

Customer Relationship Management in Indian Banking Industry- Conceptual Framework

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Abstract

Banks are in constant interaction with customers. A winning and proven strategy for the banking industry is to put your customer in the center of your business model and make your customer the focus. To build customer loyalty, and ultimately customer protagonism, you must render a superior customer experience. CRM (Customer Relationship Management) and E-CRM (Electronic Customer Relationship Management) is an opportunity that banks can avail to increase advantages by developing actual relationships with their customers. Trust and Convenience is a major benefit provided to the customers of the banks. E-CRM improves and maintains transactions security of the customers. On account of factors such as rise in the depositor base of banks and an increasing tendency among the new generation banks to diversify into web- enabled services, the number of net bank registrations has sky-rocketed. World- wide trend shows that net banking is perceived as a convenient and fast way of doing banking business and is fast gaining grounds. This paper is outcome of a review of various research studies carried out on Customer Relationship Management and Electronic Customer Relationship Management. This paper examines importance of e-CRM and various techniques of e-CRM in banking institutions in India. Many companies, organizations, and communities in India are beginning to take advantage of e-CRM.

Keywords: E-CRM, Customer, Bank, Services, Managemet

Introduction

CRM has been one of the most talked subjects recently in corporate circles. It is a strategy used to learn more about customer's needs and behaviours in order to develop stronger relationships with them. Over all good customer relationships are at the heart of business success. The concept of CRM has been a core concept which has attracted all facets of business. CRM has relevant and demanding applications in service marketing. Retail banking and financial services have also not been an exception to this phenomenon.

Customer relationship management (CRM) is a business strategy that aims to understanding, anticipating and managing the needs of an organization's customers as well as potential customers. It is a journey of strategic, process, organization and technical change whereby a company seeks to better manage its own enterprise around customer behaviours. It entails acquiring and deploying knowledge about one's customers and using this information across the various touch points to balance revenue profits with maximum customer satisfaction.

CRM is a management approach that seeks to create, develop and enhance relationships with carefully targeted customers to maximize customer value, corporate directly or indirectly with production processes. It won't be long before they become valuable CRM stakeholders. CRM is a comprehensive approach which provides seamless integration of every

area of business that touches the customer – namely marketing; sales, customer service and field support-through the integration of people, process and technology, taking advantage of the revolutionary impact of the Internet more effectively. An enhanced relationship with one's customers can ultimately lead to greater customer loyalty and retention and, also, profitability.

“CRM is the process of utilizing detailed information about individual customers & carefully managing all the customers' touch points with the aim of maximizing customer loyalty.” [KOTLER]

Customer Relationship Management (CRM) is a strategy and business process by means of which firms acquire, manage and retain customers.

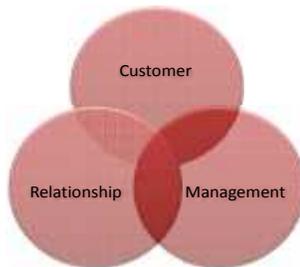
It is a customer centric business strategy with the goal of maximising profitability, revenue and customer loyalty by focusing activities towards the customer. CRM is a shift from traditional marketing as it focuses on the retention of the customers in addition to the acquisition of new customers. CRM works by gathering information about opportunities and providing superior customer service. CRM is a business philosophy and set of strategies, programs, and systems that focuses on identifying and building loyalty with the customers.

Components of CRM

CRM consists of three components

- Customer,
- Relationship, and
- Management

Components of CRM



Customer: The customer is the only component of a company's business on which the growth and sustainability of the company depends upon. A customer is the entity that consumes products and has the ability to choose between different products/services. An ideal customer is which generates revenues and hence the profits of the company with very little inputs.

Relationship: The relationship is the two way communication process between a company and its customers. The relationship can be short-term or long-term, continuous or discrete, and repeating or one-time.

Management: CRM is not only concerned with the marketing function. Rather it involves continuous corporate change in culture and processes. The customer information collected is analyzed by the corporate team, which leads to development of such activities that take advantage of the information and of market opportunities available.

Thus, CRM involves the following:

- Organisations must be customer focused.
- Organisations must be prepared to adapt so that it take customer needs into account and delivers them.
- Market research must be undertaken to assess customer needs and satisfaction.

CRM Process:

1. Collecting Customer Data
2. Analysing Customer Data
3. Identifying Target Customers
4. Developing CRM Programs
5. Implementing CRM Programs

Electronic Customer Relationship Management (E-CRM)

The E-CRM or electronic customer relationship management covers all the function of CRM by using the net environment i.e., intranet, extranet and internet. Electronic CRM pertains all kinds of managing relationships with customers with the use of information technology (IT). E-CRM is corporate using IT to integrate internal organization resources and external "marketing" strategies to understand and fulfill their customers wants and needs. Comparing with traditional CRM, the integrated information for E-CRM intra-organizational collaboration can be more efficient to communicate with customers.

$$E-CRM = Old CRM + Internet$$

Most sectors of the financial services industry are trying to use E-CRM techniques to achieve a variety of outcomes.

Techniques of E-CRM:

- Automatic teller machine
- Data Warehousing and Data Mining
- Electronic Fund Transfer (EFT)
- Fax
- Mobile Banking
- Online Banking
- Telephone Banking
- Telex
- Internet
- Inifinet
- Electronic Clearing Services

Automatic Teller Machine is an electronic telecommunication device which renders those services which makes customers capable to perform financial transactions, especially cash withdrawal, without any need of human cashier or clerk of a financial institution is known as automatic teller machine. ATM is also known as an automated teller machine, automated banking machine, cash machine, cash point and cash line.

In modern ATMs, the customer is identified by inserting a plastic ATM card with a magnetic stripe or a plastic smart card with a chip that contains a unique card number. Customer enters a personal identification number (PIN) for providing authentication. Using an ATM, customers can approach their bank deposits or credit accounts in order to make a variety of financial transactions such as cash withdrawals, credit mobile phones or check balances. ATM is also helpful for foreign travellers by providing them the best possible exchange rates. If the currency being withdrawn from the ATM is different from that in which the bank

account is denominated the money will be converted at an official exchange rate.

Not only near or inside the premises of banks, ATMs are also placed in locations such as shopping malls, airports, metro stations, railway stations, grocery stores, petrol pumps and gas stations, restaurants, or anywhere frequented by large numbers of people. Without ATM, customers have to wait for the beginning of their bank's next time of opening hours. Many banks charge ATM usage fees. ATM was originally developed for just cash withdrawals but now it performs many other bank-related functions.

- Paying routine bills, fees, and taxes (utilities, phone bills, social security, etc.)
- Printing bank statements
- Updating passbooks
- Cash advances
- Cheque Processing Module

Data Warehousing and Data Mining

A database consists of one or more than one file that need to be stored on a computer. Databases are stored in a central system rather than on the individual computers of working staff in big organisations. There are many computer servers in a central system. A data warehouse is a set of databases that work together. Without data warehouse it is impossible to integrate data from multiple databases. Data warehouse helps in providing new insights into the data. A data warehouse supports this goal by providing an architect and tools to systematically organize and understand data from multiple databases. The ultimate goal of a database is not just to store data, but to help businessmen in making important decisions based on that data. Data warehouse is also known as an enterprise data warehouse. They store current and historical data for creating analytical reports for knowledge workers throughout the enterprise. A data warehouse maintains a copy of information from the source transaction systems. It is helpful in improving data quality and integrating data from multiple source systems for presenting the organization's information consistently. It is also helpful in increasing the value to operational business applications, peculiarly in customer relationship management (CRM) systems.

Data Mining is the process of analyzing and summarizing data to produce useful information. After storing and organizing all the data in databases, the next step is data mining. Sophisticated data analysis tools are used in data mining to discover patterns and relationships in large datasets. These tools are much more than basic summaries and use much more complicated algorithms. When data mining is applied

in business field, it can be referred as business analytics or business intelligence.

Electronic Funds Transfer is the electronic transfer of money from one bank account to another, either within a single financial institution or across multiple institutions, through computer-based systems and without the direct intervention of bank staff. EFTs are known by a number of names. In the United States, they may be referred to as electronic checks or e-checks. EFT is a system of transferring money from one bank account directly to another without any paper money changing hands. One of the most widely used EFT programs is direct Deposit, in which payroll is deposited straight into an employee's bank account, although EFT refers to any transfer of funds initiated through an electronic terminal, including credit card, ATM, Fedwire and point-of-sale (POS) transactions. It is used for credit transfers, like payroll payments, and for debit transfers, like mortgage payments.

Fax is short name of facsimile. Fax is the telephonic transmission of scanned printed contents of both text and images, normally to a telephone number connected to a printer or other output device. It is also known as telecopying or telefax. The original document is scanned with a fax machine (or a telecopier), which processes the material (text or images) as a single fixed graphic image, converting it into a bitmap, and then transmitting it through the telephone system in the form of audio-frequency tones. The receiving fax machine interprets the tones and reconstructs the image, printing a paper copy. Since the 1980s, most machines modulate the transmitted audio frequencies using a digital representation of the page which is compressed to quickly transmit areas which are all-white or all-black. Fax system have the advantage of reducing costs by eliminating unnecessary printouts and reducing the number of inbound analog phone lines needed by an office.

Mobile Banking is a term used to refer to systems that allow customers of a financial institution to conduct a number of financial transactions through a mobile device such as a mobile phone or tablet. The earliest mobile banking services were offered over SMS, a service known as SMS banking. With the introduction of smart phones with WAP support enabling the use of the mobile web in 1999, the first European banks started to offer mobile banking on this platform to their customers. Mobile Banking refers to provision and advantage of banking- and financial services 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 customised information. With the advent of technology and increasing use of smartphone and tablet based

devices, the use of Mobile Banking functionality would enable customer connect across entire customer life cycle much comprehensively than before. With this scenario, current mobile banking objectives of say building relationships, reducing cost, achieving new revenue stream will transform to enable new objectives targeting higher level goals such as building brand of the banking organization. Mobile banking is used in many parts of the world with little or no infrastructure, especially remote and rural areas. Mobile banking services may include:

Account information

Transaction

Investments

Support

Content services

Online Banking (OLB) is an electronic payment system that enables customers of a financial institution to conduct financial transactions on a website operated by the institution, such as a retail bank, virtual bank, credit union or building society. Online banking is also referred as Internet banking, e-banking, virtual banking. To access a financial institution's online banking facility, a customer with Internet access would need to register with the institution for the service, and set up some password for customer verification. The password for online banking is normally not the same as for telephone banking. Financial institutions now routinely allocate customers numbers, whether customers have indicated an intention to access their online banking facility or not. To access online banking, a customer would go to the financial institution's secured website, and enter the online banking facility using the customer number and password previously setup. Some financial institutions have set up additional security steps for access to online banking, but there is no consistency to the approach adopted. Online banking facilities offered by various financial institutions have many features and capabilities in common, but also have some that are application specific.

- Viewing account balances and recent transactions.
- Downloading bank statements, for example in PDF format
- Viewing images of paid cheques
- Ordering cheque books
- Download periodic account statements
- Downloading applications for M-banking, E-banking etc.
- Funds transfers between the customer's linked accounts
- Paying third parties, including bill payments and third party fund transfers
- Credit card applications
- Register utility billers and make bill payments
- Financial institution administration

- Management of multiple users having varying levels of authority

Telephone Banking is a service provided by a bank or other financial institution, that enables customers to perform a range of financial transactions over the telephone, without the need to visit a bank branch or automated teller machine. Telephone banking times are usually longer than branch opening times, and some financial institutions offer the service on a 24-hour basis. From the bank's point of view, telephone banking minimises the cost of handling transactions by reducing the need for customers to visit a bank branch for non-cash withdrawal and deposit transactions.

Telex is a switched network of teleprinters similar to a telephone network, for the purposes of sending text-based messages. The term refers to the network, not the teleprinters; point-to-point teleprinter systems had been in use long before telex exchanges were formed starting in the 1930s. Teleprinters evolved from telegraph systems, and like the telegraph they used the presence or absence of a pre-defined level of current to represent the mark or space symbols. For this reason, telex exchanges were entirely separate from the telephone system, with their own signalling standards, exchanges and system of "telex numbers" (the counterpart of a telephone number). Telex provided the first common medium for international record communications using standard signalling techniques and operating criteria as specified by the International Telecommunication Union. Customers on any telex exchange could deliver messages to any other, around the world. To lower line usage, telex messages were normally first encoded onto paper tape and then read into the line as quickly as possible.

Internet is a global system of interconnected computer networks. It is a *network of networks* that consists of millions of private, public, academic, business, and government networks of local to global scope, linked by a broad array of electronic, wireless, and optical networking technologies. The Internet carries an extensive range of information. The Internet continues to grow, driven by ever greater amounts of online information and knowledge, commerce, entertainment and social networking. Email is an important communications service available on the Internet. Compared to printed media, books, encyclopedias and traditional libraries, the World Wide Web has enabled the decentralization of information on a large scale. The Internet allows greater flexibility in working hours and location, especially with the spread of unmetered high-speed connections. The Internet can be accessed almost anywhere by numerous means. The Internet allows computer users to remotely access other

computers and information stores easily, wherever they may be. Electronic business (*e-business*) encompasses business processes spanning the entire value chain: purchasing, supply chain management, marketing, sales, customer service, and business relationship.

Infinet means Indian Financial Network. It is a satellite based wide area network using VSAT (Very Small Aperture Terminal) technology set up by the RBI in June 1999. The hub and the Network Management System of the INFINET are located in the Institute for Development and Research in Banking Technology, (IDRBT) Hyderabad (an institute set up by the RBI). A Closed User Group of the member banks of the network called the "INFINET User Group" has been formed to resolve issues of common interest on a continuing basis. Among the major applications identified for porting on the INFINET in the initial phase are e-mail, Electronic Clearing Service - Credit and Debit, Electronic Funds Transfer and transmission of Inter-city Cheque Realisation advices. Later, other payment system related applications as well as Management Information System (MIS) applications are proposed to be operationalised.

Electronic Clearing Services (ECS) is an electronic mode of funds transfer from one bank account to another bank account. It can be used to pay bills and other charges such as telephone, electricity, water or for making equated monthly installments payments on loans as well as SIP investments. It can also be used by institutions for making payments such as distribution of dividend interest, salary, pension, among others. ECS can be used for both credit and debit purposes.

Objectives of E-CRM:

- To Reduce Costs of marketing
- To Improve Accuracy and relevancy.
- To Increase Customer satisfaction.
- To Maintain Customer retention.
- To Enhance profitability.
- To provide good customer service.
- To discover new customers.
- To enhance customer loyalty.
- To help sales staff close deals faster.
- To simplify marketing and sales processes.
- To reduce the costs (like administrative).
- To increase the goodwill and profitability by increasing the customer satisfaction.
- To keep up with every customer's interaction.

Benefits of E-CRM

❖ Benefits to banks

- Healthy Relationship with customers.
- Using e-mail for business communication.
- Personalized services or one to one services.
- Website to market products or services.
- Transaction security.
- Ability to introduce new schemes at a faster rate.
- Decreased administrative costs
- Enhance Bank's Perspective
- Increased sales revenues
- Improved customer service rating

❖ Benefits to Customers

- Interactions with customers and satisfaction.
- Convenience
- Speed of processing the transaction through e-Response
- Service quality.
- Increased convenience
- Trust

Different Levels of E-CRM

The scope of E-CRM can be explained by three different levels:

- Foundational services: This includes the minimum necessary services such as web site effectiveness and responsiveness as well as order fulfillment.
- Customer-centered services: These services include order tracking, product configuration and customization as well as security/trust.
- Value-added services: These are extra services such as online auctions and online training and education.

Failures in E-CRM Implementation

- Difficulty in measuring and valuing intangible benefits.
- Failure to identify the focus on specific business problems.
- Lack of active senior management sponsorship.
- Poor user acceptance.
- Trying to automate a poorly defined process.

CRM and E-CRM in Banking Sector

Over the last few decades, technical evolution has highly affected the banking industry. For more than 200 years, banks were using branch based operations. Since the 1980s, things have been really changing with the advent of multiple technologies and applications. In recent years, banks have moved towards marketing orientation and the adoption of relationship banking principles. The key motivators for embracing

marketing principles were the competitive pressure that arose from the deregulation of the financial services market particularly in India. This essentially exposed clearing banks and the retail banking market to increased competition and led to a blurring of boundaries in many traditional product markets. The bank would need a complete view of its customers across the various systems that contain their data. The idea of CRM is that it helps businesses use technology and human resources gain insight into the behaviour of customers and the value of those customers.

If the bank could track customer behaviour, executives can have a better understanding, a predictive future behaviour and customer preferences. The data and applications can help the bank to manage its customer relationship to continue to grow and evolve. High quality customer service and support was the key to improve retention rates and maintaining good customer relations. In today's competitive environment, companies pay more attention to fulfill the needs of customers. Customer service personnel providing support to customers require operational integration with field service personnel and the sales force. E-

CRM can help in integrating these groups with operational organization as a whole and the sales force.

Conclusion

Though implementing E-CRM in the operational business, banks can improve their services to their valued clients. By implementation of E-CRM banks can improve their regulating and monitoring process. The Government need to pass a bill involves legal provisions relating to piracy, defamation, advertising, taxation, digital signatures, copyrights and trade secrets in the cyber-world and that bill will intend to facilitate e-business by removing legal uncertainties created by new technologies. The final objective of the E-CRM process is to create a powerful new tool for customer retention, customer value, customer acquisition & profitability. Hence, CRM and E-CRM is an inevitable tool of marketing that can be considered as Critical Responsibility of Market with regard to Banks in present context. Hence E-CRM should significantly applicable for banks all over the world.

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Role of Demographic Characteristics on Job Satisfaction: An Analytical Study among the Faculty of Professional Institutes in Madhya Pradesh

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Abstract

Job satisfaction refers to an individual feelings and attitudes towards his/her job. The extent of employee's satisfaction demonstrated how much an individual likes his/ her job. The research study is exploratory in nature. Population of the study comprised of all the faculty members working in the professional institutes in Madhya Pradesh. The sample of the study consisted of 150 faculty members. Minnesota Satisfaction Questionnaire and a small demographic schedule were used to collect data. The statistical package for social sciences (SPSS) was used to analyze data. Findings were made using t-test and one way ANOVA. Results of the study revealed that gender has no significant relationship with job satisfaction whereas age and experience of the respondents significantly influence the level of job satisfaction. Results also indicated that respondents are moderately satisfied with their job.

Keywords: Job Satisfaction (JS), Demographic Characteristics, professional, Organization, Satisfaction

Introduction

The concept of job satisfaction has been becoming popular in the modern work environment. Many previous research studies have revealed that the level of individual's satisfaction with their job is associated with various work related outcomes such as productivity, absenteeism, turnover, burnout, and stress. The primary objective of professional institutes is to bring out the best in their students and help them in making a bright future. Human resource is the most valuable assets of any organization. Organizations strive towards realizing their goals with the contributions given by employees. Employees' satisfaction works as a motivator in enhancing their commitment towards individual as well as organizational goals. Satisfied employees are the most productive and happier employees of the organization. There are many demographic factors which affect the level of satisfaction. In the present research study, researcher made an attempt to explore the impact of demographic factors, namely, age, experience, and gender on the level of satisfaction.

Job Satisfaction

The construct of job satisfaction is popular among both academicians and practitioners. Locke (1976) demonstrated job satisfaction as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences". Satisfaction refers to the fulfillment of individuals' needs which lead to a certain

level of pleasure. Individuals having high level of satisfaction are the most valuable resource of organization. There are many factors which affect the job satisfaction of an employee such as demographic factors, working environment, pay, promotion, supervision, interpersonal relationship, & work itself.

Review of Literature

Bhati et al. (2013) in their study revealed that demographic factors such as age, gender, and experience influence the level of job satisfaction. According to Ghafoor (2012) age is not significantly related to job satisfaction. On the other hand gender and experience influence the level of job satisfaction. Further researcher stated that experienced respondents are more satisfied than less experienced respondents and Male faculty was more satisfied than their counterparts. Kardam & Rangnekar (2012) revealed that there is no significant difference in the level of job satisfaction among different experience group but few components of job satisfaction such as pay level, work, operating procedure, and communication differ among different experience group. Rast & Tourani (2012) reported that no significant difference exist among male and female level of satisfaction with their job. Yapa et al. (2014) in their study among the non-academic staff in university of Ruhana, Sri Lanka, revealed that age significantly affect the level of job satisfaction. Young group of technical staff is more satisfied than older group of technical staff. On the other hand, gender has no significant impact on job satisfaction. In the present study, researcher made an

attempt to find out the impact of demographic factors on job satisfaction of faculty members in the professional institutes.

Objectives

The aim of study is to investigate the influence of various demographic factors (gender, age, and experience) on job satisfaction among the faculty of professional institutes in Madhya Pradesh.

Hypothesis

H01: There will be a difference on job satisfaction between male and female respondents considered for the study.

H02: There will be a difference on job satisfaction between Older and Younger respondents considered for the study.

H03: There exists a relationship between experience of respondents and their job satisfaction.

Research Design

Exploratory Research Design

Population of the study: All the faculty members working in professional institutes in Madhya Pradesh.

Sample of the study: 150 faculty members from different professional institutes in Madhya Pradesh.

Table_1: Profile of the respondents

Demographic Characteristics	Categories	%
Gender	Male	70
	Female	30
Age	25-30 Years	15.3
	31-40 Years	41.3
	41-50 Years	28.0
	Above 50 Years	15.3
Experience	0-5 Years	15.3
	6-10 Years	29.3
	10-15 Years	28.7
	Above 15 Years	26.7

Methods of data collection: Primary data was collected through standard questionnaire. Minnesota Satisfaction Questionnaire (MSQ) short form developed by Weiss, Dawis, England, and Lofquist (1967) was used to investigate individual satisfaction with their job whereas a small schedule was used to collect demographic information of the respondents. Secondary data was collected using books, journals, & Online.

Techniques of Data Analysis: Statistical package for social sciences (SPSS_18) was used to

analyze data. In the present study, researcher used the various statistical techniques such as cronbach alpha reliability test, one way ANOVA, and t-test.

Findings

Cronbach Alpha Reliability Test:

Table_2: showing the reliability of scale

Scale	No. of items	Alpha Reliability
Job Satisfaction	20	.942

Table_2 shows that job satisfaction scale used for the present study is reliable. It showed alpha reliability value .942 which was greater than 0.70 so the scale was fully accepted.

Level of Job Satisfaction:

Table_3: Showing the level of JS of respondents

Level of Job Satisfaction	Frequency	Percentage
Low	7	4.7
Medium	97	64.7
High	46	30.7
Total	110	100

Table 3 showed that with regard to the job satisfaction, out of the 150 respondents, 4.7% fall in the low category; 64.7% fall in the medium category about 30.7% fall in the high category. This indicates that majority of the respondents belonged to the medium category as far as their job satisfaction is concerned.

Hypothesis Testing

H01: There will be a difference on Job Satisfaction between male and female respondents considered for the study.

Table_4: t-test showing the relationship between gender and JS

	Gender	Mean	Std. Deviation	T	Sig.
Job Satisfaction	Male	69.25	12.18	-1.257	.211
	Female	70.00	12.40		

Table 4 showed the value of mean and standard deviation. The mean value experienced by male and female was 69.25 and 70.00 respectively. The t value

obtained was -1.257. This revealed that there were no gender differences as far as job satisfaction is concerned among the respondents considered for the study. Hence, the alternative hypothesis was accepted.

H02: There will be a difference on job satisfaction between Older and Younger respondents considered for the study.

Table_5: Showing the relationship between JS & Age of the respondents

	Sum of Squares	Df	Mean Squares	F	Sig.
Between Groups	3026.858	3	1008.953	7.588	<.001
Within Groups	19414.182	146	132.974		
Total	22441.040	149			

The result of one way ANOVA is shown in table 5. It revealed that significant differences exist among different age group as far as job satisfaction is concerned (F=7.588, p value =<.001) implying that the job satisfaction is dependent on age group of respondents. Hence, the hypothesis (H02) was accepted.

H03: There exists a relationship between experience of respondents and their Job Satisfaction.

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Table_6: One Way ANOVA showing the relationship between JS and Experience of respondents

	Sum of Squares	df	Mean Squares	F	Sig.
Between Groups	3460.073	3	1153.358	8.872	<.001
Within Groups	18980.967	146	130.007		
Total	22441.040	149			

It was found that there was significant difference in the level of job satisfaction due to length of service of respondents (F=8.872, P=<.001).

Conclusion

Employee satisfaction is a critical factor in realizing the goals of any organization. Satisfaction works as a motivator in obtaining the goals. Findings of the study revealed that respondents have the moderate level of job satisfaction. Demographic characteristics: age and experience have a significant relationship with job satisfaction whereas gender has no significant relationship with level of job satisfaction. There was no difference among male and female faculty members as far as their job satisfaction is concerned. Results also indicated that faculties were moderately satisfied with their job. Professional institutes are required to take some initiatives to enhance the level of satisfaction of employees.

Heterogeneous Degradation of Organic Pollutant by Using Ternary Metal Oxide as Photocatalyst

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Abstract

In this paper, visible light assisted degradation of organic pollutants like dye has been briefly reviewed. The method has been used for the degradation of dye is photocatalysis which has been broadly divided into two main categories, homogenous and heterogeneous photocatalysis. In this work the use of lead-chromate (ternary metal oxide) as semiconductor facilitating the photooxidative degradation of organic pollutants has been presented. This semiconductor has been treated by using various parameters like pH, concentration of dye, amount of semiconductor and light intensity on the rate of degradation was observed. A tentative mechanism has also been proposed for the photocatalytic degradation of dye.

Keywords: Photocatalyst, Lead-chromate, Safranin, Organic pollutant.

Introduction

Waste water generated from various activities contains different toxic contaminants, which are harmful for both; flora and fauna. The industrial operation generates wastewater containing various pollutants including dyes. Dyes are considered hazardous to the environment because many of them are toxic to living organisms, directly or through their absorption and reflection of sunlight entering the water, which interferes with the growth of aquatic organisms. Furthermore, they impart colour to wastewater, giving rise to aesthetic issues. Organic dyes are used in a wide range of industrial applications (e.g., textiles, food products, cosmetics and pharmaceuticals), so these are frequently found in wastewaters and are increasingly becoming an environmental problem.

There is a need for developing alternate newer treatment technologies for eliminating contaminants from wastewater. Photocatalytic degradation has a great potential to control aqueous contaminants or pollutants. The photocatalysis is new, fast, convenient and less expensive method for degradation of the dye. Photocatalytic degradation by semiconductors is a new and effective technique for the removal of pollutants from water (Mahyar et al. 2011 ; Shivaraju 2011). The photocatalytic reaction can be further classified into two categories on the basis of physical states of reactants.

(i) Homogeneous Photocatalysis: If catalyst and reactant; both are in the same phases in a photocatalytic reaction i.e., gas, solid, or liquid, then such reactions are named as homogeneous photocatalytic reactions. Practical interest in soluble

catalyst arises from the desire to develop such systems that are more active per metal atom and more selective than their heterogeneous counterparts. Due to the higher activity, the catalyst may perform its role even under milder conditions. Different organic substances and coloured coordination compounds are best examples of homogeneous photocatalysts. By absorption of radiation energy (Vis/UV), one or more components of the system (in excited state) possess geometries, metal-ligand bond orders, acid-base strengths and redox potentials sufficiently different from the corresponding properties of their counterparts in ground state (Balzani et al. 1970; Katul et al. 1987).

(ii) Heterogeneous Photocatalysis: If the catalyst and reactant; both are in different phases in a photocatalytic reaction, then such reactions are termed as heterogeneous photocatalytic reactions. The common case of this kind is a solid photocatalyst in contact with either liquid or a gas phase. Combination of bulk and surface properties reflect the activity and selectivity of this solid photocatalyst. For homogeneous process, the quantity 'specific rate' can be used, as all the measurement in determining the rate of reaction are used in normality, molarity, etc. while for heterogeneous processes, other all quantities are appropriate. So in such case, it is much better to determine rate related to active sites of catalyst. As the determination of active sites is not an easy task and therefore, rate in terms of active sites is considered as a rough approximation.

Some ternary oxides have been used as photocatalyst e.g. La_2CoO_4 , La_2NiO_4 , CeCr_2O_5 , CeCuO_3 , GdCoO_3 , SrTiO_3 , etc. but very little work has been done on the use of PbCrO_4 as a photocatalyst for the degradation of

dyes. Kumar et al. (2012) prepared nanocrystals of europium-doped bismuth tungstate ($\text{Bi}_2\text{WO}_6:\text{Eu}$) by solvothermal method at 180°C for 2 hr. The photocatalytic activity of the sample was evaluated by degradation of rhodamine B under sunlight irradiation. It was observed that photocatalytic activity of Eudoped Bi_2WO_6 showed higher photocatalytic activity in the presence of H_2O_2 .

Kudo et al. (1999) demonstrated photocatalytic O_2 evolution by Bi_2WO_6 from AgNO_3 solution. Tang et al. (2004) reported that Bi_2WO_6 showed not only the activity for photocatalytic O_2 evolution but also the activity of mineralizing both; CHCl_3 and CH_3CHO contaminants under visible light irradiation.

Fu et al. (2006) reported that fluorinated Bi_2WO_6 catalyst can be synthesized by a simple hydrothermal process. The effects of fluorine doping on crystal structure, optical property, photoinduced hydrophilicity, surface acidity and photocatalytic activity of the as-prepared sample were observed in detail. Fluorinated Bi_2WO_6 presented the enhanced photoactivity for the RhB degradation under the simulative sunlight ($\lambda > 290 \text{ nm}$), which could be a synergetic effect of the surface fluorination and the doping of crystal lattice. Bi_2WO_6 micro/nanostructures have been reviewed by Zhang et al. (2005).

Bhati et al. (2011) reported that CeCr_2O_5 nanoparticles with diameter 4.36 nm can be synthesized by a fast and simple microwave method using ceric sulphate tetrahydrate and chromium sulphate as starting reagents. CeCr_2O_5 was synthesized under microwave heating for 6 min without calcining steps. The synthesized products were characterized by X-ray powder diffraction (XRD) and scanning electron microscopy (SEM). The photocatalytic behaviour of nanosized CeCr_2O_5 was also studied spectrophotometrically through decolorization of Yellowish orange and Fast green dyes, common water pollutants from textile industries. In the present work the photocatalytic degradation of Safranin under visible irradiation was studied.

Experimental



Figure 1: Structure of Safranin

0.0357 g of Safranin that the concentration of dye solution was solution. This stock solution was further diluted. The optical density of solution was determined with the help of spectrophotometer at $\lambda_{\text{max}} = 530 \text{ nm}$.

The dye solution was divided in four beakers.

- The first beaker containing Safranin solution was kept in dark.
- The second beaker containing Safranin solution was exposed to light.
- The third beaker containing Safranin solution and 0.10 g lead chromate was kept in dark, and
- The fourth beaker containing Safranin solution and 0.10 g lead chromate was exposed to light.

These beakers were kept for 3 - 4 hours and then the absorbance of each solution was measured with the help of a spectrophotometer. It was observed that the absorbance of solutions of first three beakers remained virtually constant, while the solution of fourth beaker showed a decrease in its initial value. This observation suggests that this reaction requires both; the presence of light as well as semiconductor lead chromate. Therefore, this reaction is a photocatalytic reaction in nature and not chemical or photochemical.

A solution of $2.00 \times 10^{-5} \text{ M}$ Safranin was prepared in doubly distilled water and 0.10 g of lead chromate was added to it. The pH of the reaction mixture was adjusted to 8.5 and then this solution was exposed to a 200 W tungsten lamp at 70.0 mWcm^{-2} .

A typical run has been presented in Table 1 and graphically represented in Figure2.

Table 1: A Typical Run

pH = 8.5
[Safranin] = $2.00 \times 10^{-5} \text{ M}$

Time (min.)	Absorbance (A)	1 + log A
0.0	0.598	0.7767
15.0	0.591	0.7715
30.0	0.542	0.7339
45.0	0.504	0.7024
60.0	0.468	0.6702
75.0	0.462	0.6646
90.0	0.413	0.6159
105.0	0.386	0.5865
120.0	0.357	0.5526
135.0	0.324	0.5105
150.0	0.292	0.4653

Rate constant (k) = $7.67 \times 10^{-5} \text{ sec}^{-1}$

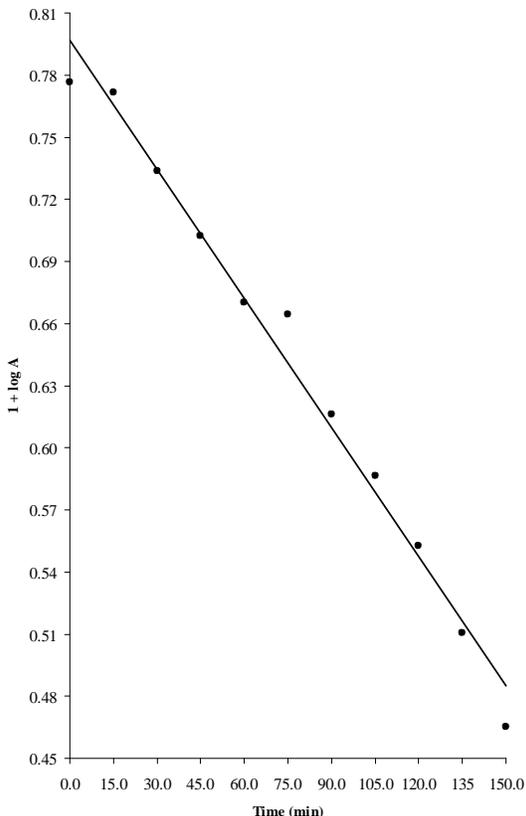


Figure 2: A Typical Run

It was observed that there was a decrease in absorbance of Safranin solution with increasing time of exposure. A linear plot between $1 + \log A$ v/s time was obtained, which indicates that the photocatalytic degradation of Safranin follows pseudo-first order kinetics. The rate constant for this reaction was measured with the help of equation (1).

$$k = 2.303 \times \text{slope} \dots\dots\dots (1)$$

Effecte Of pH

The pH of the solution may also affect the degradation of Safranin. The effect of pH on the rate of degradation of Safranin was investigated in the pH range 5.0 - 9.5. The results are graphically presented in Figure 3.

It has been observed that the rate of degradation increases with increase in pH upto 5.0 to 9.5. Further increase in pH resulted in a decrease in the rate of degradation. The increase in the rate of photocatalytic degradation with increase in pH may due to more generation of $\cdot\text{OH}$ radicals, which are produced from the interaction of OH^- and hole (h^+) of the semiconductor.

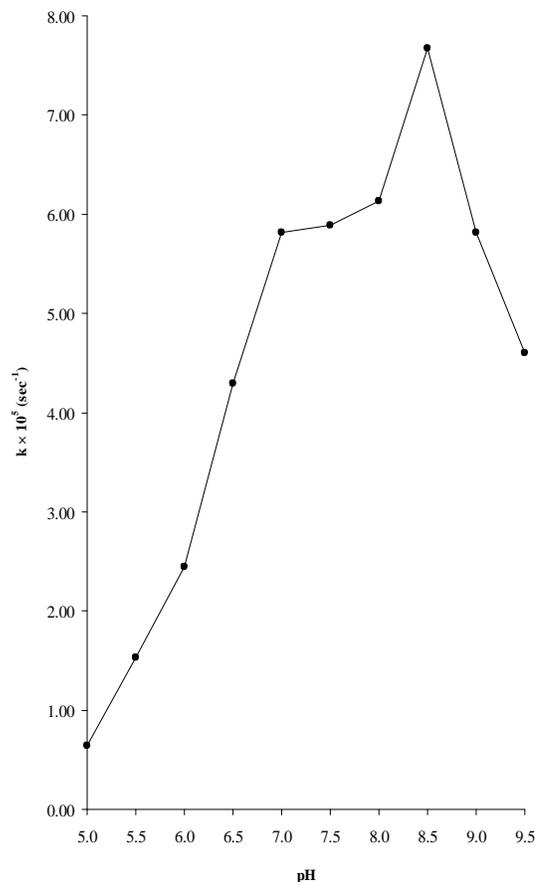


Figure 3: Effect of pH

These $\cdot\text{OH}$ radicals are responsible for the oxidation degradation of dye. After this optimum pH 8.5 the rate of reaction decreases because more OH^- ions are available and these will be adsorbed on the surface of the semiconductor making it negatively charged.

Safranin is a cationic dye so it will have a force of attraction towards negatively charged semiconductor surface; hence, an enhancement in the rate of degradation was observed. On further increasing the pH, there will be no force of attraction between negatively charged surface of the semiconductor and neutral form of the dye. This will result into a decrease in the rate of degradation.

Effect of Dye Concentration

The effect of dye concentration was observed by taking different concentrations of Safranin. The results are represented in Figure 4.

It was observed that the rate of photocatalytic degradation increases with increase in the concentration of dye upto a limit, i.e. $2.00 \times 10^{-5} \text{ M}$

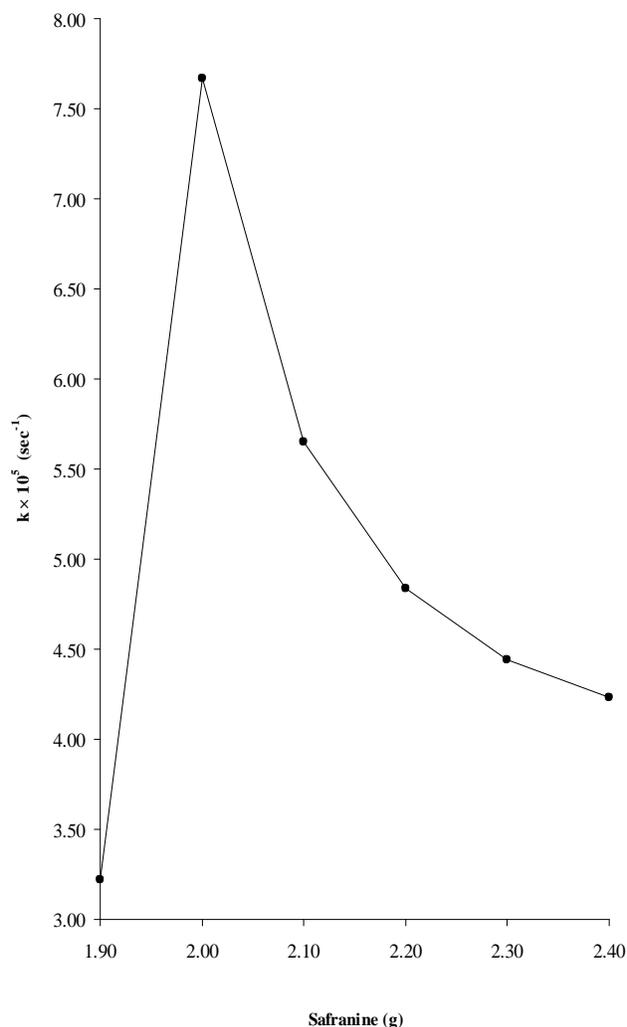


Figure 4: Effect of Dye Concentration

It may be due to the fact that as the dye concentration was increased, more dye molecules were available for excitation and consecutive oxidation resulting in degradation. Hence, an increase in the rate was observed.

The rate of photocatalytic degradation was found to decrease with further increase in the concentration of dye. This may be attributed to the fact that the dye started acting as an internal filter for the incident light and does not permit the desired light intensity to reach the surface of the photocatalyst; thus, a decrease in the rate of photocatalytic degradation was observed.

Effect of Amount Of Semiconductor

The amount of semiconductor may also affect the degradation of dye and hence, different amounts of lead chromate were used. The results are reported in Figure 5.

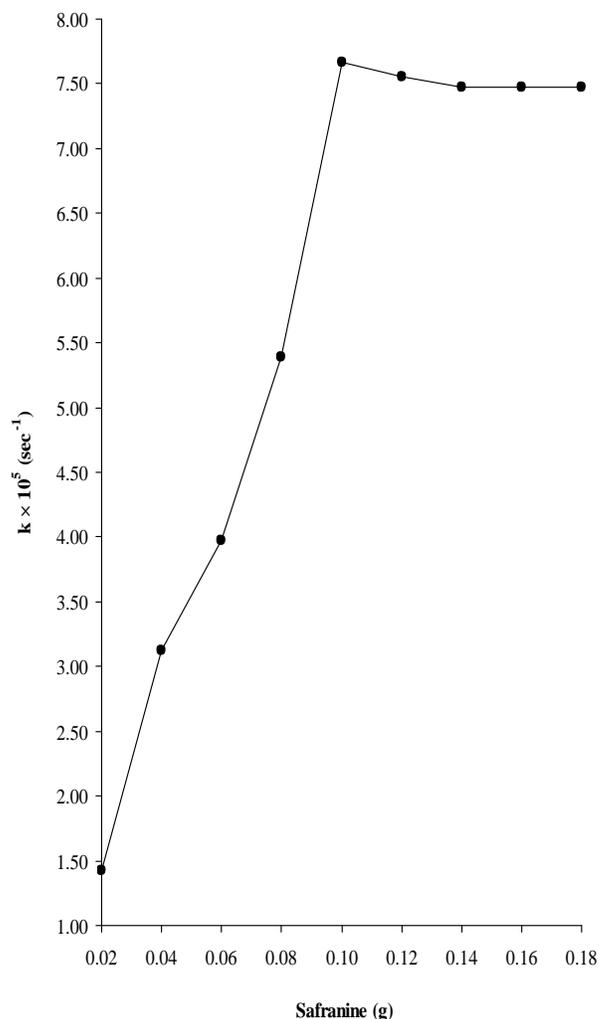


Figure 5: Effect of Amount of Semiconductor

It has been observed that the rate of photocatalytic degradation of dyes increases on increasing the amount of semiconductor (Lead chromate) but it becomes virtually constant after a particular amount i.e. 0.10 g. This may be explained on the basis that as the amount of semiconductor was increased, there was an increase in exposed surface area of the lead chromate, but after a certain limit increase in the amount of photocatalyst will not increase the exposed surface area. It may be considered like a saturation point, above which there is negligible or no effect on the rate of degradation of dye, as any increase in the amount of semiconductor after this amount will only increase the thickness of the layer at the bottom of the reaction vessel and not the exposed surface area.

Effect of Light Intensity

Light intensity was increased, the rate of reaction also increases and maximum rate has been found at 70.0 mWcm⁻². The results are representing in Figure 6.

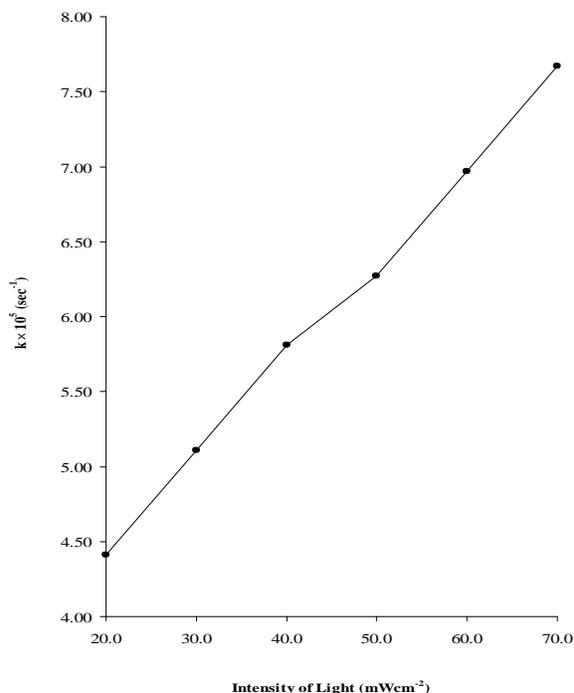
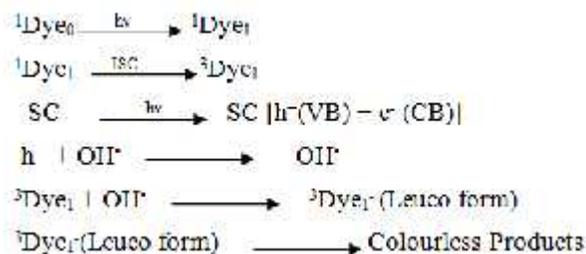


Figure 6: Effect of Light Intensity

An almost linear relationship between light intensity and the rate of reaction was observed. The degradation was accelerated as the intensity of light was increased, because any increase in the light intensity will increase the number of photons striking per unit area of semiconductor powder per unit time. Higher intensities were avoided as these may lead to thermal reactions.

Mechanism

On the basis of these observations, a tentative mechanism for photocatalytic degradation of dye has been proposed as follows:



Dye absorbs radiations of desired wavelength and it is excited giving its first excited singlet state. Further, it undergoes intersystem crossing (ISC) to give its more stable triplet state. Along with this, the semiconducting lead chromate (SC) also utilizes this energy to excite its electron from valence band to the conduction band. The hole in the valence band of the semiconductor is abstracted by hydroxyl ions generating hydroxyl radicals.

These ·OH radicals will oxidize dye to its leuco form, which may ultimately degrade to products. ·OH radical acts as an active oxidizing species in the degradation of dye as the rate of degradation was affected reasonably in presence of hydroxyl radical scavenger (2-propanol).

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Diet and Nutrition: Potential Health Benefits, Caution and Ailments of Eating Natural Food Product in Health and Disease Condition

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Abstract

Researches on growing body show that, natural food product i.e. fruits, vegetables and animal food products are critical to promoting good health. Most of the people need to increase the amount of natural food product, they currently eat every day. Natural food product contains carbohydrates, fats, essential amino acids, vitamins, minerals, fibers and water that may help protect you from acute and chronic diseases. Compared with people who consume a diet with only small amounts of natural food product, those who eat more generous amounts as part of a healthful diet are likely to have reduced risk of acute and chronic diseases, i.e. from simple cold to cancer. In short, what we eat is central to our health. Food acts as medicine to maintain health, as well as prevent and treat disease. Nourishing yourself engages every aspect of your being-physical, social, emotional, mental, and spiritual.

Key words: *Diet, Nutrition, Health, Food, Treatment, Body, Seasonal Food, Homoeopath.*

Introduction

There are varieties of natural and artificial food products. Finding one that you can embrace as part of a healthy lifestyle can have more benefits. Consuming daily doses of good nutrition will help to supply your body with the nutrients it needs and prevent from various kind of ailments.

The Expert Committee of the Indian Council of Medical Research, taking into consideration the nutrient requirements, has recommended that every individual should consume at least 300 g of vegetables (Green Leafy Vegetable : 50 g; Other vegetables : 200 g; Roots & Tubers : 50 g) in a day. In addition, fresh fruits (100 g), should be consumed regularly. Following are the **clinical** health benefits, cautions and ailments of some common natural foods (i.e. vegetables, fruits and animal food products):

A. Vegetables

Fresh Vegetables are rich sources of micronutrients and macronutrients. The micronutrients present are minerals (like iron and calcium) and vitamins (like vitamin C, folic acid, B complex vitamins and carotenoids) whereas, the macronutrients present are complex carbohydrates/ fibre. They contain abundant amounts of iron, calcium, vitamin C, folic acid, carotenoids (precursors of vitamin A) and phytochemicals.

1. Ginger

- *Motion sickness, especially sea-sickness including dizziness, nausea, vomiting, and cold.*

- Safe and Effective Relief of *Nausea and Vomiting* During Pregnancy.
- Even the most severe form of *hyperemesis gravidum*, a condition which usually requires hospitalization and High Blood Pressure
- Ginger contains Anti-inflammatory compounds called *Gingerols* - which helps, in Arthritis-related problems with your aging knees like *Osteoarthritis* or Rheumatoid- arthritis, by reductions in their pain levels and improvements in their mobility, when they consume ginger regularly.
- Preventing everything from the Common Cold and Flu.
- Decreases High Cholesterol Levels.
- Natural mosquito repellent.

2. Garlic

- Natural Insomnia Treatment.
- Garlic is generally classed as a "hot" herb and has been known as a stimulant.
- Hardly seems to be suggestive of a sedative effect.
- If you have a cold and are having *breathing* trouble. Garlic can help to dry up the nasal passages, improving breathing and helping to reduce snoring in some people. This can in turn ease sleep.
- Garlic has powerful *antibiotic* properties and general blood cleanser, system internally to clean itself out and hence reduce *Acne* symptoms.
- Control high Blood Pressure.

- Beneficial effects of garlic on blood pressure come more from the garlic *sulphides* which are not destroyed by cooking.

3. Onions

- Onion contains almost all the nutrients that are required by the body.
- The water content in onion is almost 80%. The nutrients found in onions are carbohydrates, proteins and fats, Minerals like phosphorous, zinc and potassium are present in onions as well. Onion also contains calcium and vitamins.
- Prevention of Asthma.
- Preventing Osteoporosis-peptide -prevent Osteoporosis.
- Reducing Diabetes: lower blood sugar levels-help to increase the production of insulin.
- Prevention of Cardiovascular Diseases, decreases Hypertension and Arteriosclerosis.
- Prevention of cancer-antioxidants.
- Curing Sinus Infections: put the juice of spring onions in the nostril with the help of cotton. However, just smelling cut onion is also helpful in cases of *Sinus Infections*.
- Curing Insomnia: inhale the smell before going to bed-fifteen minutes.

4. Carrot

- Carrot can improve the quality of breast milk, improve the appearance of the skin, hair and nails, it can lower cholesterol and blood pressure (When taken daily).
- Raw carrot contains *beta-carotene*, a strong antioxidant that can prevent cancer.
- Carrot juice when taken everyday prevents bodily infections, improves eyesight, increases menstrual flow, regulates blood sugar, and promotes colon health, because carrot is rich in fiber.

5. Spinach

- Spinach contains *Choline* and *Inositol*, the substances that help to prevent Atherosclerosis, stabilize blood sugar among Diabetics.
- Antioxidant and anti-cancer agent and rich source of Vitamins A and C.
- Anti-aging vegetable, good source of Vitamin K-required for clotting of blood.

6. Oats

- An excellent heart medicine, lowers blood cholesterol, Regulates blood sugar, *prevents inflammation of the skin, Acts as a laxative.*

7. Rice

- Lowers blood pressure
- Fights diarrhea

- Prevents kidney stones
- Clears up psoriasis (A skin disease)
- Contains chemicals that prevent cancer
- Food For all Seasons

8. Flaxseeds: What salmon does for non-vegetarians, flax seed does for vegetarians.

9. Sunflower oil

- Sunflower oil acts as an antioxidant since it is rich in Vitamin E. This property of sunflower oil helps in neutralizing cancer-causing free radicals. Vitamin E in sunflower oil also prevents rheumatoid arthritis, asthma and colon cancer.
- This, in turn, results in reduced risks of heart diseases. Studies have proven the fact that a diet with less quantity of saturated fat substituted with sunflower oil has shown cholesterol reducing benefits. The right balance between polyunsaturated and monounsaturated fatty acids in sunflower oil reduces the cholesterol levels in a person.
- The Vitamin E present in Sunflower oil also helps the skin to retain its moisture. It helps in providing a protective barrier, resisting any kind of infection in pre-term infants. Studies have shown that infants receiving daily skin care by using sunflower oil are less likely to develop any skin related infections.

Caution

- Due to its high content of omega-6 polyunsaturated fatty acids, high consumption of sunflower oil is likely to cause breast and prostate cancer in post-menopausal women.

10. Oysters:

Try oysters for faster hair growth. They contain zinc.

B Fruits

Fruits are nature's wonderful gift to the mankind; indeed, they are life-enhancing medicines packed with vitamins, minerals, anti-oxidants and many phyto-nutrients (Plant derived micronutrients). They are an absolute feast to our sight, not just because of their color and flavor but for their unique nutrition-profile that help human body free from diseases and keep it healthy. Focus on whole fruits rather than juices for more fiber and vitamins and aim for 1½ to 2 servings or more each day. Break the apple and banana rut and go for color-rich pickings.

1. Orange

- Orange is an excellent source of vitamin C and *flavonoids*.
- Good dietary fiber.
- Leave in the *albedo* (the white matter under the peel) -anti-cancer agents.

Health Benefits

- Immune system: stimulates white cells to fight infection.
- Anti-inflammatory and blood clot inhibiting properties.
- Prevents Arterio-sclerosis.
- Cholesterol: reduces the liver's production of cholesterol & Decrease LDLs in our blood.
- Lowers high blood pressure.
- Prevents Stomach ulcer: vitamin C rich foods helps to lower the incidence of peptic ulcers and stomach cancer.
- Constipation: Even though the orange "tastes acidic", it actually has an alkaline effect in the digestive system and helps stimulate the digestive juices, relieving constipation.
- Protect against Viral infections: The abundance of polyphenols have been shown to provide protection against viral infections.
- Damaged sperm repair: An orange a day is sufficient for a man to keep his sperm healthy. Vitamin C, an anti-oxidant, protects sperm from genetic damage that may cause a birth defect.
- Kidney stones prevent: Drinking orange juice reduces the risk of calcium oxalate stones.

Caution

- High intake causes increased risk of heart diseases.
- Excessive consumption of any citrus juices can leach calcium from the body system, causing decay of the bones and teeth.
- Citrus peels contain some oils that may interfere with the effects of vitamin A.
- Excessive mucus build-up in your throat, you could be allergic to oranges.

2. Banana

- Banana is an energy booster.
- Banana contains tryptophan--protein that the body converts into serotonin.
- Serotonin is a hormone that is known to make you feel *Happy* and improve your *mood*.
- Rich source of iron, thus it is helpful in cases of Anemia.

- Good source of Potassium. If you are taking diuretics take 2 bananas a day to prevent the depletion of potassium in the body.
- Stomach ulcer (banana has a natural antacid), Colitis, Digestive disorder, Diarrhea, Constipation (banana is high in fiber), Hemorrhoids.
- The skin of the banana remove warts (cover the warts with the inner part of banana).

3. Apple

- Bone Protection: protects post-menopausal women from Osteo-porosis by increasing bone density.
- Asthma: children with asthma who drank apple juice on a daily basis suffered from less wheezing.
- Children born to women who eat a lots of apples during pregnancy have lower rates of asthma.
- Alzheimer's Prevention: protect brain cells from the of free radical damage that may lead to Alzheimer's disease.
- Lower Cholesterol: The pectin in apples lowers LDL cholesterol. People who eat apples every day may lower their cholesterol.
- Prevention of Cancer: Lung, Breast, Colon, Liver.
- Diabetes Management: The pectin in apples supplies *Galacturonic Acid* to the body which lowers the body's need for insulin and may help in the management of diabetes.
- Weight Loss: women who ate two apples or pears per day lost more weight
- Study shows that by eating 100g of apple can give an antioxidant effect that equal to taking about 1,500mg of vitamin C.
- Apple contains a large amount of minerals and vitamins that can strengthen the blood.
- Prevents the formation of kidney stone and reduces skin diseases.

4. Grapes

- Inactivates viruses.
- Prevent Tooth decay.

5. Papaya

- It is one of the most alkaline foods which help in maintaining the body's alkaline balance.
- It also contains vitamin A, B ad C as well as traces of vitamin D. It is rich in calcium, phosphorus and iron.
- The digestive enzymes papain (enzyme present in papaya) contained in the fruit helps people suffering from constipation, digestive disorders, and kidney stones.

6. Pineapple

- Helps in the digestion of animal and vegetable protein.
- Helps in Acidosis and Dyspepsia.
- Pineapple raises the alkaline content of the blood and helps in getting rid of excess water in cases of edema.
- In bronchitis, pineapple juice has being an excellent medicine in softening the mucus.
- It is also used as a laxative.

7. Dry Fruits

- Valuable part of the diet because they are rich in essential minerals including iron.
- Contain potassium, a mineral needed for healthy nerve function.
- Dried fruit also contain magnesium, an important bone mineral and essential for release of energy from cells.
- Dried fruit contain lots of fibers. Dried apples, figs and apricots are the best sources of fiber, both soluble and insoluble.
- The sweetness of dried fruit comes from natural fructose.
- The fructose contained in dried fruit doesn't cause the blood sugar levels to fluctuate as rapidly as the sucrose and glucose.
- Diabetics can also take dried fruits in controlled amounts because fructose doesn't require the action of insulin to be metabolized.
- When there is no time for a proper meal, dried fruits can be taken without any problems because they keep the energy levels from dipping too low and help replace any essential mineral lost through perspiration.
- heart beat regulation and lower blood pressure.
- Dried fruit helps in relieving premenstrual syndrome and help keep symptoms like depression, headaches.

C Animal Food Product

1. Honey

- Honey is a source of carbohydrates, containing 80% natural sugar -- mostly fructose and glucose. Due to the high level of fructose, honey is sweeter than table sugar.
- The minerals found in honey include calcium, copper, iron, magnesium, manganese, phosphorus, potassium, sodium and zinc.
- Honey has a healthy *Glycemic Index* (GI), meaning that its sugars can be gradually absorbed into the bloodstream to result in better digestion.

- Honey contains natural minerals and vitamins which help the metabolizing of undesirable cholesterol and fatty acid.
- Hence preventing obesity and promoting better health for us.

Honey clinical importance.

- Traditional antibiotic therapy: Kills bacteria.
- Disinfects wounds, ulcers and sores
- Reduces perception of pain.
- Clear sore throats.
- Calms the nerves, induces sleep.
- Relieves diarrhea.

Sugar

- Sugar contains calories which artificially create temporary energy but it is not a good food because it is without nutritive value.
- The use, misuse and abuse of refined sugars (in the shape of candy or in any other form) are a modern nutritional disaster.

Honey V/s Sugar

- Both sweeteners contain glucose and fructose.
- sugar, in the process of manufacturing, the organic acids, protein, nitrogen elements, enzymes and vitamins in the sugar cane are destroyed.
- On the other hand, hydrochloric, phosphoric and sulphuric acids, lime and other foreign substances are added whereas honey, a natural sweetener, subjects only to minimal heating.
- Antioxidant and Antimicrobial properties which are not present in table sugar.
- One tablespoon of table sugar contains 46 calories, honey has 64 calories. Though honey may have more calories.

2. Milk

- Referred as Wholesome Food.
- It contains a whole lot of vitamins and minerals to keep you fit, healthy and strong.
- A glassful of milk contains vitamin A & B for good eye-sight.
- Increasing RBC count, carbohydrates for vitality and energy.
- Potassium for proper nerve function, Magnesium for muscular function, phosphorous for energy release, Protein for body repair and growth.
- Healthy Bones: milk is rich in calcium, helps growth and proper development of strong bone structure.(pregnancy)
- Osteoporosis can be prevented with daily intake of milk.

- Children deprived of cow milk have an increased chance of bone fractures when injured.
- Healthy Teeth: Milk protects the enamel surface against acidic substances. Reducing the risk of decayed teeth and weak gums.
- Skin Care: Milk and milk products are used in a number of cosmetic preparations that help in giving you a 'peach and milk' complexion.
- Slim Body: milk does not gain excess weight.
- In fact milk tends to make you slimmer, as whole milk contains only 4 percent of fat and skimmed milk contains even lesser percent of fat.

3. Eggs

- One egg contains 6 grams of high-quality protein and all 9 essential amino acids.
- Eggs are great for the eyes.
- An egg a day may prevent macular degeneration due to the *carotenoid* content, specifically *lutein* and *zeaxanthin*.
- eat eggs every day lower their risk of developing cataracts

Heart n Eggs

- One egg contains only 1.5 grams of that is saturated fat this fat has negative impact on cholesterol.
- Regular consumption of two eggs per day does not affect a person's lipid profile and may no connection between heart disease and egg
- Regular consumption of Eggs prevent blood clots, stroke, and heart attacks.
- Eggs are one of the only foods that contain naturally occurring vitamin D
- Eggs may prevent breast cancer. In one study, women who consumed at least 1 eggs per day lowered their risk of breast cancer by 44%.
- Eggs promote healthy hair because of their high Sulphur and B12.

Egg and Diseases

- Allergy - Egg is a common allergen in infants, children and adults, producing Urticaria and Asthma.
- Sever Athero-sclerosis - Fats in egg yolk contain saturated fatty acids.
- Gall bladder disease - Fats in eggs causes contraction of gall bladder and this may produce pain and discomfort.

Egg Borne Infections

- Infections are caused by the salmonella group of organisms, giving rise to typhoid fever and gastro-enteritis.

- If eggs are cooked well, these diseases can be prevented.

4. Fish

- Contains Omega 3 fatty acids.
- Inhibits blood clots (anti-thrombotic).
- Reduces blood triglycerides.
- Lowers LDL.
- Lowers blood pressure.
- Reduces risk of heart attack and stroke.
- Lessens symptoms of rheumatoid arthritis.
- Acts as an anti-inflammatory agent.
- Regulates immune system.
- Relieves bronchial asthma.
- Increases mental energy.
- Foods that can Make Our Skin Glow.
- Applying a whole lot of creams and lotions on the skin cannot make it glow.
- It is balanced and nutrient-rich diets that can bring a soft to the skin making it look beautiful.
- Vitamin A, C and E are increasing important because of their antioxidant. It antidotes free radicals damage.
- Damaged collagen causes wrinkles, slacken the skin and can lead to skin cancer.
- Prevented by Vitamin A is found in many green vegetables, egg yolk, fish.
- In vitamin A, can reduce and prevent wrinkles, brown spots etc and bring about improvement in skin texture and tone.
- A combination of vitamin A and beta-carotene can work wonders in protecting the skin from harmful effects of free radicals.
- Vitamin E is an antioxidant. When combined with Vitamin C, it acts as a powerful protective factor against the UVB rays of the sun.
- Vitamin E is present in vegetables, oils, seeds, corn, soy, whole-wheat flour, nuts and some meats and dairy products.

5. Curd

- It contains good bacteria that help your skin look healthy.
- Eczema sufferers can benefit a great deal from a daily intake.
- In Fish Oil, omega-3 fatty acids that reduce skin inflammation and keep it moisturized.
- Reduces hair fall.

6. Poultry

Chicken and turkey provide high quality proteins, essential for growth, repair and maintenance. Skimmed milk, yogurt, egg contains Vitamin B-12 which promotes hair growth and prevents hair loss.

7. Salmon: Omega-3 fatty acids, B12 and iron.

Seasonal Food

Seasonal food refers to the times of year when the given type food is at its peak, either in terms of harvest, nutritional value, medicinal value or its flavour. This is usually the time when the item is the cheapest and the freshest on the market. The food's peak time in terms of harvest usually coincides with when its flavour is at its best. There are some exceptions; an example being sweet potatoes which are best eaten quite a while after harvest

Winter Food

- Proteins, fats, carbohydrates - food also has a thermal nature. it takes a lot of energy to keep the body at the normal temperature during the winter.
- Foods having warming properties e.g. ginger, garlic, most grains like wheat, *jowar*, *bajri*, onions, green chilies, pepper, mustard have a" warming effect on the body.
- Dates, honey and jaggery are sweeteners that have a warming effect.
- Moderately cooked food, especially in winter is better digested than fry and long time cooking as its nutrients are better assimilated, which in turn give warmth and energy to the body.
- Dry fruits have a strong position in the menu during winter because of their warming properties.
- Hot soups with spices like pepper, ginger, garlic and onions are also a popular food Items during the cold season and those who eat non-vegetarian foods can increase intake of eggs, fish, and chicken.

Summer Food

- Just as the body needs more energy to combat the winters, it needs less supply of energy during the summer time. It is a season for light food and lots of fluids.
- This is also the time of the salads and cold soups.
- Cucumbers are known to have a cooling effect on the body.
- Mango and lemon are available in plenty. These have high water content and are cooling in nature.
- Summer food should contain the least oil and fat.
- Radish has a cooling thermal nature. In summers some people suffer from nosebleeds and headaches or body rashes. In such conditions, radish juice is

very useful as it helps in detoxification and cleansing of the body toxins.

- The intake of cool drinks like coconut water, buttermilk needs to be increased.

Monsoon Food

- Spread of digestive disorders including diseases such as jaundice and typhoid.
- Salads; which contain raw vegetables, are one of the likeliest sources of contamination.
- It is therefore, essential that vegetables be washed and cleaned well before being used.

Diet and Homoeopathy

Master Hahnemann's (Father of Homoeopathy) Views: in the Organon of Medicine, 6th edition, 1921, Aphorism §260, Ft note 140: disease causing and maintaining errors in the diet are following:

- Proper hygienic and dietetic measure must be taken before administration.
- During treatment, food substance which having medicinal value, must be removed.
- ***In Acute cases***, Instinctive desires of the body in relation to food and drink should be satisfied.
- These bodily instincts crave chiefly for things that would give *Palliative Relief*.
- Satisfaction of desire seem to interfere with the cure of the disease, it is more than made up by refreshment that follows such Satisfaction and by the superior curative efficacy of the drug.
- ***In Chronic disease*** we have to be more careful of diet.
- The long continued use of many medicinal substances in many cases dulls the susceptibility for them, so that the vital force no more affected there by.

Food permitted

- Beef, Mutton, Chicken are plainly cooked, must not be spoilt or unseasoned.
- Fish moderation only at noon.
- Animal food: like butter or soft boiled egg.
- Vegetables: like Potatoes, Groundnuts, Beets Cauliflower, Prepared Vegetable, Sour, Beans, Rice, Wheat, Oats, Barley, Salads should be cooked properly.
- Fruits, Pure water, Milk, and Butter Milk.

Should be avoided

- Coffee, fine Chinese and herbal teas.
- Beer made of medicinal vegetable substances.
- Fine liquors made of medicinal spices.

- All types of punch.
- Spiced chocolate.
- Highly spiced dishes and sauces.
- Spiced cakes and ices.
- Unripe fruits and frequently acid fruits do not agree with homoeopathic treatment.
- Excessive use of sugar and salt should be avoided.

Conclusion

Man-made/factory-made/synthetic foods or any foods, which have been highly sugared, salted and processed,

are devoid of so many of the nutrients and life-giving substances needed for optimal health. Foods as close to their natural state, or as nature intended them to be consumed, are, in contrast, rich in health-giving nutrients that sustain and energize us. Fresh, raw fruits and vegetables are also full of “Vital-Force” of nature, which along with vital vitamins, minerals and phyto-nutrients lead to a positive, natural state of physical and mental health and vibrancy. In short, what we eat is central to our health. Food acts as medicine to maintain health, as well as prevent and treat disease. Nourishing yourself engages every aspect of your being—physical, social, emotional, mental, and spiritual.



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Serving International Student Customer

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Abstract

International student's demands are ever changing. International student customers are presenting challenge in front of international universities / institutions to keep up with pace and offer tailor made courses to them. Social media is playing a major role in higher education and it is making international universities/ institutions quality conscious. It becomes essential on part of international universities/ institutions to conduct rigorously research in order to match the ever changing tastes and preferences of international student customers.

Key words: International student customer, international student expectation, international student satisfaction, student exchange program.

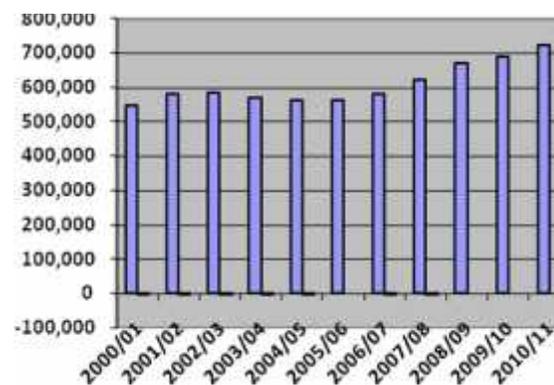
“Customer reactions to service are mainly governed by emotions- what you get is determined by what you give.”- Chris Daffy

Introduction

Globalisation and liberalization post year 1991 resulted in flexibility of exchange of knowledge and capital. This exchange was not just limited to manpower, capital, technical knowhow, it gave wings to education and India spread its knowledge to world and the same way welcomed thoughts, views and opinions on higher education from various parts of the world. Academicians from all parts of the world got platform to discuss contemporary issues with the help of advanced technology and communication techniques. Exchange of knowledge ultimately resulted into faculty development programs and student exchange programs. Under such programs, students from one country enrolled in a particular program completed two semesters from that university and undertook remaining two semesters from the Host University or institution located abroad. Such students wither went to such universities or institutions or undertook virtual classes. For instance, For example, time duration of study abroad program for US students studying abroad is mentioned below:

Short term (summer or eight weeks or less)
Mid length (one or two quarters or one semester)
Long term (Academic or calendar year)
(<http://www.iie.org/en/Research-and-Publications/Open-Doors>)

Table 1: Trend showing international students in United States of America



Source:
(<http://www.iie.org/en/Research-and-Publications/Open-Doors>)

As per data collected from National Center for Education Statistics in the year 2010/11, the number of international students in the U.S. increased to 723,277 students making it a 32% increase since the year 2000/01. This increase was due to international student satisfaction and various academic facilities available to international students at the university/ institution. Need for study abroad or student exchange programs was felt due to emphasis of holistic approach to be adopted by a manager or an employee. All organizations of the world are thriving to go global current or future employees and managers of such organization are required to develop global mindset, learn different languages, know different cultures, visit various places and above all possess real time experience in dealing with people from different

cultures. Students travel abroad to gain most updated knowledge and practical training in specific areas of interest such education may be better in other countries but not in their own country. Mentioned below is the table containing top fields of study for international students at American Universities.

Table 2: Top fields of study for international students at American universities/ institutions.

1	Business and Management
2	Engineering
3	Math and Computer Science
4	Physical and Life Sciences
5	Social Sciences
6	Fine and Applied Arts
7	Health Professions
8	Intensive English Language
9	Education
10	Humanities
11	Agriculture
12	Other Fields of Study

Source:
(<http://www.iie.org/en/Research-and-Publications/Open-Doors>)

Similarly, mentioned below is the table containing top fields of study for American students at international universities/ institutions.

Table 3: The top fields of study for American students for study abroad program.

1	Social Sciences
2	Business/ Management
3	Humanities
4	Fine or Applied Arts
5	Physical/ Life Sciences
6	Foreign Languages
7	Health professions
8	Education
9	Engineering
10	Math/ Computer Science
11	Agriculture
12	Other Fields of Study

Source:
(<http://www.iie.org/en/Research-and-Publications/Open-Doors>)

Study abroad or student exchange programs demand international universities and academic institutions offering such programs to be open for organizational change. “According to Hemsley-Brown and Oplatka (2006), higher learning institutions (HEIs) are widespread and well-established as a global phenomenon, especially in major English-speaking

nations such as the United States (US), United Kingdom (UK), Australia, Canada and New Zealand. In the US for example, HEIs are undergoing substantial change in terms of the way colleges and universities are functioning because of factors such as demographics, globalization, economic restructuring and information technology” (Padlee, Kamaruddin & Baharun, 2010). Such change is required because demands of international students are ever changing and they feel satisfied only when their demands get fulfilled. Earlier students’ demands were confined to one sided teacher student relationship, a place of learning, obtaining degree, scholarships, etc (Tricker, 2003). Concept of higher education changed completely post year 2000. Students started considering themselves as customers of universities or institutions. This concept is usually not accepted by faculty members but university/ institution administration welcome this concept to ensure existence of the university/ institution. There is a never ending debate on considering students as customers of university or institution. When we talk about international student as customer, we refer to exchange theory of marketing (Bagozzi, 1974). This exchange theory says that international students are paying tuition and other related fee for the product which is degree. They are acquiring the degree to gain knowledge in their area of interest. Therefore, the international students are entitled to get good grades for their input that is effort, time and tuition. This purpose of international student customers is solved only when best academic services are provided to them by university or academic institution offering student exchange program or study abroad program. As per the survey conducted by Delucchi and Korgen (2002), 41-item questionnaire were floated to sociology undergraduates. It was found that, 43% agreed that “If I’m paying for my college education, I’m entitled to a degree”; and 53% agreed that it is the instructor’s responsibility to keep their attention in class. These findings led the researchers to conclude that students believe that “higher education operates as a consumer-driven marketplace.”

“Customer behaviour in higher education is aimed to comprehend who the real customers are and who the other partners involved in this kind of service delivery are. The traditional way was to consider the student as the product of the university. But the educational marketing started to comprehend who the actual customers of the universities are.” (Enache, 2011, Finney & Finney, 2010 & Eagle & Brennan, 2007) Not just international students are the customers of the university/ institution offering student exchange program or study abroad program, there are other stake holders also, for example, government because it provide funds, alumni because they contribute in building the brand name of university and institution and act as promoters of student exchange program or

study abroad program in their respective countries, parents of international students and employees of university/ institution administration offering student exchange program or study abroad program.

The expectations of student customers include more emphasis on vocational education, tuition, campus life, safety, library services, mess facility, accommodation, more and more involvement of students or student representatives in decisions related to delivery of education and development of course content, use of latest technology for lecture delivery, interactive classes promoting involvement of students, feedback of students' learning experience, quick action on students' complaints, transparency of records and reports, availability of faculty and university staff, quality of course content and faculty.

International students expect university/ institution administration in being honest with respect to whether their needs can be met or not. Based on these expectations international students make a decision on selecting the university or institution for study abroad. Major role in taking the decision is however played by social media and accreditation of university/ institution. International students and their parents interact with alumni on social media. For example, university page or link to alumni page of the university is available on social networking websites like Facebook, Twitter etc. These interested parties can view pictures and interact with concerned persons and get a feedback about program and university/ institution and on the basis of that make up their mind for enrolling for the program. Word of mouth, a friend's recommendation or positive comments of current international students and alumni builds trust of prospective international students and this kind of interaction promotes the program better.

"A decision-making process by potential student is often influenced by "significant others" such as friends, parents, counselors, other students, teachers and university admission officers, internet, mass media and sometime the league tables." (Padlee, Kamaruddin & Baharun, 2010)

Such demands or expectations of students from universities/ institutions resulted in making higher education system more dynamic, flexible, transparent and student support oriented. According to Desai, Damewood, and Jones (2001) "teaching in a higher educational setting is analogous to service delivery in the business sector. Students, as consumers of professorial output, have needs and wants, which, if better understood, should result in an improved educational experience." Expectations of students should be better understood and regular research must be conducted to study the taste, preference and expectations of international students from the

university/ institution and the program offered. International students will derive satisfaction from the program only when their expectations will get satisfied. According to Sander et al. (2000) "HE has typically adopted an 'inside out' approach – with us on the inside assuming we know what students expect and want from HE. However, successful service industries have been shown to think 'outside in'. They research what customers expect of the service and then work to provide the service that meets those of customer expectations."

As per Zeithaml et al. (1993), international students' levels of expectations are dependent upon four main antecedents, such as, explicit service promises (advertising, personal selling, contracts and other communications), implicit service promise (tangibles, price), word of mouth (personal, expert) and past experience.

"For a student, selecting and enrolling in an overseas university are usually a highly involved process with a great reliance on one's own expectation of the service quality of the university. The ability to help minimize dissatisfaction and increase retention of students especially from Asia is an important marketing goal for most universities today. By understanding how Chinese students form their expectation, universities are able to better market and communicate to the consumers in these countries more effectively. Furthermore by measuring and evaluating the impact of explicit and implicit service promises, the ability to manage consumer's zones of tolerances is greater. For instance, with the knowledge that explicit service promises can drive both predicted and desired expectations higher than implicit promises, an Australian university trying to recruit Chinese students could aim to center their advertisements around past experiences of previous Chinese students (instead of focusing on price or location). This emphasizes the need for universities to pay attention on the importance of their communication messages as it could drive up expectations (that ultimately would not be met and could lead to dissatisfaction) or even create very poor expectations according to the information that they are disseminating to these students. Finally, for higher education marketers, the first and possibly most critical step in delivering quality service is knowing what the customer expects (Zeithaml et al., 1990). Understanding a student's expectations prior to the choice of university would perhaps provide educational marketers a better insight for increasing enrolment, reducing disappointments upon arrival and more effective use of marketing strategies" (Prugsamatz, Pentecost and Ofstad, 2006).

International student customer gets dissatisfied if their expectations from the program or university/ institution do not get fulfilled. International students reach the

extreme degree of dissatisfaction when they get so frustrated that they are not less than a terrorist. In such situation, they are ready to do whatever damage they can to the university/ institution's reputation and brand image. International student customers reach this stage when they are completely disappointed with the university/ institution administration, faculty and study abroad program. This stage of dissatisfaction is the result of minor dissatisfactions or disappointments that an international student customer cumulates in his mind and gradually this minor irritation becomes the final reason for explosion. As compared to this, at a lower degree international student customers may suffer silently from the disappointment but do not openly express their feelings.

This stage is termed dangerous because the university/ institution administration is not even aware of the reason behind international student customers' dissatisfaction and they do not get a chance for improvement. The moderate stage of dissatisfaction is when international student customers get disappointed, suffer, get frustrated and complain against the problem they face to the university/ institution administration.

(Daffy, 1999) Result of all these stages is protest by international student customers against the university/ institution administration, involvement of such students into unethical practices and damage to physical property and brand image of the university/ institution by these students.

Table 4: Stages of dissatisfaction of international student customers:

Stage 1:	Discontinue study abroad or student exchange program and look for other options.
Stage 2:	Tell other international students about bad experience at university/ institution (2 to 3 times more than the satisfied international student customer referrals)
Stage 3:	Exaggerate the bad stories about university/ institution administration, faculty members and study abroad or student exchange program
Stage 4:	Tell competitors of university/ institution (who spread the news to the university's/ institution' other international student customers)
Stage 5:	Usually do not discuss the reason for dissatisfaction with the university/ institution administration
Stage 6:	Usually do not return to the university/ institution after a bad experience.

Source:
Daffy, Chris. Once a Customer Always a Customer. HarperCollins Publishers India.1999)

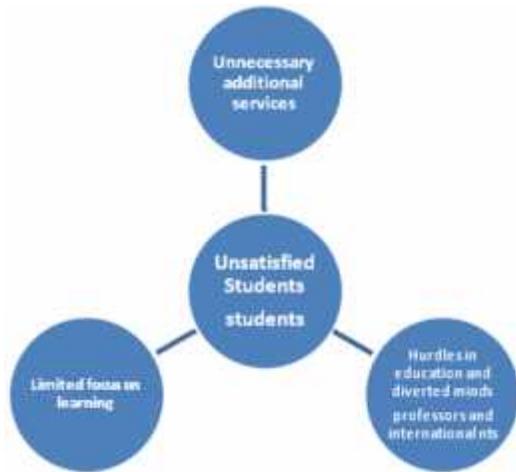
The main reasons for international student customers' dissatisfaction are:

1. There exists a gap between what the university/ institution administration thinks the expectations of international student customer are and what the international student customers actually want or expect from the university/ institution or program.
2. There exists a gap between what the university/ institution administration thinks the international student customer has bought as a study abroad or student exchange program and what the international student customers have received.
3. There exists a gap between the service quality the university/ institution administration believes to be providing to international student customers and what the international student customer perceive is being provided to them by the university/ institution.
4. There exists a gap between the international student customer's expectation of service quality of education and the service quality of education the university/ institution administration actually delivers.
5. There exists a gap between marketing promises made by the university/ institution administration about the program and the actual delivery of the program by the university/ institution administration. (Daffy, 1999)

International student customers expect university/ institution to provide to them complete assistance for the visa procedure, university's/ institution's website information, prompt digital library services, mess facility, infrastructure, cleanliness and furniture at the university/ institution, fast internet connectivity and wi-fi facility, faculty profile, sightseeing facility by the host university/ institution, dispensary and medical aid available at campus, police van and security both at internal and outer areas of the host university/ institution, internship facility provided by the university/ institution and other facilities.

Universities and academic institutions should not be over accommodating because if they provide more and more services which are beyond the expectations of the international student customers then they end up producing dissatisfied international student customers. (Donovan, 2011)

Diagram 1: Services beyond expectations of international students results in dissatisfaction

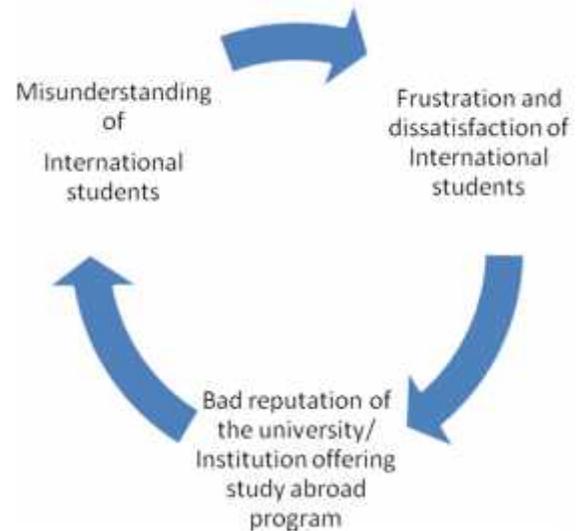


To understand the above diagram better, let us consider the example of Daniel McCracken, student, Northeastern Illinois University, who went on a hunger strike protesting a new lounge at the university campus. According to McCracken "The problem between the administration and teachers directly affects me as a student—how I study, my wants and needs, and my mental well-being. I realized that what's happening right now is insanity, and that our teachers and administrators do the same thing over and over and get the same results. This needs to be resolved, and it needs to be resolved quickly; it's affecting our student body in a very negative way. The teachers aren't the only ones at the short end of the stick; the students are as well. The administration is trying to spend nearly \$250,000 on a new lounge, but not a lot of people know that kind of stuff and it's scary—this is our money. No one asked us if we wanted a new café; nobody tells us our tuition is going up. We have the right to learn this kind of information, and it's time to let it be known." The over accommodating University resulted in diverted minds of faculty and students and wasted time of international students, deprived them of gaining knowledge in limited time and increased the number of dissatisfied students. It is good on the part of University to think about students as customers but University must ensure itself to be a place of learning rather than being a five star hotel. Although there was a possibility of McCracken being physically stressed yet his protest was violence free (Arroyo, 2011). International students must keep what is ethical in their minds and must not get into unethical practices to get their demands fulfilled from the university/ institution offering study abroad program. It is important on part of the university/ institution to set boundary or limits to international student customer's expectations. In order to stay ahead in competition with the other universities/ institutions, universities and institutions consider all

demands of international student customers and their aims shifts from providing knowledge to satisfying international student customers. This will ultimately result in international students' dissatisfaction because their primary aim of getting knowledge is not being achieved which they realize sooner or later.

Often international students misunderstand faculty member's expectation from them and end up getting dissatisfied and frustrated unnecessarily and they start causing damage to the reputation of the university/ institution.

Diagram 2: Misunderstanding of international students leads to bad image of university/ institution.



Most of the times dissatisfaction of international student customers is not reported to the university/ institution administration because they may feel embarrassed in telling the university/ institution administration about their complaint due to power distance. International student customers may think that the university/ institution administration will not do anything about their complaint. Such students fear complaining because they think that the university/ institution administration may make things difficult for them in the future, so they end up not being bothered to complain at all and other students are ignorant about their right to complain.

International students need international student representatives, academic advisors and friendly administration because while leaving their home country they expect that the new culture will be welcoming and feel excited about new school, sightseeing, better facilities and new friends. This excitement may turn into frustration if they do not get what they expect in the foreign land. They may end up feeling depressed, frustrated and homesick. Intensively using of second language may make them avoid interaction with other students, faculty members and

administration and they may isolate themselves. This will result in lesser participation in class and increased absenteeism. (osu.edu)

The international student customers may feel frustrated about their time, money and efforts being wasted if the study abroad program is not up to mark, that is, course content, curricula is not updated and contemporary issues are not discussed. International students may feel frustrated because teaching methodology is different in all the countries. For example, international students may feel that their creativity was exposed in their own home university/ institution while writing the research paper but they may feel frustrated if they are not provided the platform in the host country to express their creativity with regard to the assignment submission or paper writing. International students feel frustrated if clear instructions and a set pattern is not followed for turning in the research papers or assignment (Arthur, 2004). Sometimes their frustration may cause them to go and ask the professor “just tell me what you want?”(Hara, 2011). This results in tension between both student and professor. This situation may arise because international student customers start life all over again at a new place and their mind may not be at peace. This is because place to live and food, are unfamiliar and new to them (Ryan & Twibell, 2000). Problem becomes even graver if these students are undergoing financial problem in foreign land, it may cause low self esteem and jealousy (Sam, 2001) or if they are facing health problems or stress (Ryan & Twibell, 2000). Female international student customers may feel frustrated about fear of traveling or walking alone at new place, especially on campus at night if the university/ institution shuttle or police van is not available. The international student customers feel frustrated because of separation from family and they feel homesick (Komyia & Eells, 2001). “One thing they may want to consider is the fact that international students who make satisfactory contacts with local people seem to be more satisfied with their academic experience and overall adaptation” (Sam, 2001).

Approximately 161 international students were interviewed for research conducted for thesis titled “Success of Student Exchange program with Reference to Student as Customer (SAC) Model: An Overview of International Students’ Expectation, Satisfaction and Involvement in Education.” Mean scores were collected for questions asked from the respondents. The respondents responded on the scale of 1-5 where 1 represented highly disagreed and 5 represented highly agreed.

International students were asked if they thought they were customers of the University because they pay tuition (mean score was very high 4.04), because they felt they are customers of the University, they are

entitled for the degree (mean score was very high 4.04), if they had common general expectations from the university and program (mean score was very high 4.36). To conclude it can be said that international students considered themselves as customers of the university/ institution and they had common general expectations from the university/ institution and student exchange or study abroad program.

International students were asked if the classes scheduled at times were convenient for them (mean score was very high 4.48), if the course offered met their demand (mean score was very high 4.38), if the program offered sufficient variety of course topics (mean score was very high 4.44), if the academic counselor responded promptly to their queries (mean score was very high 4.35), if they were satisfied with the university/ institution and study abroad program (mean score was very high 4.49), if the faculty members were available for their queries (mean score was very high 4.40), if they got into unethical practices for getting their expectations and demands fulfilled by the university/ institution administration (mean score was very low 1.72), It can be concluded that international students were satisfied with university/ institution, academic advisors and faculty members. International student were satisfied so they disagreed getting involved in unethical practices for getting their demands or expectations fulfilled from the university/ institution administration.

International students were asked if they thought that social media provides a good platform to international students for interaction with faculty (mean score was on higher side, 3.89). So it can be concluded that international students consider social media to be a good platform for interaction with faculty, advisors, alumni, parents and other related parties.

Conclusion

It is important for universities or academic institutions offering student exchange program or study abroad program to conduct regular research to study the taste and preferences of international students. The university/ institution can make use of social networking websites for collecting opinions and feedback from international students. University/ institutions and faculty must involve students in researching innovative and interactive ways for learning and developing interesting teaching pedagogy. University/ institutions may treat international students as customers but should not become over accommodating to the unnecessary demands of students. International students must get their genuine expectations fulfilled from the university/ institution in the most ethical manner and must not get involved in unethical practices. International student representatives, academic advisors, faculty members and university/ institution administrative staff must

promote dialogue with international students to make them feel comfortable in foreign land. International student feedback must be collected for improvement in educational services. Co-ordinal and amicable relationship must be promoted among all the parties

dealing with international student customers to make them feel comfortable and satisfied. If this is ensured then international student customers will end up getting good grades and getting involved in education.

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Emerging Quality Issues in Management Education

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Abstract

Management education is going through transformation. The changing scenario offers students more openings, greater confidence and out of the box ways to better sharpen their skills. The current trends include internationalization with bigger focus on international partnerships, international internships, student exchange programs, joint degrees etc. Also, the use of new technologies in management teaching is a trend that is catching up fast. Greater use of the social media to establish connection with students is on the rise. More interdisciplinary offerings in classes, for example, where marketing, strategy and OM faculty come together to teach a course, are seen as the way forward because in real life situations most issues have multiple dimensions. Yet another trend doing the rounds is engaging students in games that simulate the need to find solutions to complex scenarios through teamwork. The earlier craze for management education seems to be over. Students have realized that like in all other subjects, they can get good jobs with management education if and only if they learn something at school. They are also less likely to be taken in with promises of placements – they use diverse sources of information to check such claims. The review of Business Education forces academicians, researchers, policy makers and think tank to scrutinize business education to make it objective oriented, mission based, qualitative and beneficial for all the stakeholders. Management education institutions in India are expected to deliver quality outcomes to the stakeholders namely employers, society and higher educational institutions.

Keywords: Emerging, Quality, Media, Education, Interdisciplinary

Introduction

Until recently, there was not much focus on the need to improve the quality of management education, as demand continually outstripped supply. However, recent trends are likely to augur well for quality improvement in management education in India. Several business schools have not been able to fill their seat capacity for the academic year; as supply outstrips demand, business schools will be compelled to strive for and showcase good quality education. Several issues plague quality standards in management education, from the operational constraints associated with attracting quality faculty and students, to the need for increasing interactions with the industry to ensure currency of the course material. More importantly, students tend to consider business school education to be a conduit to attaining a high paying job; acquiring the requisite skills for these jobs, however, receives secondary status. Business schools have, in turn, been investing tremendous efforts to ensure that their students get placed, rather than in inculcating employable skills. Management educations have to focus on the topics to be taught (what has to be taught) and method of delivery (how it has to be taught). Management education has to give emphasis on making management education relevant to the Indian Context, the themes to be covered, and the way the topics have to be dealt with. Detailed coverage has to be developed for each subject. Since management is a practice oriented domain, management education has to incorporate an element of on-the-job training. This will need a mix of

concepts, cases, exercises as well as simulations for themes such as business strategy, market planning, business negotiations, leadership, business ethics and team work. The main lesson that one can glean from an analysis of US Business education is that they give considerable attention to context design and theme delivery modes. The second point is that both European and US management education has been made context specific through cases, exercises, experiences, sharing, problem solution and simulations that are prepared for the respective business contexts, whereas management education in India has yet to be made context specific. There has to be a massive effort to prepare context specific materials. This will need willingness on the part of Indian business groups to share materials for case preparation.

Emerging Quality issues

Though there have been a number of committees that suggested improvements in management education, there have been no significant changes in management education except in the top ranking B-Schools. Followings are some major issues that need to be addressed if management education has to improve in India, so that managers could respond to the challenges of global competition.

Issue 1: Ensuring changes

Management education must be the concern of the body created by law for governing management

education – The All India Council for Technical Education and its subsidiary – The Board of Management studies. Following issues are to be addressed for implementing changes and ensure quality in management education-

- Identify the measures needed for upgrading the quality of faculty and research.
- To explore ways in which the interaction between academia and management could be improved.
- Consider ways in which standards of several mediocre and in different institutions of management are enhanced, possibly through an accreditation approach, as management is an experience based theme.
- Create greater awareness and sensitivity through extension of the management curriculum to various business sectors such as power management, construction management, agribusiness management, etc.

Issue 2: Ensuring quality faculty

The establishment of AICTE resulted in the sanctioning of a large number of B-Schools. While giving sanctions to a large number of institutions, AICTE was unable to create adequate machinery for the development and training of faculty to teach in management courses with an applied bias. AICTE is unable to monitor the quality standards in the institution due to inadequacy of monitoring system. This resulted in the following conditions:

- Institutions engaged part-time faculty of individuals on contract who taught a course and in most cases, had little involvement either with the institution or the students.
- New faculty members without any experience joined institutions on low salaries and carried a heavy teaching load. They had neither time nor the necessary background to take up research or development of teaching material. They gave lectures mainly drawn from textbook or materials from textbooks or materials based on their company experience.
- Except for a few institutions which updated their programs and teaching technology, the quality of management remained substandard in the sense that they paid inadequate attention to application of knowledge, self awareness among students and development of problem solving, and decision making skills.

The two critical issues to be addressed are mechanisms for ensuring quality of faculty and making the learning student-centered. This requires faculty experienced in student centered learning and adequate library and computer support.

Issue 3: Developing material relevant to the Indian context

There is an increasing awareness that many of the ideas and concepts that have been effective in the countries of their origin have been less effective in India. While many industrialized countries have tested and adopted management practices that are in perfect harmony with their culture and tradition, India is yet to do this exercise through systematic research and study. For example, we do not have good cases or teaching material. The materials available are not specific or relevant to our context. There are no easy approaches for solving the issue of inadequacy of context specific material, but to develop an agenda for that, as developing material is a specialized and time consuming task.

Issue 4: Promoting a research culture

The management institutions do not have a culture that is supportive of research. Imbibing a research culture requires faculty with interest in research and a good library support system. A research culture needs a research community and a research agenda. Such a culture will be created only when it becomes an organizational priority and there is top commitment for building that. If the targets of B-Schools are predominantly monetary, a research culture will not emerge. It is proposed that the enhanced support for research can be brought about in three ways, viz.:

- Certain themes that need special study should be funded, and scholars should be invited to undertake research in those areas.
- Research granting procedure should be seriously reviewed to support individual project proposals and
- Encouraging institutions that have adequate support systems to start Ph.D. programs.

Issue 5: Evolving an accreditation system

One of the emerging issues is to identify the process to be adopted for implementation of an accreditation system. Accreditation needs to be separated from recognition. The accreditation has to be fair, transparent, independent as well as ruthless. The accreditation process should be a widely accepted one. As accreditation process tends to become a political one, the issue is to evolve a method to insulate it from the political interference. Accreditation that uses benchmarks of various parameters could reduce subjectivity. All the degrees covering management, commerce and accountancy should be under one agency. This will ensure that management education has a broad base in India.

Issue 6: Developing interaction with the industry

Except in the case of the top ranked B-Schools, there are no mechanisms to forge close relationship between

B-Schools and industry groups. Development of industry interaction is an evolutionary process. The main strength of top class B-Schools like Kellogg, Wharton and Harvard is their strong relationship with industry through teaching, research, student placements, problem solving and case study preparation. The issue in India is to make this happen in the case of the low ranked B-Schools in India. There has to be a mechanism for developing liaison with industry in each B-School.

Issue 7: Introducing Specialization

The issue to be examined is how one could bring in an element of specialization so as to enhance the relevance of management education. For example, agricultural services, infrastructure management, contract research, high tech entrepreneurship, hospital management etc. are rapidly growing areas in business. These businesses need customized management education. Curricula customization, specific material development and faculty specialization are some of the neglected factors that led to poor quality management education in India. Though some B-Schools have introduced MBAs focused on telecom, financial services and infrastructure management, there have been very little efforts on customization. On the other hand, materials prepared for other contexts are being directly used without examining the contextual validity.

Issue 8: Learning Real Business Issues

Real life situations are complex. Bringing in a living experience is a more promising vehicle for the introduction of messy, irrational complexity which is arguably closer to management realities. The challenge of management education is to bring students close to real situations. There are no easy solutions as there are many unknowns in real life situations and many events unfold in an evolutionary manner as decisions are made. Facts are always impregnated with values and there is no real distinction between morally and politically neutral means such as management has traditionally concurred to be and the value laden ends. The issue is to ensure that management education makes people capable of handling real life situations and at the same time make them understand the value

frame they use for solving problems and dealing with real life situations.

Issue 9: Creating a Global Mindset

London Business School recently published a study that identified the knowledge, skills and attributes young leaders need in order to succeed. The competition is nothing but a race for mastering knowledge and skills. If Indian industry has to compete globally we need executives with world class talent. The issue is how to inculcate a global mindset, though managers may act only locally.

Conclusion

There are various emerging quality issues about management education in India which are needed to be taken care for facing global competition. There is a huge gap between industries and academia. Industry bodies have little understanding of what is missing and wrong in management education. Nor are they sufficiently visionary to understand what should be the content of management education for the future development of India. The industries should come forward to-

- Establishing centers of excellence with institutions
- Providing opportunities to do student internships
- Insisting through proper forum the required changes in the curriculum development and revision of syllabi as and when required
- Raise fund with in-house Research and development and backend support by academic institutions.

B-Schools in India have to do considerable thinking so that the products coming out are capable of meeting the job demands of a global marketplace, though the firms may operate only in some geography. The existing system of accreditation and benchmarking are insufficient to make the B-Schools respond to the new context. The schools that are not on the top need to be supported and they have to be monitored through an appropriate system of corporate governance. Emerging issues regarding quality assurance should be tackled carefully so that management education in India could be able to create jobs and sustain in global competitions.

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Customer Satisfaction with Regards to Internet Banking over Traditional Banking- A Study of selected Commercial Banks in Rajasthan

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Abstract

In the present scenario an internet banking activity is more popular than traditional due to its user friendly facilities and become future face of core banking. This paper makes an attempt to investigate the relationship between perceived usefulness (PU), perceived convenience (PR), perceived reliability (PR) and customer satisfaction to use internet banking over traditional banking in Rajasthan. The study is based on survey method and data is collected through *Questionnaire* from sample of 122 respondents from various parts of the state. Results have shown that Internet banking provides more satisfaction to the customer as compared to Traditional banking.

Keywords: Internet banking, Traditional Banking, Customer satisfaction, Reliability, Usefulness, Convenience.

Introduction

One of the technologies which really brought information revolution in the society is Internet Technology and is rightly regarded as the third wave of revolution after agricultural and industrial revolution. Advent and adoption of Internet by the industries has removed the constraint of time, distance and communication making the globe truly a small village. Financial sector being no exception, numerous factors such as competitive cost, customer service, increase in education and income level of customers, etc. influence banks to evaluate their technology and assess their electronic commerce and internet banking strategies. In the last three decades, the Internet has grown to become one of the most amazing technological and social accomplishments of the last century. Millions of people, most of them are not computer coordination researchers or experts, are using this complex, interconnected network of computers. The computers are located in almost every country of the world. Every year, billions of dollars change hands over the Internet in exchange for all kinds of products and services. All of this activity occurs with no central point or control, which is especially ironic given that the Internet began as a way for the military or maintains control while under attack. The opening of the Internet to business activity helped dramatically increase the growth; however there was another development that worked hand in hand and with the commercialization of the Internet to spur its growth. That development was the World Wide Webⁱ. The Internet is rapidly turning out to be a tool of worldwide communication. The

increasing use of Internet earlier promoted producers and entrepreneurs to sell their products online. It has also become an important source of information and knowledge. Due to this, many banking and finance organizations have come up with the idea of Internet banking or online bankingⁱⁱ.

Internet banking means any user with a personal computer and a browser can get connected to his bank's website to perform any of the virtual banking functions. In internet banking system the bank has a centralized database that is web-enabled. All the services that the bank has permitted on the internet are displayed in menu. Once the branch offices of bank are interconnected through terrestrial or satellite links, there would be no physical identity for any branch. It would be a borderless entity permitting anytime, anywhere and anyhow bankingⁱⁱⁱ.

Banking services through the internet is a way to keep the existing customers and attract others to the bank. In this paper we define internet banking as "an internet portal, through which customers can use different kinds of banking services ranging from bill payment to making investments"^{iv}.

Compared to the traditional approach, internet banking is an inexpensive straight-forward way to conduct banking business, exchange of personalized information and buying and selling goods and services from any place at any time.

Despite the many benefits provided by this service to the bank and its customers, it remains a double-edged sword and not used by every customer, because the increasing distance between the bank and customers

may lead to lack of confidence and an increasing in security concerns. As a result, the quality of electronic banking services become an important area of attention among the researchers and banks managers due to its strong influence on the business performance, lower costs, customer satisfaction, customer loyalty, and profitability^v.

Review of Literature

Almost everyone who you come across these days seems to be using Internet banking and the traditional customer bank manager relationship has been replaced by a password. Internet banking is not only convenient for customers; it also negates the need for keeping some bank branches open for 24 hours a day to provide unparalleled customer service. In addition to that providing the Internet banking option for a bank may require some amount of initial investment, but the costs can be covered soon due to the speed with which customers can be handled and the cut backs on overtime and establishment costs. Internet banking also reduces the amount of administrative work that is otherwise required to manage a bank branch. Based on the large number of people who are turning towards Internet banking, future plans of opening branches across cities can be curbed to some extent, making large investments unnecessary. In fact, today everything is possible on Internet banking starting from request of a new check book, statement downloads, transfer of monies, e-payments and more. Added to that is the freedom from travelling all the way to the branch and avoiding the traffic are reason enough for the customer to choose Internet banking over traditional banking options.

I-banking, now is more of a norm rather than an exception in many developed countries due to the fact that it is the cheapest way of providing banking services^{vi}. Internet banking is a new delivery channel for banks in India. I-banking channel is both an informative and a transactional medium. However, I-banking has not been popularly adopted in India as expected^{vii}.

The findings of this study shows that the level and nature of customer participation had the greatest impact on the quality of the service experience and issues such as customers' zone of tolerance, the degree of role understanding by customers and emotional response potentially determined, expected and perceived service quality^{viii}. This study suggested that consumer perceptions of transaction security, transaction accuracy, user friendliness and network speed are the critical factors for success in Internet banking^{ix}.

One of the most utilized model in studying information system acceptance is the Technology Acceptance Model (TAM) in which system uses (actual behavior)

is determined by perceived usefulness (PU) and perceived ease of use (PEU) (the term used in this research is Perceived Convenience, (PC), relating to the attitude toward use that relates to intention and finally to behavior. The reason for TAM's popularity is because of its parsimony and the wealth of empirical support for it^{x, xi}. For studying the acceptance of Internet banking, we understand that the original TAM is inadequate because the technology used and the transaction environment in Internet banking are different from that of conventional IT and the normal business environment.

Before accepting Internet banking services, users should be aware about benefits, security issues and the risk associated with it, which are important. In this regard, we use an extended TAM model with the addition of an extra variable (perceived reliability) to the model to provide a more comprehensive theoretical perspective of user technology acceptance in the context of IB. Prior research has empirically found positive relationship between PU and PC as critical factors on the use of IB^{xii,xiii,xiv}. It is suggested that perceived reliability is more powerful at explaining consumers' behavior since consumers are more often motivated to avoid mistakes than to maximize utility in purchasing^{xv}. Previous study suggests that perceived reliability is an important ingredient in consumer decision making process regarding the adoption of information technology^{xvi}. The present study aims at examining the impact of PU, PC and PR on the acceptance of IB by the consumers.

Objectives of the Study

From the current review of the existing literature, it is clear that the impact of Internet banking is more effective as compared to Real banking in terms of convenience, reliability and performance, but not much has been explored pertaining to their relationship with banking sector which is an important determinant for effective performance and organizational effectiveness and customer satisfaction too. The present research is thus undertaken with the following objectives in mind:

- To study how internet banking increases productivity for an organization.
- To study interactive effectiveness of internet banking over real banking in customer's prospective.
- To study the security risks in internet banking over real banking.

Research Model and Hypothesis

The formulation of hypothesis is an important stage of every research. Based on review of literature and passed studies, the following hypotheses were formulated for this study through empirical

investigation. There is no significant difference in adaption of Traditional banking and Internet banking in customer satisfaction for banking transactions.

H1: There is no significant difference in Traditional Banking and Internet Banking in terms of Perceived Usefulness.

Perceived usefulness is “the degree to which a person believes that using a particular system would enhance his or her job performance”¹⁰. Also Perceived usefulness is defined as “the individual’s perception that using the new technology will enhance or improve her/his performance”^{xvii}.

In Addition, the term perceived usefulness is also defined as “the subjective probability that using the technology would improve the way a user could complete a given task”^{11, xviii}.

We hypothesize that People tend to use an application to the extent they believe it will aid their performance.

H2: There is no significant difference in Traditional Banking and Internet Banking in terms of Perceived Convenience.

According to Davis (1989) perceived convenience refers to “the degree to which a person believes that using a particular system would be free of effort”.

Hence an application perceived to be easier to use than another is more likely to be accepted by users.

H3: There is no significant difference in Traditional Banking and Internet Banking in terms of Perceived Reliability.

Perceived reliability is defined as “the degree to which a user feels the certainty and pleasant consequences of using an electronic application service, when there is no financial risk, physical risk, functional risk, social risk, time-loss risk, opportunity cost risk, and information risk”^{xix}.

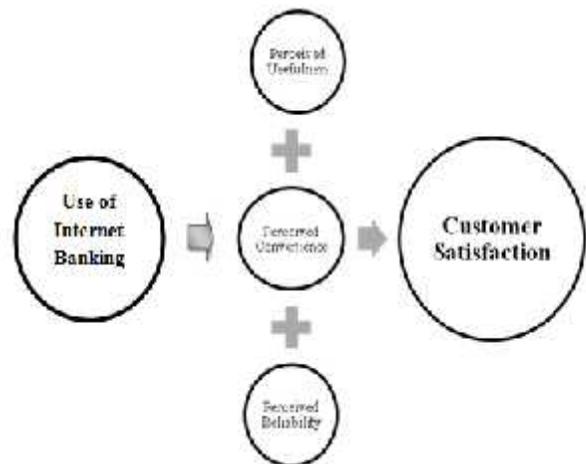
However, the other definition of (PR) stating it as “the extent to which one partner believes that the other partner has the required expertise to perform the job effectively and reliably”^{xx}.

Wang et al. (2003) stated that perceived credibility consists of two important elements namely privacy and security, which affect directly consumer’s adaptation of electronic banking systems^{xxi}.

Security refers to the protection of information or systems from unauthorized intrusions^{xxii}. For the purpose of this research, “perceived reliability” (PR) is defined as users’ perception of protection of their transaction details and personal data against unauthorized access.

Therefore, for studying the effect of perceived reliability on user’s acceptance in Rajasthan internet banking services, we pose this hypothesis and the following model to determine its effect on user’s satisfaction.

Figure 1 Research Model



Methodology

The study undertaken is exploratory in nature that has provided insights into the perception of customer about Internet banking. The study is mainly based on primary data and ‘Survey’ method has been chosen to systematically gather information from customer who are using Internet banking and customer who are using Real Banking.

For customers, both Real banking and Internet banking are two-ways of getting benefits from the banks, as both have their own benefits and limitations. The present study is an exploratory investigation to examine the impact of real banking and internet banking and its different dimensions among customers’ prospective. The study considers real banking and internet banking as independent variables and its implication and dimensions on customer prospective as dependent variables.

Sample

The initial sample of 200 customers was selected on random basis from college students in selected colleges of Rajasthan. Convenience sampling method was used for the reasons that it offers an easy way to obtain the raw data for further analysis and that it saves time and costs since the respondents can be randomly selected. Although there are limitations of using students as subjects, they are appropriate in this study for several reasons. First they are good surrogate for banking customers, they are current bank customers have experience with traditional banking services and are most likely familiar with the IB. Second, student sample reflects current and future banking customers^{xxiii}. Internet users are generally low with majority of them between 20- 30 ages^{xxiv}.

A total of 200 questionnaires were distributed by mail to the students who use Internet Banking services, from which 122 responses were received indicating 61% rate of return. Each questionnaire item was scored on five-point Likert scale (1= strongly disagree; 2= disagree; 3= neutral; 4= agree; and 5= strongly agree). Factor analysis was performed to assess the validity of the construct and the statistical tools used were Analysis of Variance and Z-test.

If Z value equals or exceeds 1.96 and 2.58, it can be concluded that the difference between means is significant at .05 and .01 levels respectively (Garrett and Woodworth, 1981).

Analysis

Statistical Package for Social Sciences (SPSS) version 19 was used as the analysis tool. The demographic profile of the respondents is shown in table 1. Reliability is determined by Cronbach's coefficient alpha (α), a popular method for measuring reliability^{xxv}; Nunnally^{xxvi} suggests that for any research at its early stage, a reliability score or alpha that is 0.60 or above is sufficient. As shown in Table 2, the reliability scores of all the constructs were found to exceed the threshold; all measures demonstrated good levels of reliability (greater than 0.80).

Table 1: Profile of respondents

Variables	Categories	No. of Respondents	Percent
Gender	Male	70	57.38%
	Female	52	42.62%
Age	19-21	27	22.13%
	22-24	35	28.69%
	25-27	33	27.05%
	28-30	27	22.13%
Education	Graduation	41	33.61%
	Post	49	40.16%
	Graduation	32	26.23%
	Doctorate		

(Source: Primary Data)

Table 1 Reliability Statistics

Determinants	Cronbach's Alpha	No. of Items
PU	.891	10
PC	.853	5
PR	.921	10

(Source: Primary Data)

The final scale was subjected to principle component method of factor analysis using varimax rotation. As a result of factor analysis, 3 factors emerged out

Perceived Usefulness (PU), Perceived Convenience (PC), Perceived Reliability (PR).

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy comes out to be .756 which is higher than the recommended minimum of 0.6 indicates that sample is good^{xxvii}. The overall significance of correlation matrices has been tested with Bartlett's Test (approx. Chi-Square 936.792, p-value .000) at 190 df which provides and supports the validity of data for factor analysis.

Table 2 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.756
Bartlett's Test of Sphericity	Approx. Chi-Square	936.792
	Df	190
	Sig.	.000

(Source: Primary Data)

For factor extraction, principal component method was used, under the restriction that the Eigen value of each generated factor was more than one. A factor analysis was conducted to develop constructs that will help analyze the questionnaire responses and to evaluate factors that will influence customer's usage of IB. Three factors were generated, which explained 60.605% of the variability of the data. The extracted factors were then rotated using Variance Maximizing method (Varimax). These rotated factors with their variable constituents and factor loadings are given in Table 4. The factors identified were PU, PR and PC.

Table 3 Rotated Component Matrix

Variables	PU	PR	PC
PU10	.980		
PU5	.948		
PU1	.941		
PU3	.929		
PU2	.927		
PU9	.909		
PU7	.869		
PU4	.868		
PU6	.862		
PU8	.849		
PR3		.915	
PR4		.910	
PR8		.889	
PR7		.869	
PR5		.851	
PR2		.809	
PR6		.639	
PR9		.631	
PR1		.585	
PR10		.571	
PC1			.888
PC4			.815
PC2			.809
PC5			.755
PC3			.561
Eigen Value	9.215	6.238	3.953
% of Variance	28.771	19.523	12.311
Cumulative %	28.771	48.294	60.605
Extraction Method: Principal Component Analysis.			
Rotation Method: Varimax with Kaiser Normalization.			
Rotation converged in 5 iterations.			

H1: Perceived Usefulness

The factor 'PU' is exhibiting total factor load 9.215. Based on formerly conducted researches and their results, the more useful the system is seen and more likely the system is also being used. Significant difference was found in customer satisfaction using Internet banking and traditional banking in terms of 'Usefulness' as $Z_{cal} (4.45) > Z_{tab} (1.96)$ at 5% level of significance, thus the hypothesis H1: Stands Rejected.

H2: Perceived Convenience

The factor 'PC' is exhibiting total factor load 6.238. Internet banking users say that convenience is the most important factor; internet banking lets them access their accounts from anywhere and at any time (Maholtra and Singh, 2007). Significant difference was found in customer satisfaction using internet banking and traditional banking in terms of 'Convenience' as $Z_{cal} (16.8) > Z_{tab} (1.96)$ at 5% level of significance, thus the hypothesis H2: Stands Rejected.

H3: Perceived Reliability

The factor 'PR' is exhibiting total factor load 3.935. Reliability stands for security of Internet banking and an overall belief on the part of the user that banking transactions can be completed confidentially and safely. Significant difference was found in customer satisfaction using internet banking and traditional banking in terms of 'Perceived Reliability' as $Z_{cal} (4.33) > Z_{tab} (1.96)$ at 5% level of significance, thus the hypothesis H3: Stands Rejected.

Implication and Conclusion

The statistical analysis results show that the perceived usefulness, perceived convenience and perceived reliability are the main important determinants of internet banking adoption; all these three factors have a great influence on the customers' satisfaction and acceptance of the system.

Practical implication of these results is that banks need to highlight the benefits of Internet Banking, make it easy to use, and enhance its security to improve consumers' trust. They also need to make the consumers aware about the system by providing them about the details of the benefits associated with it and also ensuring security of the system. However, building a risk-free online transaction environment is much more difficult than providing benefits to customers. Therefore, internet banking companies need to search for risk-reducing strategies that might assist in inspiring high confidence in potential customers. This study suggests that they should consider focusing on the prevention of intrusion, fraud and identity theft. In addition, this study suggests that internet banking companies could develop trust-building mechanisms to attract customers, such as statements of guarantee, increased familiarity through advertising, and long-term customer service. The proposed model makes an important contribution to the emerging literature on ecommerce, especially with regard to internet banking.

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