products in India. It was launched by Prime Minister Narendra Modi on 25 September 2014. India would emerge, after initiation of the program in 2015, as the top destination globally for foreign direct investment, surpassing the People's Republic of China as well as the United States. "Zero Defect Zero Effect" is a slogan proposed by Prime Minister of India, Narendra Modi which signifies production mechanisms wherein products have zero defects and the process through which product is made has no adverse environmental and ecological effects. The slogan also trigger no rejection by the global market for Indian product. According to press release, due to such policy, growth in FDI has been significant after September 2014, with 48 percent increase in FDI equity inflows during October 2014 to April 2015 over the corresponding period last year. In 2014-15, country witnessed unprecedented growth of 71.7 percent, to US \$ 40.92 billion of Investment by Foreign Institutional Investors (FIIs).

2. OBJECTIVES

1. To highlight the impact on FDI after launch of Make in India government policy on economic development
2. To make comparative study about the role of FDI's inflows on different sector.

3. FOREIGN DIRECT INVESTMENT

An investment made by a company or entity based in one country, into a company or entity based in another country. Foreign direct investments differ substantially from indirect investments such as portfolio flows, wherein overseas institutions invest in equities listed on a nation's stock exchange. Entities making direct investments typically have a significant degree of influence and control over the company into which the investment is made. Open economies with skilled workforces and good growth prospects tend to attract larger amounts of foreign direct investment than closed, highly regulated economies.

4. RECENT POLICY MEASURES OF FDI

- Foreign Direct Investment in medical device is 100%.
- Contribution of FDI cap in Insurance & sub-activities of insurance increased from 26% to 49%
- FDI up to 49% has been permitted in the Pension Sector.
- FDI contribution raised to 49% for defense sector from 26% under Government approval route. Foreign Portfolio Investment up to 24% permitted under automatic route. FDI beyond 49% is also allowed on a case to case basis with the approval of Cabinet Committee on Security.
- 100% foreign direct investment under automatic route for construction, operation and maintenance of specified activities of Railway sector
- FDI policy on Construction Development sector has been liberalized by relaxing the norms pertaining to minimum area, minimum capitalization and repatriation of funds or exit from the project. To encourage investment in affordable housing, projects committing 30 percent of the total project cost for low cost affordable housing have been exempted from minimum area and capitalization norms.
- Investment by NRIs under Schedule 4 of FEMA (Transfer or Issue of Security by Persons Resident Outside India) Regulations will be deemed to be domestic investment at par with the investment made by residents.
- White Label ATM Operations allowed 100% FDI

5. MAKE IN INDIA

'Make in India' recognizes 'ease of doing business' as the single most important factor to promote entrepreneurship. A number of initiatives have already been undertaken to ease business environment. The aim is to de-license and de-regulate the industry during the entire life cycle of a business. Availability of modern and facilitating infrastructure is a very important requirement for the growth of industry. Government intends to develop industrial corridors and smart cities to provide infrastructure based on state-of-the-art technology with modern high-speed communication and integrated logistic arrangements. Existing infrastructure

to be strengthened through upgradation of infrastructure in industrial clusters. 'Make in India' has identified 25 sectors in manufacturing, infrastructure and service activities and detailed information is being shared through interactive web-portal and professionally developed brochures.

6. BENEFITS OF MAKE IN INDIA

- EMPLOYMENT OPPORTUNITY:** Labour are plenty in numbers and even skilled labors are easily available with high rates of unemployment among the educated class of the country. This will augment the purchasing power of the common Indian, which mitigate poverty and expand the consumer base for companies. Besides, it will help in reducing brain drain.
- EXPORT-ORIENTED:** It is based on growth model which will improve India's Balance of Payments and help in accumulating foreign exchange reserves.
- FOREIGN INVESTMENT:** It will bring technical expertise and creative skills along with foreign capital.
- FII's :** FIIs play a dominant role (relative to FDI) in the Indian markets. However, FIIs are highly volatile in nature Make in India will give an unprecedented boost to FDI flows.

7. DRAWBACKS OF MAKE IN INDIA

- Make in India will tend to violate the theory of comparative advantage through theoretical perspective. It is best to import the same from a country which enjoys comparative advantage in its production.
- Dr. RaghuramRajan, recapitulate ask the point,India does not have the time advantage as it undertakes a manufacturing splurge like china. The essential question is - Is the world ready for a replica of China?
- Make in India will lead to an unsustainable focus on export promotion measures.this cause measures undervaluing the rupee artificially. This will have catastrophicconsequences for the import bill.

8. FDI'S CONTRIBUTION FROM NATIONS VISITED

As per article stated in Zee Business, FDI's contribution from Nations visited by Narendra Modi in financial year 2014-15,India received \$19.78 billion foreign direct investment (FDI) from 12 countries.During the period, Indian companies invested \$3.42 billion in these countries which include Bhutan, Brazil, Nepal, Japan, the US, Myanmar, Australia, Fiji, Seychelles, Mauritius, Sri Lanka and Singapore.The total outflow and inflow of foreign investment in general for 2014-15 fiscal was \$6.42 billion and \$75.71 billion, respectively.

9. IMPACT OF MAKE IN INDIA

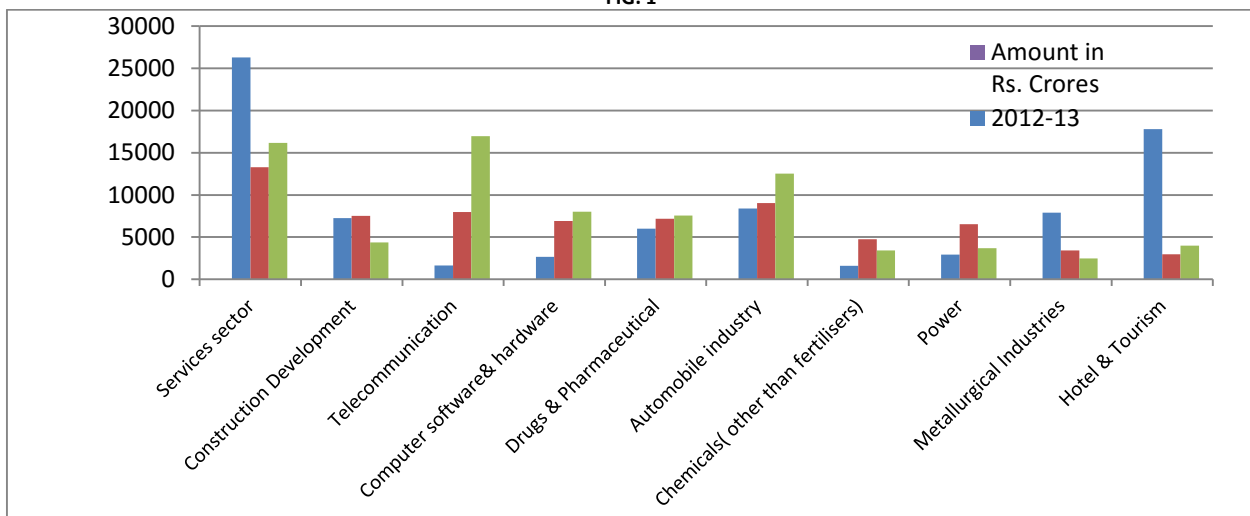
The FDI inflow during the financial year 2014-15 was spread across the sectors evidencing the fact of positive eco-system of investment opportunities which India is now providing.Following is the inflow of some sector which earn after Make InIndia Policy.

TABLE 1: STATEMENT SHOWING SECTOR WISE COMPARISON OF FDI CONTRIBUTION (Amount in Rs. Crores)

Sector	2012-13	2013-14	2014-15
Service sector	26,306	13,294	16,159
Construction Development	7,248	7,508	4,359
Telecommunication	1,654	7,987	16,978
Computer software&hardware	2,656	6,896	8,023
Drugs & Pharmaceutical	6,011	7,191	7,559
Automobile industry	8,384	9,027	12,529
Chemicals(other than fertilisers)	1,596	4,738	3,408
Power	2,923	6,519	3,704
Metallurgical Industries	7,878	3,436	2,488
Hotel & Tourism	17,777	2,949	3,990

(Source: Statistical data available on RBI's publication)

FIG. 1



From above graph it seen that contribution of FDI in Telecommunication & Automobile industry increased drastically with comparison of 2012-13, 2013-14, 2014-15financial year.But on contrast side there is degradation in Hotel & tourism sector and construction sector from the year 2012-13 to 2014-15. More focus of FDI is on Automobile & telecommunication because of new inventions & new technologies supporting media. India have more qualified employees with lesser cost with comparison of other countries. Now new policy focuses on medical facility to allow 100% FDI's contribution. For improving construction line & infrastructural sector government is ready to allow hundred percent FDI's contribution.

10. SUGGESTIONS FOR IMPROVEMENT IN INFLOW OF FDI

- Labour Law – India should focus on infrastructural activity which attract maximum labour.And the law related to labour must be more flexible according to the condition of manufacturers.

2. Focus on Special Economic Zone – Units of SEZ are ample in India. For attracting other countries investment government required to concentrate on SEZ units by supplying them good road, transport facility, subsidiaries and different schemes etc.
3. Promote Greenfield projects-India's FDI increased basically due to Merger and Acquisitions (M&As) rather than large Greenfields projects. M&As not necessarily contribute of new capital into a country if it is through reinvested earnings and intra company loans. Business friendly environment must be created on priority to attract large Greenfields projects.
4. Improve liquidity of Debt Market-India is well doing in capital market but weak in debt & liquidity market as maximum companies focuses on leverage materiality.

11. CONCLUSION

FDI plays a crucial role in the long-term development of a country. It also improves source of capital & enhance competitiveness of the domestic economy through transfer of technology, raising productivity and generating new employment opportunities. It has been viewed that there is high correlation between Industrial Production and FDI inflows. By applying Government policy of Make In India will improve inflow of FDI in India drastically. 48% increase in Inflow of FDI due to Make in India policy so we can trigger more on this policy to boost our economy.

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PATIENT'S SATISFACTION TOWARDS SERVICE QUALITY: A COMPARATIVE ANALYSIS OF GOVERNMENT AND MISSION HOSPITAL, MIRAJ

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ABSTRACT

In today's competitive environment, service quality is widely recognized as a critical determinant for success and survival of any organization. Any decline in customer satisfaction due to poor service quality would be a matter of concern. Service sector consists of different dimensions and among 'health care' stands as a vital factor which is a matter of concern when it comes to handling epidemics, emergencies etc. it is often quoted that 'quality lies in the eye of the beholder' who are the better judges of quality in health care than patients themselves. This paper aims to tackle service quality in terms of patient's satisfaction towards services, provided by government civil hospital and Missionary Wanless hospital in Miraj city. The SERVQUAL model is used to identify the relevant service quality rendered to patients and the outcome of the gap between expected and perceived quality with due emphasis on the key requirements of health care.

KEYWORDS

patient satisfaction, service quality, servqual model.

1. INTRODUCTION

It is health that is real wealth and not pieces of gold and silver' – Mahatma K Gandhi. Good health is the basic need of any individual and it is said prevention is better than cure. Majority of us rarely visit the hospital but, an era has arrived where visits to the hospital has become an essential part of our daily life due to sedentary lifestyles, emphasis on fast food added with lack of exercise and proper diet. The Indian healthcare industry is growing at a rapid pace and is expected to become a US\$ 280 billion industry by 2020. Rising income levels and growing elderly populations are all factors that are driving this growth. In addition, changing demographics, disease profiles and the shift from chronic to lifestyle diseases in the country has led to increased spending on healthcare delivery. Even so, nearly one million Indians die every year due to inadequate healthcare facilities and 700 million people have no access to specialist care. 80% of specialists live in urban areas. In order to meet manpower shortages and reach world standards, India would require investments of up to \$20 billion over the next 5 years. Currently, India stands at a cross-road of high-end, multi-specialty private healthcare services on one end and lack of doctors, support staff, medicines and facilities at the other. High-end facilities and education platforms are concentrated near metropolitan centers (World Health Organisation in its 2012 report said that only 26% of healthcare professionals were available to address the needs of 72% of the country's population).

Considering the demand given above, the domestic healthcare sector is expected to rise to \$100 billion by 2015, according to the India Brand Equity Foundation. And 71% of this growth is expected to take place in hospitals.

Service sector consists of different dimensions and among them I have picked 'health care' which deals with different services such as, hospital services, diagnosis services, physicians consultancies and emerging fields. The paper aims to tackle the patient's satisfaction in terms of services provided by government civil hospital and Missionary Wanless hospital in Miraj city. The SERVQUAL model is used to identify the relevant service quality rendered to patients and the outcome of the gap between expected and perceived quality with due emphasis on the key requirements of health care.

Service quality has been revealed as a key factor in search for sustainable competitive advantage, differentiation and excellence in the service sector. Besides, it has been recognized as highly important for satisfying and retaining customers. Service quality measures implemented improves the operational efficiency in the healthcare sector, thereby resulting in optimum resource allocation, minimum wastage of the available resources and significant improvement in quality, leading in considerable improvement to the end users viz. patients of the hospital.

Thus, the purpose of the present paper is to develop a comparative study empirical framework for measuring hospital service quality, expanding the existing models and literature on healthcare services to benefit academicians, practitioners and researchers to enhance the understanding of patient perceived hospital service quality addressing this gap in literature as there are a few reliable and valid instruments available; and many service providers are implementing measures that are not aligned to the complexities of the health care setting. Consequently understanding of service quality assists practitioners to meet the requirements in their daily operations.

The present study is being undertaken to assess the service quality of public and missionary owned hospitals plus to analyze the service gaps between perception and expectations of patients undergoing treatment in such hospitals.

2. SIGNIFICANCE OF THE STUDY

Lately Sangli-Miraj-Kupwad Corporation had been in the news due to various aerial borne, water borne diseases that landed many of its citizens into private, public, missionary owned hospitals. The hospitals inadequate infrastructure, lengthy treatment procedure, lack of skilled personnel, haphazard billing etc. has promoted the researcher to undertake the current area of study for research.

The researcher wishes to highlight the quality of services from its inception i.e. enquiry to discharge of the patient involved including hospital stay, treatment during hospitalisation, doctors prognosis, tests related-unrelated conducted, staff expertise in handling patients, sanitation maintained etc. plus how to bridge quality gap between services publicized to services rendered.

3. STATEMENT OF THE PROBLEM

Miraj City is part of the Sangli-Miraj-Kupwad Municipal Corporation formed in 1999. The city is recognized for performance of Hindustani classical music, for its medical services and as a place of religious harmony with Marathi and Kannada as the most widely spoken language. In the 19th century, Miraj was recognized for its Vaidyas, practitioners of traditional Ayurvedic medicine. Within India, Miraj has the highest number of hospitals per capita. Currently medical facilities are available in the form of civil hospital, Wanless hospital and other reputed private hospitals.

Miraj is noted for its pleasant climate that is conducive for health care, hence the patients come here for medical treatment from various parts of Maharashtra and Karnataka states. Patients prefer hospitals based on their quality of services viz. Tangibles, Reliability, Responsiveness, Assurance and Empathy. Though both government and private hospitals provide quality medical services, it is very important to evaluate them from patient's perspective. Keeping this in mind this research is carried out to analyze Patient's satisfaction towards service quality: A comparative analysis of Government and Mission Hospital, Miraj."

4. OBJECTIVES OF THE STUDY

1. To assess the service quality in these hospitals with respect to 5 dimensions viz. Tangibles, Reliability, Responsiveness, Assurance, Empathy.
2. To evaluate the patient satisfaction over service quality offered by Government (Civil) & missionary owned (Wanless) hospital in Miraj city.
3. To suggest measures to improve service quality faced by Civil hospital and Wanless hospital in the study area.

5. RESEARCH METHODOLOGY

RESEARCH DESIGN

1. SAMPLING TECHNIQUE

The sample of minimum size 300 is drawn using Stratified random sampling among total population of patients undergoing treatment in Civil and Wanless hospital (150-each) in Miraj city by stratifying it into mutually exclusive groups of patients in both the hospitals to study and compare the degree of satisfaction. Sample is selected randomly from each strata.

2. SAMPLE SIZE

The population considered for study belongs to patients undergoing treatment in Civil and Mission hospital in Miraj city. As the numbers of patients in these hospitals are from various states, especially from Maharashtra and Karnataka, it creates a large population for the study. Hence following formula is used for calculating the sample size for each of the hospitals.

$n = (z^2 * p * q) / e^2$, where

n= size of sample for very large population

p= 0.50, probability of success of the selection of sample

q=0.50, Probability of failure of the results

e=0.08 (8%), Tolerable error

z=1.96 The Critical Value for 5% level of significance (95% Confidence Level)

$n = (1.96^2 * .50 * .50) / (0.08)^2$

$n = (3.8416 * .25) / (.0064)$

n=150 Respondents for each hospital

Total respondents = 150 * 2= 300

3. RESEARCH STUDY AREA

As the research highlights patients satisfaction about the services available in civil and mission hospital of Miraj city, the area and the scope of the research is limited to these hospitals only.

6. DATA ANALYSIS

The purpose of this study is find how out consumers of hospitals perceive service quality and see how applicable the SERVQUAL model in the context of these hospitals by using its 5 dimensions to measure service quality viz. Tangibles, Reliability, Responsiveness, Assurance, Empathy. The data collected through questionnaire is represented in the following table by calculating Weighted Arithmetic Mean: $Wm = \sum Wt * R$ (where Wt is Likert scale and R is respondents)

TABLE 1: SERVQUAL PARAMETERS FOR CIVIL HOSPITAL

The ratings are 1: Completely Dissatisfied, 2: Somewhat Dissatisfied, 3: Neutral 4: Somewhat Satisfied 5: Completely Satisfied.

SERVQUAL Parameters		1	2	3	4	5	Total	Mean	Parameter Mean
Tangible	Physical Environment	3	4	5	25	113	150	4.61	4.72
	Equipment & facilities	1	3	6	11	129	150	4.76	
	Physical appearance of staff	1	3	5	13	128	150	4.76	
	In house service	3	4	3	14	126	150	4.71	
	Hygiene and Cleanliness	2	2	4	12	130	150	4.77	
Reliability	Qualification of staff	5	13	35	55	42	150	3.77	3.73
	Prompt services	7	15	42	57	29	150	3.57	
	Severity of the case	6	12	31	63	38	150	3.77	
	Service commitments	5	13	30	55	47	150	3.84	
	Accurate records, documents	7	14	32	61	36	150	3.70	
Responsiveness	Staff responsiveness	1	3	3	12	131	150	4.79	4.74
	Promptness in treatment	2	5	3	15	125	150	4.71	
	Caring attitude pre treatment	2	3	5	12	128	150	4.74	
	Attentiveness to request	2	5	3	14	126	150	4.71	
	Caring attitude post treatment	2	2	3	17	126	150	4.75	
Assurance	Politeness to queries	2	5	2	14	127	150	4.73	4.72
	Trust worthy behaviour	2	6	2	15	125	150	4.70	
	Welfare Schemes	3	4	5	12	126	150	4.69	
	Knowledge expertise	2	5	2	14	127	150	4.73	
	Word of mouth	3	4	1	13	129	150	4.74	
Empathy	Individual attention	3	3	3	15	126	150	4.72	4.76
	Convenient timings	1	2	4	13	130	150	4.79	
	Understanding specific needs	1	3	2	14	130	150	4.79	
	Patients interests	2	4	1	14	129	150	4.76	
	Unbiased services	2	3	2	16	127	150	4.75	
Comprehensive Weighted Mean									4.53

TABLE 2: SERVQUAL PARAMETERS FOR MISSION HOSPITAL

The ratings are 1: Completely Dissatisfied, 2: Somewhat Dissatisfied, 3: Neutral 4: Somewhat Satisfied 5: Completely Satisfied.

SERVQUAL Parameters		1	2	3	4	5	Total	Mean	Parameter Mean
Tangible	Physical Environment	4	5	15	75	51	150	4.09	4.07
	Equipment & facilities	1	4	21	71	53	150	4.14	
	Physical appearance of staff	2	5	15	73	55	150	4.16	
	In house service	3	5	23	74	45	150	4.02	
	Hygiene and Cleanliness	2	7	28	72	41	150	3.95	
Reliability	Qualification of staff	4	5	3	5	25	112	4.57	4.56
	Prompt services	5	7	5	2	27	109	4.51	
	Severity of the case	17	6	2	1	23	118	4.63	
	Service commitments	2	5	3	5	25	112	4.57	
	Accurate records, documents	2	7	4	2	31	106	4.50	
Responsiveness	Staff responsiveness	11	13	34	43	49	150	3.71	3.87
	Promptness in treatment	5	8	13	76	48	150	4.03	
	Caring attitude pre treatment	4	9	19	70	48	150	3.99	
	Attentiveness to request	4	15	39	44	48	150	3.78	
	Caring attitude post treatment	4	16	33	47	50	150	3.82	
Assurance	Politeness to queries	2	5	22	67	54	150	4.11	4.08
	Trust worthy behaviour	2	8	22	65	53	150	4.06	
	Welfare Schemes	6	7	19	62	56	150	4.03	
	Knowledge expertise	2	5	15	75	53	150	4.15	
	Word of mouth	3	7	18	73	49	150	4.05	
Empathy	Individual attention	5	9	15	70	51	150	4.02	4.10
	Convenient timings	2	4	18	68	58	150	4.17	
	Understanding specific needs	1	5	16	75	53	150	4.16	
	Patients interests	2	8	11	68	61	150	4.19	
	Unbiased services	4	5	15	79	47	150	4.07	
Comprehensive Weighted Mean									4.13

7. CONCLUSION

In conclusion, knowing how consumers perceive service quality and being able to measure service quality can benefit management of such health service organisations. Measuring service quality can help management provide reliable data that can be used to monitor and maintain improved service quality. Using the SERVQUAL model to assess service quality enables management to better understand the various dimensions and how they affect service quality and customer satisfaction. This will help them to identify those that have strengths and weaknesses and thereby make necessary improvements. The current research under study will help them to identify those that have strengths and weaknesses and thereby make necessary improvements.

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EFFECTIVE USE OF JOB SHARING IN WORK-LIFE BALANCE

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ABSTRACT

Day by day, Human resource management is going to be more effective as it including older concepts in new form. One of them is Job Sharing. Job sharing is the older concept, but it cannot be popularized that much how much it really needs. It is nothing but to come together to share the work which is very helpful to all for balancing work life. Job sharing concept does not getting applied that much effectively and carefully how much it really needs. Job sharing and Job split these are two interrelated concepts of human resource management which really wants to be take into consideration for employee satisfaction. Job sharing helps to all equally like employees, organization and society. This concept of job sharing is applicable in any type of industry. It can also helps to men or women employees in organization. Now days, balancing work life of any employee becoming a challenge and need for better life. So, these latest concepts like job sharing and job split are helpful to the employees to share their workload more easily and effectively. Work life balance is an important aspect related to both- the employee as well as the organization. So if any organization wants to be more productive, I will suggest that they should apply the JOB SHARING concept. If employees are satisfied and have balanced work life, they will surely get more successful completion of goals and objectives of organization.

KEYWORDS

job sharing, work-life balance, job satisfaction, productivity, employees.

INTRODUCTION

Job-sharing is an arrangement related to work of employees, in which two or more employee come together to share one full-time job. Each employee works part-time on a regular ongoing basis. It may be viable when a job needs to be filled on a full-time basis, though not necessarily by one employee.

Job sharing can help to employees for recruitment and also for retention of qualitative employees for organizational use. Because of job sharing organization can do better for their welfare. It helps to employees to keep balanced work life. Employees also can get relaxation, leave during the illness period, and distribution of workload. Job sharing is a flexible option that in theory allows individuals to work more flexibly while at the same time retaining a higher level of status, recognition and career opportunities.

Job sharing can be applied during any type project work, temporary time limited work or it can be applied through the permanent job period. Job sharing is like joined responsibility of both employees who have accepted job sharing policy for their specific workload.

POSITIVENESS ABOUT JOB SHARING

1. Helps for sharing workload.
2. Helps to keep continue the routine work of both- the employe and the organization.
3. Keeps relaxation during the work / project period.
4. It helps in retention of skillful employees or workers which is unavoidable part for organization.
5. Job share works actively in any type of job or any type of work like it may be temporary, permanent or limited project work.

NEGATIVENESS ABOUT JOB SHARING

1. There can be different approaches can be takes place of two job sharing partners about same work.
2. The both partners can get need of training for different basic points related to their work and responsibilities. So organization cannot get affordable scheme of job sharing.
3. Managers can get a question related to filling the vacancy of job sharing, when one of the two leave that job.
4. Employees of different style (their own characteristics) cannot work together more effectively.
5. The employees can get incompatibilities with each other.

PROCESS OF JOB SHARING

1. **Clarify your objectives and individual goals:** define your professional and private objectives (family, continuing education). List your reasons for seeking a job share position; collect the information about the job share model by consulting web sites such as www.go-for-jobsharing.ch and read the testimonials.
2. **Analyze all Hr activities of HR Department:** analyze your current job to see whether it could be shared or whether you need to look for a new position. Check whether your company's HR policies, mission or vision contains references to alternative work models. Search for companies that refer to these models on their website and in their mission statement.
3. **Plan your job share:** depending on the circumstances, you will need some time to find your work partner. Set a schedule for yourself, including deadlines and intermediate goals and build in alternatives.
4. **Find a compatible partner:** if you wish to share your current position, think about possible partners within the company. If you cannot identify an appropriate candidate, consult existing information in the company or on networking sites.
5. **Set up the partnership:** discuss the terms of your job share. In your discussions, take into account your different strengths and weaknesses, as well as the points you have in common. Negotiate and agree upon the specific details of how you will share the position: working days and hours and rate of activity. If there is already a job description, discuss how the workload will be divided.
6. **Outline your arguments in favor of job sharing:** include arguments from both the employee's and company's perspective. Plan your sales pitch. In addition, prepare a list of possible objections from hiring and/or recruiting managers and prepare responses to address their reluctance.
7. **Prepare a joint application and job sharing proposal:** draw up a presentation on the details for your job share. You should be ready with your joint application of job share. And there should be a proposal regarding the sharing of job.
8. **Prepare for your job interview:** arrange a joint appointment with the HR manager. Give each participant in the interview a copy of the documents you have drawn up. Prepare for the interview with your job share partner. Have an alternative strategy or new options available. You and your partner should have considered the possibility that your proposal may be refused. Be prepared with another suggestion.
9. **Job interview:** during the interview, be professional and keep your objective firmly in mind. It is an unusual subject and every minute counts. Negotiate and if necessary arrange a second interview.
10. **Negotiating the contract:** in most cases, separate contracts are prepared for each co-worker. Avoid uncommon provisions or conditions concerning termination of the contract if one person quits the partnership.

WORK- LIFE BALANCE

Work life balance helps to decide or choose the priority of different things that are happening in our life. Same like that employees can decide the work priority and make their life simpler than they have. As the workers works for long hours, so that they have to balance their life between work and personal life. Work life balance helps to keep that balance continuous, so that the employees can handle their personal life as well as their work.

We can say that the work life balance is the success key to keep growth in the productivity of employee. Work life balance creates job satisfaction. Work life balance describes the relationship between your work and the commitments in the rest of your life, and how they impact on one another.

Definition:- Work life balance is the relationship between the amount of time and effort that someone gives to work and the amount that they give to other aspects of life, such as their family. (According to, Macmillan Publishers Limited).

WORK LIFE BALANCE TECHNIQUES

According to Dr. Glenn Carter, With work life balance you are more productive over longer periods of time. Because you have a more balanced perspective you spot opportunities that you may otherwise miss had you been overworked and over-tired.

Flexible Work Structure:- Any type of structure is helpful to get you know what is happening and what will happen in future. The structure should take place in work or in life. To achieve work life balance you need to be able to work from a variety of location and at the different times of the day. Flexibility in life or in any type of work helps you to keep your work life balance successfully.

Provide training in right place:- Any employee or worker needs any type of training or the special technique regarding their work at the workplace. Operational techniques also need the training for effective work life balance. If the workers really need to keep work life balance, then their responsibility is to take effective training and try to keep concentration on work, so that they can balance between the work and life. Getting on with other people is a very necessary aspect of achieving work life balance.

Healthy and fit:- It is important to be healthy and fit during the any time of period. Health is also the important factor to keep the work life balance.

Positive Self-Talk:- Everyone needs to be positive in any type of situation, then why not at work place also? It means that employee can be tried to keep balancing with the help of positive talk. He should always try to complete his work as with positive energy. Also when he going to start any type of new work or project he should say himself that, "yesss! He can do it".

Creating the interest in work:- How much you create interest in your work, it will help you to complete it as early as you want. So be comfortable with your work. Let your interest bounce on the work. Do always something new in your work, so that you can get more satisfaction in your work.

Enjoy every moment of life:- Time never comes back. So, do what you want and the way you want. Everyone has different types of completing any work. So try to complete it in your own style. Don't follow others, let the others follow you. So that you can enjoy every moment of life. When employee enjoy their work as there life, there will never create the problem like imbalance in work and life.

Take a Break from work:- Everyone needs to have a break from their work. So those employees have to think about this. After successful completion of any work, employee should think about the break from his routine work life. So that he can be relax and get back to work again with fresh mind.

RELATION BETWEEN JOB SHARING AND WORK-LIFE BALANCE

It is normally possible to share any job. It is usually done by dividing the total number of hours that need to be worked in a number of ways, and with both partners doing the same type of work (although not necessarily the same amount of work, depending on the number of hours worked by each job sharing partner).

The employees whom sharing the job can be managed by

1. working alternately,
2. choosing the days of work from organizational week,
3. they can also ensure the adjustable overlap or
4. even they can work in the suitable different shifts.

All the above conditions/ situations help to the employee to balance between work and life. The employee can get the time to think about the different activities regarding his work, career and last but not the least his personal life. He can plan about the extra activities related to his family. Everyone needs the time for the family. With the help of job sharing, the partners can enjoy their life as well as their work also.

CONCLUSION

As we seen all the contents of work life balance and process of job sharing, it shows that job sharing can be effectively use in work life balancing. Because the job sharing provides flexibility in work period of employees. So that employee can arrange and also can manage their work as per the need. And also it helps in maintaining the balance between their professional work and personal life. Work life balance is the valuable part of everyone's life. And very obvious the job sharing can be implementing in any type of job.

I would like to conclude that, the job sharing is an important part which can relate with the work life balance. Job sharing helps to maintain the work life balance to the employees. There is effective use of job sharing to keep employees satisfied and in result it will also help in increasing the productivity in the organization.

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AN REVIEW OF INTERNET BANKING IN INDIA

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ABSTRACT

This paper presents an efficient review of some research articles published in the implementation of Internet banking from last few years. The results show that interest in the topic of Internet Banking implementation has growing significantly during this period, and remains a productive area for academic research into the next decade. Internet banking, a major component of e-banking framework, has changed the dynamics of commercial banking worldwide by virtually bringing the entire banking set-up at the approach of a common banking customer. The advanced product in banking is electronic banking (e-banking) that is the main focus of this paper. The study shows that e-banking has multi-dimensional advantages to individual as well as corporate however it is not without certain challenges and issues for the security and interest of customers. A comprehensive list of references is presented, along with an agenda for future research that targets identified gaps in the literature.

KEYWORDS

e-banking framework, commercial banking, challenges and issues, internet banking.

1. REVIEW FROM RESEARCH ARTICLES PUBLISHED IN NATIONAL AND INTERNATIONAL JOURNALS

Parasuraman, Zeithaml and Berry (1985) they defined service quality as the gap between the customers perceptions and expectations of service performance. Based on this conceptualizations and operationalization, they proposed a service quality measurement scale called SERVQUAL. The SERVQUAL instrument identifies service quality from the customer's perspective. After clearing the gaps and on the basis of the work done by Fitzsimmons and Fitzsimmons (1990), they have identified five dimensions with which consumers judge service quality. The literature has been extensively applied in different series settings. It is basically a multi-item scale used for measuring the five dimensions of service quality (i.e. Reliability, Responsiveness, Assurance, Empathy and Tangibility) each dimension containing multiple items that measures the organizations strengths and weaknesses in the area of service quality. SERVQUAL can also be used for comparing service to identify the criteria for superior service quality.^[1]

Bhattacharya (1997) he has studied the impact of the limited liberalization initiated before the deregulations of the 90's on the performance of the different categories of banks. His study covers 70 banks in the period 1986-91. He has constructed one grand frontier for the entire period and measured technical efficiency among the three categories with foreign and private banks having much lower efficiencies. The main results accord with the general perception that in the nationalized era, public sector banks were successful in achieving their principle objectives of deposit and loan expansion.^[2]

Kangis and Vouklatos (1997) their objectives of the research are to compare the customers expectations and perceptions of service quality (SQ) in public and private sector banks. For study purpose, 163 bank customers were selected and used pre-tested questionnaire containing 12 service quality items of SERVQUAL. Correlation technique was used for analysis of data. Findings of the study is that customers of private sector banks were found to have lower level of difference between perception and expectations of SQ than the customers of public sector bank. Convenient location, operating hours, friendliness and courtesy of employees were not considered as important factors by the customers of both sector banks.^[3]

Joseph et.al. (1998) investigated the role of technology on Australian banking sector. In sample size, 68 bank customers were surveyed through 22 items of SERVPERF scale. Ordinary Least Square (OLS) and Factor Analysis techniques are used. It is found that technical/functional quality model was better than SERVQUAL because later was lacking technical dimensions. These two models have distinct and unique strengths for measuring SQ aspects. SQ and the type of communication influence customer - satisfaction.^[4]

Bhat and Gani (2003) compared the customers' expectations and perceptions regarding SQ in public sector, private sector and foreign banks. 800 customers (50% -Public, 25% -Private and 25% -Foreign) and SERVQUAL was used. Mean difference and t-test was used for analysis. It is found that foreign banks were providing better quality services than Indian banks as they were supported by advanced technologies. Indian banks were far behind as far as the physical facilities and up-to-date equipment were concerned. Only PNB and J&K bank were providing the SQ which was somewhat near to the SQ provided by foreign banks to the customers.^[5]

Hundal and Jain (2006) studied adoption of mobile banking services in India. The data was collected in India during 2005. The article articulates the stimulating and inhibiting attributes on the adoption of mobile banking services and outlines managerial implications.^[6]

Sharma et. al. (2007) examined and compared the perceptions of customers regarding SQ in public and private sector banks. Structured questionnaire was prepared and 500 customers (400 from SBI and 100 from HDFC) have been selected. Percentage and weighted average scores were used for data analysis. It is found that SQ was positively associated with customer services and there was significant difference in the quality of services provided by selected banks. Banks located in small cities and towns were lagging behind their counterparts in big and metropolitan cities.^[7]

Migdadi (2008) attempted to identify the service quality between Jordan and UK. The evaluation of the banks web sites was conducted in March 2008 for 16 click-and-mortar retail banks in the UK and 6 dot com retail banks in UK. Result indicated that, the internet banking service encounter quality of the click-and-mortar in Jordan, retail banks is very closed to the UK banks. Further quality of internet banking service encounter quality of the click-and-mortar retail banks in the UK which are very close to the dot com and retail banks in the UK.^[8]

Wong et. al. (2008) made a study to re-examine the role of traditional SQ in E-banking era in Australia. 706 customers and a self-administered questionnaire (22 items to measure SQ) was used for data collection. Quadrant analysis and Factor analysis techniques were used. They concluded that electronic delivery of services continuously increased the customers' expectations of SQ and performance; where as traditional banking services was misaligned to their current expectations and it caused dissatisfaction.^[9]

Rod et. al. (2009) examined the relationship between SQ, overall internet banking SQ and customer services in New Zealand banking sector. They selected 72 customers of national bank and collected opinion, using questionnaire (15 items to measure SQ). Data analysis was done through Soft Modeling SEM methodology, Partial Least Square (PLS). They pointed out that online customer SQ and online information systems were significantly and positively related to overall internet banking SQ. Overall internet banking SQ and customer services were positively associated.^[10]

Riquelme et.al. (2009) studied the impact of customer services and online internet banking services attributes on overall satisfaction of bank customers in Kuwait. They selected 185 customers and collected response using questionnaire. Statistical tools like cross tabulations, multiple regression and discriminate analysis were used for data processing. They reported that 84.4% customers were found to be satisfied from online service but still using multiple channels to conduct transactions. Both customers and online service attributes were found to have significant impact on customer satisfaction. It is found that female customers are less satisfied with the way, the complaint are handled. Further least educated customers use ATMs less frequently.^[11]

Gupta P K (2008) attempted to examine the customer's behaviors with respect to internet banking vis-à-vis conventional banking. From major cities 2000 customers were selected and collected opinion through questionnaire. Statistical techniques such as percentages, F-ratios, cluster trees and factor analysis techniques were used. He concluded that, internet banking was found to be easier and speedier than conventional banking and trust was found as most important

factor followed by accuracy and confidentiality. But on safety level, the rating in case of conventional banking system was found to rise with the movement to higher income levels.^[12]

Khan et. al. (2009) their objective was to evaluate the SQ of internet banking services from the customers view point in India .To measure customer satisfaction, 1143 customers (700 from public sector, 330 from private and 113 from foreign banks) were surveyed through structured questionnaire containing 20 variables .Factor analysis, correlation regression, t-test techniques were used for analysis purpose. They observed that, customers are found to be satisfied with 'reliability' but dissatisfied with 'user friendliness'. Two dimensions i.e. 'privacy/security' and 'fulfillment' were not significantly contributed towards overall SQ. High percentage of young generation having computer literacy, showed that internet banking was going to be very crucial in India. ^[13]

Mallya M D (2009) analyzed the role of IT in improving customer service. Bank customers can look forward to more exciting, innovative and technology-based products. Customers who can enjoy the use of computers can do most of the banking at home/office and experience the benefits of virtual banking. The emerging pattern of banking can help customers to manage their time better and banking can be an integral part of their routine activities. ^[14]

Dangwal, Kaur, Kapoor (2009) highlighted the significant effect of new economic policy of liberalization, privatization and globalization on the working of banks. In this paper the performance appraisal of new private sector banks has been measured through spread, burden and profitability ratios by considering eight parameters. They finally summarized, the spread and profitability ratios increased in new private sector banks in India during the period of study (i.e. March 2001-2005), also indicates that the performance of new private sector banks is on the incremental trend^[15]

2. REVIEW FROM REFERENCE BOOKS

Mathur (1978) in his book "*Public Sector Banks in India's Economy - A Case Study of State Bank of India*"; has evaluated the role of the public sector banks as an instrument for the rapid growth of the Indian economy. In the process of analyzing that role he has made a thorough study of the working of the State Bank of India and its seven subsidiaries^[16]

Agarwall (1979) in his book "*Management of Nationalized Commercial Banks in India with Reference to their Social Obligations*" has assessed the performance of nationalized banks in discharging the various social obligations. There being no absolute line of measurement in this regard, an effort has been made to evaluate the performance of the nationalized banks in discharging the various social obligations on the basis of a comparison with the performance of other bank groups. For the assessment of their individual performance, the line of assessment adopted was the average performance of all the nationalized banks^[17]

Seshadri (1981) in his book "*Banks Since Nationalization*" has analyzed the achievements of the nationalized banks with those that were left in the private sector. The progress achieved by these banks in the sphere of branches, deposits, advances etc. were analyzed with secondary data available from various banks, the Reserve Bank of India and so on. The efficiency and profitability of the nationalized banks too were analyzed. ^[18]

3. CONCLUSION

It is conclude that most of the researcher has studied the service quality (SQ) factor in Private, Public and foreign banks on the basis of service provided by them using SERVQUAL method. Also some research work is done on measuring customer satisfaction in private, public and foreign banks. Committees established by RBI to implement new technology in banking sector for cost reduction in service and for providing convenient and secure services to customers.

Present study is extension of above work, which measures service user's satisfaction on the basis of service quality and transparency maintained in E-banking services by the public and private sector banks. For the study purpose the E-banking services like ATM, Internet, Mobile, RTGS, EFT/NEFT, Fund transfer which are used by the service users in Kolhapur district has been considered.

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FINDING INVISIBLE AND NON-MEASURABLE IMPEDANCE VALUES INSIDE THE OBJECT

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ABSTRACT

Computers are widely used in the area of simulation, modeling. The main objective of such methods is to know the invisible and measurable properties of the object. Simulation methods are used to understand the molecular interactions and activity. Imaging is similar to simulation but is generally used at macroscopic level. There are different applications mainly in the medical diagnosis, architecture etc. Impedance tomography is one of the emerging methods of imaging and it has several advantages. In this paper researcher find the impedances at the non-measurable regions such as inside the object by combining centroid formula and line DDA algorithm.

KEYWORDS

impedance, object, modeling, non-measurable region, simulation.

INTRODUCTION

It's very easy to find directly the impedances on the open surface but not inside the closed surface of an object. This paper gives an idea about, how we can calculate impedances inside closed surface of an object which is invisible with the help of few visible and measurable values on surface.

OBJECTIVES OF THE RESEARCH

1. To understand the need of the calculation of the impedances
2. To define the mathematical problem
3. Design of algorithm and flowchart
4. Development of visualization package for the impedance tomography

THEORETICAL BACKGROUND

IMPEDANCE

Impedance is one of the measurable quantity. It can be used to determine the hydration level of non biological objects. The basic formula for impedance is -
 $Z = V/I$

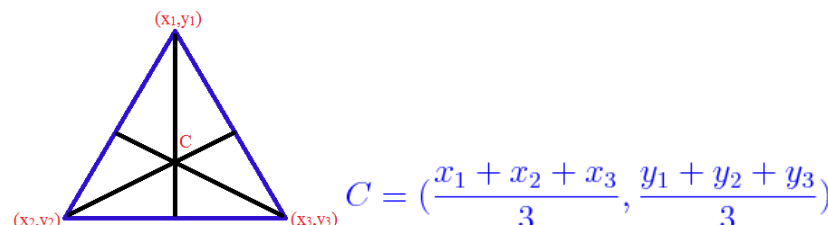
Where, V and I are the potential and electric current respectively. It's easy to find directly the impedances on the open surface but not inside the closed surface.

LINE DDA ALGORITHM

1. Define the nodes, i.e end points in form of (x_1, y_1) and (x_2, y_2) .
2. Calculate the distance between the two end points vertically and horizontally, i.e $dx = |x_1 - x_2|$ and $dy = |y_1 - y_2|$.
3. Define new variable name 'pixel', and compare dx and dy values,
 if $dx > dy$ then
 pixel = dx
 else
 pixel = dy.
4. $dx = dx / \text{pixel}$
 and $dy = dy / \text{pixel}$
5. $x = x_1$;
 $y = y_1$;
6. while ($i \leq \text{pixel}$) compute the pixel and plot the pixel with $x = x + dx$ and $y = y + dy$.

CENTROID FORMULA

Centroid of any object means central point of that object. To find centroid of any object we need to sum all the corner or known points and divide it by number of points. e.g. If there are 8 input points then we have to add all values of 8 points and divide it by 8 to get centroid of that object. The Centroid of a Triangle is the center of the triangle that can be calculated by using following formula.



Where,

C is the centroid of the triangle.

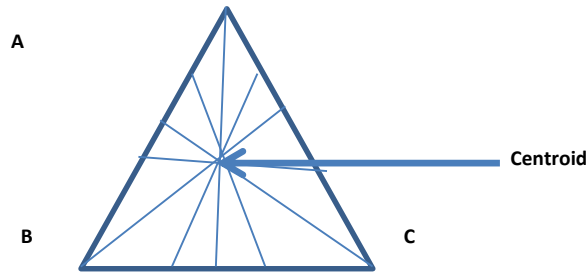
x_1, x_2, x_3 are the x-coordinate's of the vertices of the triangle.

y_1, y_2, y_3 are the y-coordinate's of the vertices of the triangle.

FINDING INSIDE POINTS BY COMBINING LINE DDA ALGORITHM AND CENTROID FORMULA

1. Get input points and their respective values i.e. get few visible and measurable impedance values at their respective points.
2. Connect all input points of an object one by one in such a manner it will cover outer boundary of an object. All points on boundary and all points inside boundary create one surface of an object.
3. By using line drawing algorithm find out points on each boundary line of an object.
4. By using centroid formula find out central point of an object
5. By connecting central point to the each point on boundary line which will create number of lines inside the object as shown in figure below:

FIG. 1: IMAGE PREPARED BY COMBINING LINE DDA ALGORITHM AND CENTROID FORMULA



Where, A,B,C are input points

6. Now again by using line DDA algorithm find out points on each line inside object. In this way we get all the points inside the object.
7. For visualization of the object we need to store all the points in suitable database.
8. By using suitable graphics software we can draw an image with the help of above database where all the points related to particular object are stored. With the help of tooltip control we can easily read impedance value at particular point by dragging mouse over an image.

SAMPLE INPUT OUTPUT SCREENS

Here some inputs and its respective output screens are given. We can give new inputs as well as see results of inputs which are already stored in the database. As new inputs given they are stored into database. Also we can maximize/zoom the original image. These all shown in following sample screens.

FIG. 2: NEW OBJECT CREATED BY PASSING VALUES (TRIANGULAR OBJECT)

Give Input Points with its Impedance Values

Value at X: 100 Next Point

Value at Y: 300 Finish

Value at Z: 100 Draw 2D Image

Impedance Value: 100

Stay with Previous Input Values

Given input points with impedance values as

	X VALUE	Y VALUE	Z VALUE	IMPEDANCE VALUE
▶	100	300	100	100
	200	200	100	200
	300	300	100	300
*				

FIG. 3: IMAGE DRAWN BASED ON THE ABOVE VALUES (TRAGULAR OBJECT)

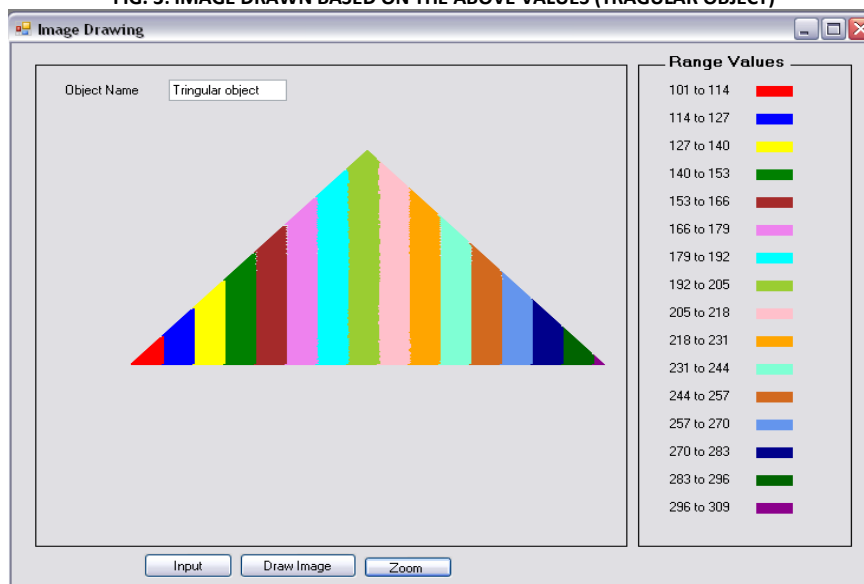


FIG. 4: OBJECT SELECTION (RANDOM OBJECT)

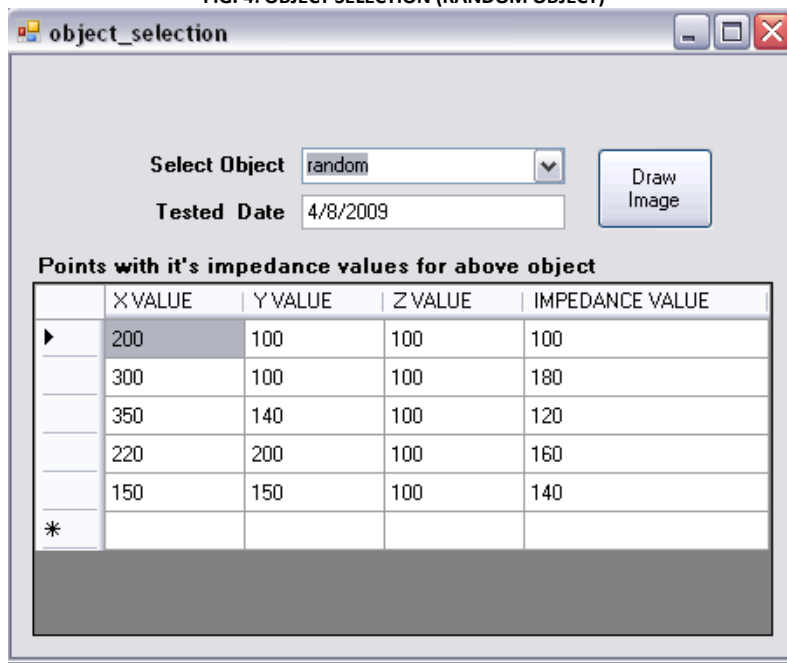
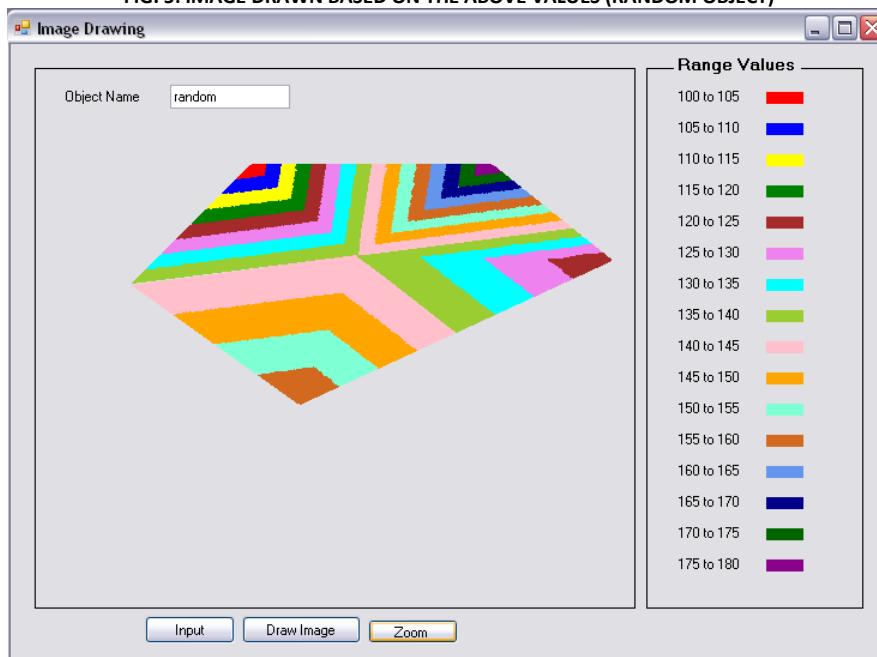


FIG. 5: IMAGE DRAWN BASED ON THE ABOVE VALUES (RANDOM OBJECT)



Note: User can apply above formula for n number of input points as shown in above random object (Fig. 5).

EXPECTED OUTCOMES AND THEIR IMPORTANCE

The calculated value of impedance gives the valuable information about the status of hydration level inside the object.

REQUIREMENTS FOR EQUIPMENT, MATERIALS, FIELD TRIPS, AND FUNDING (IF APPLICABLE)

Experimental setup of impedance measurement, Computer with printer, Microsoft Visual Studio 2005(dot net environment) or higher version.

FUTURE SCOPE

Present study has many applications in medical, civil and mechanical engineering. It is non-destructive method of analysis so it has a wide scope in the field of Civil Engineering for the testing of wall of Dam ,strength of pillars of multistoried building. In Medical field it has applications for the diagnosis of tooth carries, tumor, Bone Density, and Water content of Biological system.

CONCLUSION

To find central point centroid formula is available and to find points on line, line DDA algorithm is available. In present study researcher tried to find new algorithm for finding inside points of an object which will help in finding status of hydration level inside object.

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A ROLE OF DATA MINING TECHNIQUES IN SHARE MARKET INVESTMENT

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ABSTRACT

Knowledge discovery in financial organization have been built and operated mainly to support decision making using knowledge as strategic factor. Data mining can be defined as the process of selecting, exploring and modeling large amounts of data to uncover previously unknown patterns. In the Share Market in equity sector, data mining can help firms gain business advantage Many attempts have been made to predict stock market data using statistical and traditional methods, but these methods are no longer adequate for analyzing this huge amount of data. In this paper, we investigate the use of various data mining techniques for knowledge discovery in investment in Share Market in equity sector. We introduce different exhibits for discovering knowledge in the form of association rules, clustering, classification suitable for data characteristics. Data mining is one of most important powerful information technology tool in today's competitive business world, it is able to uncover hidden patterns and predict future trends and behavior in stock market.

KEYWORDS

share market, equity, association rules, clustering, classification, data mining.

1. INTRODUCTION

 stock market is a place where buying and selling of shares takes place. When an investor buys stocks of a certain company he becomes a part owner of that company according to the number of shares held by him. To make maximum profit, right investment should be made at the right time. The main function of a stock market is the dealings of stocks between investors. Stocks are grouped into industry groups according to their primary business focus. A transaction is the willing of an investor to sell some stocks and the request of another to buy them. Normally purchasing of share depends upon occupation and income of investor. Following table shows current trend of investment based on occupation and income.

Data mining can be defined as the process of selecting, exploring and modeling large amounts of data to uncover previously unknown patterns. In the Share Market in equity sector, data mining can help firms gain business advantage. For example, by applying data mining techniques, companies can fully exploit data about customers' buying patterns and behavior – as well as gaining a greater understanding of their business to help reduce fraud, improve underwriting and enhance risk management. This paper discusses how help to customers can benefit by using modern data mining methodologies and thereby selection of shares in equity, increase profits, acquire new customers. Data mining methodology often can improve upon traditional statistical approaches to solving business solutions. Stock market produces huge datasets that deals enormously complex and dynamic problems with data mining tool. Potential significant benefits of solving these problems motivated extensive research for years . The research in data mining has gained a high attraction due to the importance of its applications and increasing generated information Data mining often can improve existing models by finding additional, important variables, identifying interaction terms and detecting nonlinear relationships. Models that predict relationships and behaviors more accurately lead to greater profits and reduced Risk taking ability. Data classification can be done by many different techniques; one of those methods is the classification by using Decision Tree. It is graphical demonstration of all possible paths and outcomes by which they can be reached.

Specifically, data mining can help stockbrokers in the business of bringing buyers and sellers of stocks and securities together ,increasing generated information. A stock market or equity market is a private or public market for the trading of company stock and derivatives of company stock at an agreed price; there are securities listed on a stock exchange as well as those only traded privately.

- ☆ Acquiring new customers for Opening New Demat Account.
- ☆ Retaining existing customers.
- ☆ Performing sophisticated classification

2. ACQUIRING NEW CUSTOMERS FOR OPENING NEW DEMAT ACCOUNT

An important business problem is the acquisition of new customers. Although traditional approaches involve attempts to increase the customer base by simply expanding the efforts of the stock brokers efforts that are guided by more quantitative data mining approaches can lead to more focused and more successful results. A traditional approach is to increase the number of Demat account holders by simply targeting those who meet certain Shares constraints. A drawback to this approach is that much of the marketing effort may yield little return. Hence in this situation it is important to identify population segments among already demat account holders customers in trading company could be targeted. A statistical technique called "cluster analysis," sometimes used in the private sector to identify various market segments. Clustering is a technique of partitioning or segmenting the data into groups that might or might not be disjointed. The clustering usually accomplished by determining the similarity among the data on predefined attributes. The most similar data are grouped into clusters. Since clusters are not predefined, a domain expert is often required to interpret the meaning of the created clusters.

EXAMPLE 1.1

Trading companies can create special catalogs targeted to various demographic groups based on attributes such as income, occupation, and age as physical characteristic of potential customers. The company then can perform a clustering of potential customers based on determined attribute values to create new catalogs. The results of the clustering exercise can be then used by management to create special catalogs for different Shares and distribute them to the correct target population based on the cluster for that policy.

A Trading company can group its customers based on common features. Company management does not have any predefined for this label. Based on the outcome of the grouping they will target marketing and advertising campaigns to the different groups for a particular type of policy. Following is the general trend observed by experts in share market.

TABLE 1.1: TREND FOR INVESTMENT IN SHARE MARKET

Occupation	Income	Low level shares	Mid level shares	High level shares
Employee	3,000 to 10000	10%		
	10000 to 20000	10%	10%	
	20000 to 30000		20%	
	30000 to 40000	10%		
	40000 to 50000			40%
	>50000		20%	20%
Business man	3,000 to 10000	5%		
	30000 to 40000		40%	
	>50000			60%
Professional	20000 to 30000		40%	
	>50000			60%
Student	3,000 to 10000	10%		
	20000 to 30000		20%	
	>50000			40%
Others	20000 to 30000		10%	
	>50000			60%

TABLE 1.2: SAMPLE DATA BASED ON TRENDS

Occupation	Income	Investment	Type of Share
Employee	8500	1000	Low level
Employee	18000	4000	Low, Mid level
Employee	60000	25000	Low, Mid level
Business Man	38000	15000	Mid level
Professional	28000	6000	Mid level
Employee	125000	30000	Mid, High level
Business Man	70000	45000	High level
Employee	55000	20000	Mid, High level
Professional	120000	75000	High level

The sample data shows the investment done by the customer for particular type of shares (Low-level risk, Mid-level, High-level) depending upon their occupation, and income. Hence depending upon the occupation and income, we could target the customers having less, high income and occupation as employee, professional, students, others, Business man. Hence the group of people, is of younger Customers having knowledge of share market suitable for investment in low, mid, high level shares in equity.

DEFINITION 1.1. Given a database $D = \{t_1, t_2, \dots, t_n\}$ of tuples and an integer value k , the clustering problem is to define a mapping $f : D \rightarrow \{1, \dots, k\}$ where each t_i is assigned to one cluster k_j , $1 \leq j \leq k$. A cluster k_j , contains precisely those tuples mapped to it that is, $k_j = \{t_i \mid f(t_i) = k_j, 1 \leq i \leq n, \text{ and } t_i \in D\}$

Algorithm 1.1 k-means Clustering

K-means is an iterative clustering algorithm in which items are moved among sets of clusters until the desired set is reached

Input:

$D = \{t_1, t_2, t_3, \dots, t_n\}$ //Set of elements

k //Number of desired clusters

Output:

K //set of clusters

Algorithm:

assign initial values for means $m_1, m_2, \dots,$

m_k ; repeat

assign each item t_i to the cluster which has closest

mean; calculate new mean for each cluster;

until convergence criteria is met.

Note that the initial values for means are arbitrarily assigned and the algorithm could stop when no or very small number of tuples are assigned to different clusters. As per the algorithm, first we have to find mean of each cluster. Hence accordingly mean for first cluster is 28500, Employee, 15000, Occupation, Income. Similarly mean for second cluster is 60000, Employee, Professional, Business Men, 25500, while the same for third cluster is 80000, Business, Employee, Professional, 80000. Suppose a customer with income is 25000, occupation Employee, Investment is 14000 and will provide differences 3000, 0, 1000, 0. Once the customer is added to one of the clusters its new mean will be automatically calculated.

3. CLASSIFICATION: SEGMENT DATABASES

To improve predictive accuracy, databases can be segmented into more homogeneous groups. Then the data of each group can be explored, analyzed and modeled. Depending on the business question, segmentation can be done using variables associated with risk factors, profits or behaviors. Segments based on these types of variables often provide sharp contrasts, which can be interpreted more easily. Classification maps data into predefined groups or segments. Classification algorithms require that the classes be defined based on data attributes values. They often describe these classes by looking at the characteristics of data already known to belong to the classes. As a result, Trading companies can more accurately predict the likelihood of a shares in equity based on the upon income and occupation.

EXAMPLE 1.2

Trading company can find a segment based on the income, Occupations. Such patterns can be stored in database. So while to customer, broker can get the information of customer like income and occupation. This pattern can be compared to entries in a database and broker can suggest low level share, mid level share, high level shares in equity customer based on matched patterns.

TABLE 1.2 SAMPLE DATA FOR EXAMPLE

Occupation	Income	Investment	Type of Share
Employee	8500	1000	Low level
Employee	18000	4000	Low, Mid level
Employee	12000	2500	Low, Mid level
Employee	15000	3500	Low, Mid level
Employee	17500	4500	Low, Mid level
Employee	60000	25000	Low, Mid level
Employee	15000	15000	Mid, High level
Employee	125000	30000	Mid, High level
Business man	38000	15000	Mid level
Business man	70000	45000	High level
Business man	9000	500	Low level
Professional	28000	6000	Mid level
Professional	120000	75000	High level
Student	8500	1000	Low level
Student	25000	5000	Mid level
Student	60000	25000	High level
Others	27000	3000	Mid level
Others	60000	35000	High level

This example assumes that the problem is to classify customers in terms of different investments attributes such as occupation, income, mid point. The investments classification can simply be done using income as main criteria shown below:

TABLE 1.3

3,000	≤ Income ≤ 20,000	Low level
15,000	≤ Income ≤ 40,000	Mid level
Income ≥ 40,000		High level

The investments term require complicated set of divisions using both income and Occupation. Similarly Risk shares level require complicated set of divisions using both Income and Occupation while investments require much more complicated set of divisions using Age, Income and Occupation.

u N such that $sim(t,u) \leq sim(t,d)$, then begin

$N = N - \{u\}$;

$N = N \setminus \{d\}$;

DEFINITION 1.1. Given a database $D = \{t_1, t_2, \dots, t_n\}$ of tuples (items, records) and a set of classes $C = \{C_1, \dots, C_m\}$, the classification problem is to define a mapping $f : D \rightarrow C$ where each t_i is assigned to one class. A class C_j , contains precisely those tuples mapped to it that is, $C_j = \{t_i \mid f(t_i) = C_j, 1 \leq i \leq n, \text{ and } t_i \in D\}$

Algorithm 1.2 K Nearest Neighbors

When classification is to be made for new item using K Nearest Neighbors algorithm, its distance to each item in the training set must be determined. The new item is then placed in the class that contains the most items from the (K) closest set.

Input:

T//Training data

K //Number of neighbors

t //Input tuple to classify

Output:

c //class to which t is

assigned Algorithm:

$N = \emptyset$

//Find the set of neighbors, N, for

t For each d T do

If $|N| \leq K$, then

$N = N \cup \{d\}$;

else i

else if

end

//Find class for classification

C=class to which the most u N are classified;

For example, investment there can be two groups as first is for customer with Income 3000/- to 10000/- and Occupation Employee with low risk level share purchasing and 10% amount of their income. Similarly second one is for customer Income >50000/- and Occupation Employee with low risk level share purchasing and 60% amount.

4. CONCLUSION

With the increase of economic globalization and evolution of information technology, financial data are being generated and accumulated at an unprecedented pace. As a result, there has been a critical need for automated approaches to effective and efficient utilization of massive amount of financial data to support companies and individuals in strategic planning and investment decision making. Data mining techniques have been used to uncover hidden patterns and predict future trends and behaviors in financial markets. Clustering is a tool for data analysis, which solves classification problems. Its objective is to distribute cases (people, objects, events etc.) into groups, so that the degree of association can be strong between members of the same cluster and weak between members of different clusters. In clustering, there is no pre classified data and no distinction between independent and dependent variables. Instead, clustering algorithms search for groups of records. The algorithms discover these similarities. This way each cluster describes, in terms of data collected, the class to which its members belong. Clustering is a discovery tool. It may re-veal associations and structure in data which, though not previously evident, nevertheless are sensible and useful once found. As part of a stock market analysis and prediction system consisting of an expert system and clustering of stock prices, data is needed. The competitive advantages achieved by data mining include increased revenue, reduced cost, and much improved marketplace responsiveness and awareness.

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WICHAT: CHAT AND FILE TRANSFER APPLICATION

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ABSTRACT

iPhone Mobile Devices do not have Bluetooth for sharing files between two devices. For chatting between two users, there is a need of internet connections for establishing connections between two devices. For this connection, user must activate their data services and they have to pay for activating their internet services. WiChat App is a chat application for iPhone to exchange messages, files and media files. The most use of this app could be done in a corporate field, where the network is not available and the conversation has to be done within a department.

KEYWORDS

WiFi, iPhone, File Transfer, Xcode.

1. INTRODUCTION

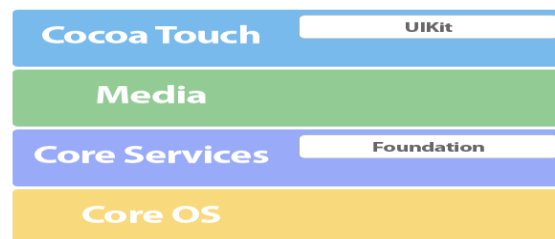
WiChat App is an iPhone WIFI Chat App. User's has to simply enable a WIFI on their device, and can chat with each other without internet. It provides utility to send and receive the text messages, file or media file. WiChat is user friendly and easy to use. At most eight people can chat using WiChat without any charges, the reason behind to develop this app is to exchange messages or media files without requiring a service provider or internet. We can connect at time 8 Device and this device can't display from another devices the reason is that this device is already connected.

iOS (known as iPhone OS before June 2010) is Apple's mobile operating system. Originally developed for the iPhone, it has since been extended to support other Apple, Inc. devices such as the iPod touch, iPad and Apple TV. Apple, Inc. does not license iOS for installation on third-party hardware. As of May 31, 2011, Apple, Inc.'s App Store contains more than 500,000 iOS applications, which have collectively been downloaded more than 15 billion times.

The user interface of iOS is based on the concept of direct manipulation, using multi-touch gestures. Interface control elements consist of sliders, switches, and buttons. The response to user input is immediate and provides a fluid interface. Interaction with the OS includes gestures such as swipe, tap, pinch, and reverse pinch, all of which have specific definitions within the context of the iOS operating system and its multi touch interface. Internal accelerometers are used by some applications to respond to shaking the device (one common result is the undo command) or rotating it in three dimensions (one common result is switching from portrait to landscape mode).

2. IOS ARCHITECTURE

FIG. 1



iOS is derived from Mac OS X, with which it shares the Darwin foundation, and is therefore a Unix-like operating system by nature. In iOS, there are four abstraction layers: the Core OS layer, the Core Services layer, the Media layer, and the Cocoa Touch layer. The current version of the operating system (iOS 10.3.5) uses roughly 650 Megabytes of the device's storage, varying for each model.

2.1 COCOA TOUCH LAYER

The Cocoa Touch layer contains the key frameworks for building iOS applications. This layer defines the basic application infrastructure and support for key technologies such as multitasking, touch-based input, push notifications, and many high-level system services. When designing your applications, you should investigate the technologies in this layer first to see if they meet your needs.

2.2 MEDIA LAYER

The Media layer contains the graphics, audio, and video technologies geared toward creating the best multimedia experience available on a mobile device. The technologies in this layer were designed to make it easy for you to build applications that look and sound great.

2.3 CORE SERVICES LAYER

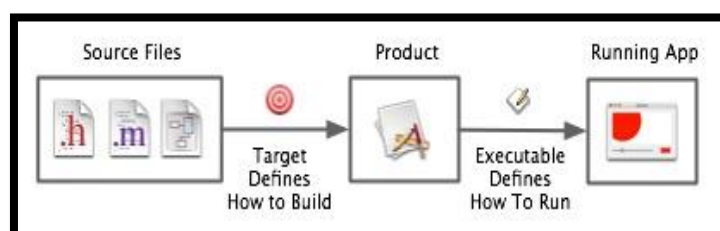
The Core Services layer contains the fundamental system services that all applications use. Even if you do not use these services directly, many parts of the system are built on top of them Core OS.

2.4 CORE OS LAYER

The Core OS layer contains the low-level features that most other technologies are built upon. Even if you do not use these technologies directly in your applications, they are most likely being used by other frameworks. And in situations where you need to explicitly deal with security or communicating with an external hardware accessory, you do so using the frameworks in this layer.

3. XCODE

FIG. 2



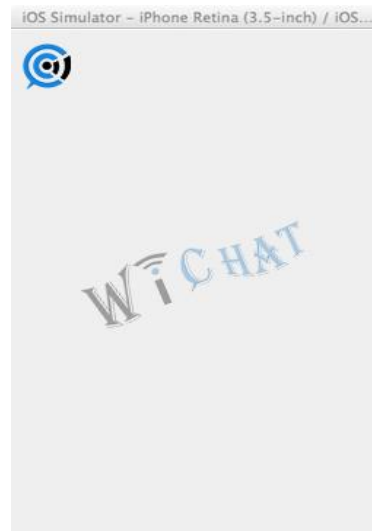
Xcode builds projects from source code written in C, C++, Objective-C, and Objective-C++. It generates executables of all types supported in Mac OS X, including command-line tools, frameworks, plug-ins, kernel extensions, bundles, and applications. (For iOS, only application executables are possible.) Xcode permits almost unlimited customization of build and debugging tools, executable packaging (including information property lists and localized bundles), build processes (including copy-file, script-file, and other build phases), and the user interface (including detached and multiview code editors). Xcode also supports several source-code management systems—namely CVS, Subversion, and Perforce—allowing you to add files to a repository, commit changes, get updated versions, and compare versions.

Executable environment is being provided in which you can run and test a software product. An executable environment defines the program that should be used to run the product with. In many cases, this will be the product itself, but doesn't have to be. In addition, the executable environment defines any command-line arguments and environment variables, which should be used. These three elements of an Xcode project come together as shown in diagram

USER MANUAL

- Firstly open the app on any iPhone device.
- It will ask at the beginning of application for enabling the Wi-Fi access for the particular device.
- After enabling Wi-Fi access, create a profile for creating the chat rooms for chatting and sharing files.
- After profile creation, select the nearby device to which user wants to connect with.
- After establishing connection the user can chat with the other user and can also share files between them. User can also add other users on the chat rooms for chatting.

FIG. 4



4. CONCLUSION

The main limitation of the application is the user can find the people only within its Wi-Fi range. When the user goes offline the chat history gets flush off from the device. The Limitation of the chat is that the maximum eight people are allowed in a group. This application is only support for iPhone Device. This application publishes in App store to apple user or some permission must be required. iPhone user can download this app and use this application.

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DIGITAL PRINTING IN INDIA: SWOT ANALYSIS

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ABSTRACT

With advancement taking place at all levels, digital printing has evolved as indispensable and a 'versatile' printing process. Digital printing process evolved over the years. Today, it offers ample innovation and creativity, thus playing a major role in printing industry because of the availability of advanced digital printing machines, UV technology coupled with availability of innovative special effects inks. Digital printing is now quicker, cheaper, produces better quality images and offers a number of special applications. But advanced digital printing with high level of automation is not everybody's cup of tea. Having advanced machines in place is not sufficient to run a profitable digital printing business. Because not only does the set-up process take considerably longer than other techniques, but being able to truly master printing high quality images using the digital printing process also takes much longer, because there are a number of variables involved. Today, there exist different systems designed to help the digital printers to achieve better result. But it revolves around the simple concept or standardization of the entire digital printing process.

KEYWORDS

advancement, digital printing, printing.

1. INTRODUCTION

Development of faster digital printing, in the process, and now digital printing system transformed into a fact by definition, and gradually by including numerous consumers, end-user acceptance, the conversion process, with the basic international consistent, but the printing industry perspective to find the domestic market with international markets are different in foreign countries. But in India the largest number of buyers and successful digital printing with traditional print background is the tradition of Indian enterprises, digital printing applications, they have become an effective complement to traditional printing methods to help business expansion, extended to develop new business, in order to make more profit.

Though, digital printing for more and more attention many large traditional printing companies major economic downturn, the impact of foreign orders by the background, it is also moving against the market trend of buying behaviour, but the overall look of traditional printing companies the growth of traditional printing is much lower than digital printing this emerging industry, and competition is very intense; traditional printing orders The average annual decline began in print, a lot of orders by the networks, the impact of electronic equipment and digital printing, instead.

2. SWOT ANALYSIS

With the invention of modern printing technology, it is possible to make duplicate copies of various documents including rare books and other documents. The development of printing equipment causes the growth in the advertisement and media sector. Digital printing media has left behind the old technique to paint the advertisement by giving a variety and low cost for the printing with easy availability. The rare paintings can be distributed easily to one and all at low cost with visual effects. All that will create new markets, inevitably making other markets obsolete. The choice is clear, but not simple: Businesses must anticipate and respond to these new market segments; they must deliver products and services that meet their needs, or lose market share. Digital printing industry is at infancy in India at large with exception at metropolis. The consumers of Digital Printing Industry can be grossly bifurcated in Individual Consumers and Institutional Consumers but this segmentation is not precise. There exist strengths, weaknesses, opportunities and threats to crystallize various precise segments which would aid the marketer in targeting and positioning in Digital Print Industry.

STRENGTHS

a) Automation and UV technology: There are many digital printers whose business has doubled or tripled over the years ever since they switched over to automation along with UV. So, semi automatic and fully automatic digital printing machines are now making inroads into Indian digital printing industry in a big way. In the last decade, from a predominantly manual printing process there has been a big shift to semi-automatic and now fully automatic printing machines. Going by our own company's sales performance, there has been steep increase in the number of digital printing machines (and UV curing machines) sold in the last couple of years than it was five to ten years ago. Also, a noteworthy transformation is that there has been quantum leap in the number of visitors to our pavilions at various printing industry exhibitions than it was 5-10 years ago. That's because digital printing not only involves low investment which is a big advantage for those wanting to join the digital printing business, but also there has been widespread applications of this versatile process and greater awareness about the immense benefits of and need for automation.

b) 'Quality' improvement: Quality in digital printing seems to have come a long way. Today, with automatic precision machines, it is possible to get a result that years ago would have been a dream.

c) New trends: There has been a growing trend of offset printers/packaging companies setting up in-house digital printing unit instead of outsourcing. There are many digital printers who have set up digital printing units to meet the market demand for 'total print solution'. Digital printing is the perfect complement to offset and it works in tandem to help generate more business.

WEAKNESSES

a) Education – lack of knowledge: What's the use if digital printers have fully automatic digital printing line without having a proper knowledge? In digital printing industry there is not only lack of 'knowledge' but also lack of 'knowers of knowledge'. In spite of this drawback, over the years, digital printers have made drastic improvements due to their sheer hard work and inclination to learn from self help, by reading technical articles, attending exhibitions, seminars etc. The technical education think tanks in India should really make an immediate analysis of the printing education offered in various institutes which is MINUS "advanced digital printing", they touch upon only some basics and outdated elements of digital printing especially when the Indian digital printing is adopting automation in a big way and the need for trained digital printing professionals is shooting up. In the recent past, there has been a growing trend of offset printers embracing digital printing, whereas the printing institutes emphasizes more on offset and other printing technology.

OPPORTUNITIES

a) Applications, unlimited: Digital-printing is a fantastic technology that is used by many industries with so many old, new and not yet discovered applications – both flat (plastics, cloth, metal, thin to thick papers, sunpack/sunboard, rubber, leather, wood, glass, footwears, PCBs, ceramics, etc) and non-flat substrates, by using appropriate machinery and inks. Further, this process is also widely used in packaging, labels, Smart-cards – the list of digital printing application is endless.

b) Growing trend: What was started as Spot UV – matt and gloss – today with the availability of various UV special effects, digital printers have now great chance to excite consumers. The range and variety of effect is extensive and it provides the marketer, print buyer and designer with a number of exciting possibilities.

c) Use of non-paper substrates: Continuous advancements and developments in polymer technology, expertise and cost-effective manufacturing, plastic substrates are replacing traditional materials in many fields (environmental conditions apply!). These include: PVC, polypropylene, HIPS, lenticular films, polycarbonate etc. Polypropylene sheets are extensively used for blister packaging, cardboard boxes, etc. Preferred by digital printers because of its low density

and very economical cost, polypropylene also finds application in disposable containers, embossing, gift box making out of clear sheets, freight packaging, etc. There all sheets are the best suited for digital printing.

THREATS

a) Manual digital printing: If digital printers are catering to industrial printing they should immediately dump manual digital printing tables as there are strict quality and delivery requirements in industrial segment. There are numerous digital printers who have switched over to automation due to all side effects of manual digital printing – it is tedious, laborious, time consuming, wastage-ridden. Many international experts believe that India lags behind several decades in digital printing but it is not too late.

b) Use of out-dated methods: Wooden frames, nylon white fabric instead of polyester yellow fabric, lack of standardisation in digital making although it is well known fact that digital is the heart of printing.

3. CONCLUSION

As digital print media is an area of experimentations, it is working hard to capture semi urban areas particularly. The emerging digital print market is challenge to consumer like photographers considering that they have to give the free sample to them before the actual work for such consumers making mistake is the risk where quality should not be given to short term financial returns. The cycle of changes is too rapid hence quality with optimum cost needs to be an essential part of digital print services to avoid the risk of losses. Perhaps due to these reasons there is a growing trend in India that more and more industrialist are now setting up their own digital printing units like tiles and ceramic industry, electronic industry, leather industry, garment industry, packaging and offset industry and many more who earlier used to outsource.

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A STUDY ON THE IMPORTANCE OF CORPORATE SOCIAL RESPONSIBILITY IN INDIAN COMPANIES

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ABSTRACT

Today's world is competitive so in order to succeed in the market companies should be able to retain their brand names and sustain productivity. They should be responsible to the society. So the concept of Corporate Social Responsibility (CSR) is gaining importance in these days. It helps a company to get more profit, less operational cost, improved productivity, improved brand name and brand image and customer loyalty. Companies which are not able to make use of this concept can get into mass-corruptions or frauds or scandals etc. So now a days CSR becomes a factor that can never be avoided. Indian Companies should not only concentrate on profit making but also on the welfare of the people.

KEYWORDS

productivity, brand image, loyalty, frauds, corporate social responsibility.

INTRODUCTION

A company is an artificial legal person created by or under a law and have a separate legal entity, perpetual succession and a common seal. It can sue or can be sued by any party. It is an association of individuals who come to achieve some goals. Goal of a company will be different from others. However all seek to maximize their profits. Earlier all the companies concentrated only on the same. Nowadays they have started recognizing the fact they can earn more profits only by fulfilling their responsibilities towards the society. The responsibility of a company towards the society is referred to as Corporate Social Responsibility. A society is a collection of many people like employees, consumers, stakeholders and the general public. A socially responsible company is supposed to be accountable towards the different sections of a society and can ultimately get improved productivity, improved brand name and brand image and customer loyalty and less operational cost.

A company not practicing the Corporate Social Responsibility can ultimately fail. Such a company will not do misappropriation or embezzlement of cash, goods or accounts or many type of frauds. It is not supposed make use of the concept of window dressing. Satyam Computers scandal is a very good example in this regard. So it is better to focus more on meeting the responsibilities towards the society in an efficient and effective manner. Socially responsible companies will make optimum utilization of resources in the environment for doing their day to day operations. It will also install and utilize proper errors and fraud detection systems and will appoint an auditor(s) to control manipulation of cash, goods and accounts. He/she should have good knowledge about using different audits for the upliftment of the society.

The companies of India are now aware about the relevance of Corporate Social Responsibility and have decided to make use of this concept. The companies practicing this concept are increasing day by day in India. It can help a company to make India a developed country by following some ethics. The present study examines about the importance of Corporate Social Responsibility in Indian Companies by making use of two case studies of Tata Steel Limited and Maruti Suzuki India Limited.

IMPORTANCE OF THE STUDY

The concept of Corporate Social Responsibility is gaining more importance in India. Companies are able to do proper risk management, cost savings and are able to make more profit only by being socially responsible. It helps shareholders to get adequate and reasonable returns. Proper welfare measures, security schemes and other satisfaction and productivity improvement measures are provided to the employees. Consumers are able to get novel products at reasonable prices without any kind of adulterations. After sales services are given to them and their complaints are solved quickly. Social responsiveness provokes a company to offer good employment opportunities to the unemployed Indian citizens and thereby promotes balanced regional development. It also tries to protect environment and preserve ecological balance. Social awareness programmes like AIDS awareness, education campaigns, free medical camps and other socially beneficial programmes are also conducted. Companies should be responsible towards the society by catering to the needs of the different sections of the society and can ultimately gain more profits.

OBJECTIVE OF THE STUDY

The current study is conducted to know more about the Corporate Social Responsibility practices of two Indian Companies namely Tata Steel Limited and Maruti Suzuki India Limited

CASE STUDIES**1. TATA STEEL LIMITED**

Tata Steel Limited, one of the biggest steel manufacturing companies in India conducts its day to day operations by being socially responsible towards the society and respects human dignity. It aims for the progress of the community people and creates long term values for all stakeholders by serving them globally. It will

allocate at least 3 percent of its net profits before taxes of the preceding 3 years for the Corporate Social Responsibility Practices. The surplus generated by carrying out Corporate Social Responsibility Practices will be used only for the same and not for any business activities. The company is interested in carrying out the developmental activities in rural as well as urban areas in the states in which it is located. It also focuses more on socially and economically marginalized people like women, girl children and scheduled castes and tribes. A large part of the Corporate Social Responsibility Practices is implemented a Corporate Social Responsibility in-house department and through many societies sponsored by Tata Steel Limited It will make partnerships with the trustworthy individuals or a consortium to design, review and implement funds for the Social Responsibility Projects. Tata Steel Ltd comprises of a multi-tiered mechanism for practicing Corporate Social Responsibility namely a Corporate Social Responsibility Committee, a Corporate Social Responsibility Steering Committee and a Corporate Social Responsibility Advisory Council. The Corporate Social Responsibility Committee will manage and review Corporate Social Responsibility practices and prepares an annual business stating the resource requirements and allocations across various interventions and locations. An Apex Corporate Social Responsibility Steering Committee is supervised by the Managing Director and comprises of the senior management team. The committee conducts quarterly review of the activities of the company and evaluates achievements of the company against the targets. The Advisory Council consists of renowned and well experienced people. The company focuses on education, health, livelihoods, rural and urban infrastructure, sports, disaster management, environment ethnicity etc. It also follows six guiding principles like impact, partnerships, affirmative action, volunteerism, communication and innovation. The Corporate Social Responsibility plans can be changed according to the recommendations of the Corporate Social Responsibility Committee. The Committee also recommends to make donations for social causes.

2. MARUTI SUZUKI INDIA LIMITED

Maruti Suzuki India Limited, the leader in the Indian Automobile Industry focuses on developing and implementing pertinent Corporate Social Responsibility practices to create a positive impact on the mindset of the community people. The Company concentrates on education, skill development village development and road safety. Maruti Driving Schools and Institutes of Driving and Traffic Research were started to give training to the people. It strives to get maximum stakeholders and on value creation. It offers many educational scholarships to the weaker sections of the society. Proper finance and insurance facilities are also arranged by the company. The customers can change their used cars with the introduction of a new service of Maruti Suzuki India Ltd known as Maruti TrueValue. Accessories like alloy wheels, body cover, carpets, door visors, fog lamps, stereo systems, seat covers and other car care products are also provided by the company. Lease and fleet management solutions are given to Gas Authority of India Ltd., Doordarshan, National Stock Exchange of India etc. The Board make sure that the company is allocating at least 2 percent of the average net profits earned during the three preceding financial years for Corporate Social Responsibility practices and can make necessary changes. The unutilized amount will be invested in the Corporate Social Responsibility Fund created by the Company. It will utilize the surplus funds only for meeting the expenses of Corporate Social Responsibility practices. It will make partnerships with trusts or foundations, NGOs, registered societies etc. to implement Corporate Social Responsibility. It will also seek guidance from experts, and consultants etc. to develop and implement Social Responsibility practices. A Corporate Social Responsibility committee with one chairman and two members and a Corporate Social Responsibility Coordinating Team will be developed by the Company Board. The company is also supposed to report about its Corporate Social Responsibility practices to its shareholders through its annual Sustainability Report, conferences, brochures, etc. Periodical project mentoring and budgeting mechanisms are also employed by Maruti Suzuki India Limited.

FINDINGS

- Tata Steel Limited and Maruti Suzuki India Limited strives to follow employee welfare measures like occupational safety, grievances solving mechanism, good employee employer relationship to raise the productivity of the employees. Equal employment opportunities are provided to the male and female employees. Training facilities are also provided to the workers as a part of employee skill development. Maruti Suzuki Ltd provides good employment opportunities to the unprivileged by giving them training in Industrial Training Institutes (ITIs).
- The companies are able to produce and deliver standardized goods and services according to the tastes and preferences of the customers. The products are having ISO certifications.
- Free medical camps, primary health care services and other healthcare services are provided to the rural people. Tata Steel Limited had conducted more than 5000 cataract services and more than 400000 adolescent health care programmes in 2013-14.
- Adequate scholarships are also given to the school going children. Tata Steel Limited provides Jyothi Scholarships for socially and economically marginalized rural children. Pre-matrix coaching classes conducted by the company also benefitted many children. Maruti Suzuki India Limited also sets a positive environment to encourage more students to go to school.
- Tata Steel Limited also helped to form Self Help Groups at the grass root level. It helped the women from Scheduled Tribes and Scheduled Castes to start their own small-scale enterprises.
- As a part of village development, Maruti Suzuki India Limited constructed adequate number of household toilets, upgraded government schools especially in rural areas and provided pure drinking water and other sanitation measures. Waste water management was done by Tata Steel Limited.
- Both the companies were using optimum resources to produce and deliver standardized products and services at reasonable prices. They concentrated on resource and energy conservation, reduced use of hazardous elements like Co₂, chlorofluorocarbons, recycling of materials, etc. to build good relations with the customers. They also focused on Total Quality Management (TQM).
- Tata Steel Limited is also interested in conducting agricultural development activities. It had created 5032 acres, 92 ponds, 400 takewells, 123 bore wells, 152 irrigation structures and 4 rain harvesting techniques in 2013-14 for the same. It had converted 13000 acres of land into productive in the same year.
- Driving sessions were provided to more than 40000 drivers by Driving School and Institutes of Driving and Traffic Research in 2013-14 at Driver Education Centres, located in Manesar and Gurgaon. More than 4.49 people were also trained in the same year.

SUGGESTIONS

It is seen that Tata Steel Limited and Maruti Suzuki India Limited are doing Corporate Social Responsibility practices. The environment in which the companies operate is dynamic. The needs, expectations etc. of the societal people including stakeholders, customers, employees and the local public should be satisfied by the companies. So the companies should be able to introduce new Corporate Social Responsibility practices and review them periodically to strive in the market Proper and adequate funds and plans should be there. They should be able to recruit well experienced and qualified workforce to conduct market researchers to cater to the needs of the societal people. They should encourage employees and other people to contribute their opinions or suggestions for formulating good social responsibility practices. They can appoint some intermediaries with patience, communication skills and good knowledge to deal, understand and settle the grievances of the people. Demographic profiles and geographical area of the people should be considered for the same. They should never be depressed in terms of difficult times and should work hard without ignoring Corporate Social Responsibility in an efficient manner and should induce other companies also to formulate and implement new Corporate Social Responsibility practices while doing their business operations.

CONCLUSION

The concept of Corporate Social Responsibility should not be ignored by the Companies. A socially responsible company will be interested in meeting its responsibilities towards the different sections of the society and can ultimately earn more profits, brand name and image and can succeed in the market. It can reduce the regional disparities between the rich and the poor by raising the standard of living of the rural mob and can facilitate the economic development of a country. Many Indian Companies are realizing the importance of Corporate Social Responsibility and are practicing the same. It is the duty of the government to introduce and implement adequate rules, policies and regulations for making the companies socially responsible. Misappropriation of cash, goods and falsification

of accounts and frauds is not a good practice. It is against the concept of Corporate Social Responsibility. Violation of Corporate Social Responsibility activities may lead to the shutting down of companies So they should serve the society first and can thereby earn more savings, brand image and profits.

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