

## AN ANALYTICAL STUDY ON EMERGING TRENDS OF INFORMATION SYSTEM IN BANKING SECTOR

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### Abstract

*Emerging trends of information system provides the foremost shift from product centric to customer centric in banking sector in recent scenario. Now in India emerging information system offers banking services, which have been designed as per the requirements and expectations of the customers of Indian banking sector. The present paper aims to analytical study in various recent online banking operations. This will give a positive direction to design the effective policy for banking sector in future. This paper has been divided into four sections dealing with rising aspects of emerging trends of banking services as ATM, Internet banking, Mobile banking, Credit cards and EFT. The purpose of this paper is to determine the level of emerging banking services, which have been easily utilized by various customers. A total of number of customer taken for the study is 200 of public and private sector banks of jaipur city. Statistical analysis in this research explored the significant relationship between the gender and emerging banking services. The specific analysis contains the frequency of usage and complaints about ICT tools in banking sector. Emerging information enabled banking products able to provide and increases the reliability and level of usages of banking services among the range of customers. However, the discussion of research paper ensures to form the reflective strategies for ICT usages among customers in rapidly changing system of banking sector in India.*

**Keywords:** *Emerging Trends, Information System, ICT, Banking Sector, Mobile Banking.*

### Introduction

Today, e-banking is used as a strategic tool in the global banking sector to attract and retain customers. There is huge development in the information technology and electronic data processing encourages the changes in banking industry. Branch banking is now change its operations towards the brick and mortar mode, click and order channels in e-banking. Customers can view their accounts, get e account statements, transfer funds, pay bills using net banking. EFT transactions have been increased and Smart Cards with an embedded micro-processor chip have brought about revolutionary change. Electronic Data interchange (EDI), RTGS, NEFT is most profitable development in the banking sector. Transaction costs have fallen down, productivity has enormously improved. E-banking increases the efficiency in the form of effective payment and enhances the delivery of banking services towards e banking customers to retain them.

### Review of Literature

- **On the basis of Technology in banking & Customer Perception**

*Komal & Vandna* (2015) in their research paper examined various ways of using e-banking services and assessed the progress of e-banking in India. The research paper also

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analyzed the e-banking scenario concerned with **ATM, Mobile banking in India** and their impact on customer satisfaction by analyzing the problems faced by the customers. This paper contains a comparative study of **Private sector Indian banks and foreign banks**. The study found that opportunities in e-banking are immense but the only need is to explore them.

- **On the basis of study in Public Sector and Private Sector banks.**

**Fozia (2015)** examined the **customer's perception toward the e-banking** services. A total of numbers of **customers taken for the study were 196**. The study suggested the customer's perception regarding the e-banking services of public and private banks which provides help to the banker to understand the customers need in better way in future. This study highlighted that e-Banking will be successful for banks only **when they have Commitment to e-Banking** along with a deeper understanding of customer needs.

**Vishal, Pandey & Batra (2014)** carried out an empirical study on the emerging research literature on m-banking. They presented a framework for m-banking based on Information Systems (IS), technology innovation, Benefits of Mobile Banking, Current operating practices of commercial banks, **Mobile banking/payment practices in Indian Commercial Banks and Challenges in India strategic, legal and ethical issues.**

#### **Research Gap**

There is a need to identify usage level of new innovative online banking services as Net banking and EFT. This will help the banks to improve their most demanding e-banking products and services and to design the improved strategies for providing effective services to the customers. Today public sector banks are facing extremely intensive competition with private sector banks in India. Thus there is a vital requirement to compare the length of use, frequency of complaints and customer support system for Mobile banking, Credit Cards and CBS banking operations both in public and private sector banks. The descriptive research can be conducted to identify the process of online banking transactions among banks with using (GSM, GPRS) technology.

#### **Objectives of the Study**

- This research paper aims to explore the growth of emerging information system in banking with regards to customers' usage in banking sector.
- To explore the current and emerging banking services's scenario concerned with ATM, Internet banking, Mobile banking and Credit cards in banks.
- To assess the impact of emerging information technology tools of banking (ATM, Internet banking, Mobile banking and Credit cards) to enhance the credibility and reliability among on customers.

#### **Hypotheses**

The study is based on the following hypotheses.

**H<sub>0</sub>:** There is no significant difference between usages of emerging information system of banking services among customers of Public and private sector banks.

**H<sub>a</sub>:** There is a significant difference between usages of emerging information system of banking services among customers of Public and private sector banks.

**H<sub>at</sub>:** There is a significant impact of emerging information system on banking services to enhance the reliability and satisfaction among customers.

#### **Research Methodology**

- **Data Collection**

This research paper study is of descriptive in nature. This research paper is based on the primary source of data collection. The primary data is collected through the structured questionnaires from 200 customers of the leading public and private sector banks (Bank of Baroda, ICICI Bank )of Jaipur. The stratified random sampling method has been used to provide

insights and acceptance of ICT banking tools among customers of banks. It will help to identify the association of gender and queries of respondent with emerging ICT based banking services.

• **Research Variables**

Dependent Variable	Independent Variable
Customer usages of ICT tools	Emerging Information products of banks
Reliability among customers about ICT banking services	Emerging ICT Banking services- Convenience and User friendly E Banking Services
	Cloud Customer Support Services of banks

• **Analysis and Interpretation**

▪ **Dimension for Study**

Information system for banking Growth has been analyzed with using four major latest banking products for usages among customer. This has been analyzed on the basis of various dimensions.

Emerging information System -Banking Products	Dimension for Study
ATMs	Length of usages of net banking service
Internet Banking	Updated online banking operation Information
Mobile Banking	Frequency of usages of Emerging banking services
Credit Card	Problems faced during online banking operations
	Reliability of ICT of banking services
	Level of usages of emerging information system of banking services

• **Length of the Use of e Banking Service**

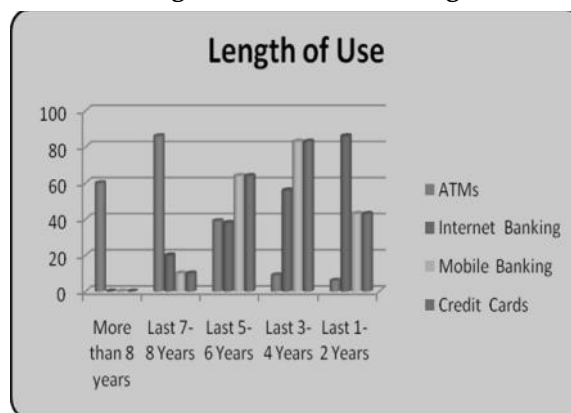
The present growth of ATMs, Internet Banking, Mobile Banking and Credit Cards is analyzed through the length of use by respondents of selected banks. Study time span is divided into five sub-options.

**Table 1: Length of Use**

	ATMs	Internet Banking	Mobile Banking	Credit Cards
More than 8 years	60	0	0	0
Last 7-8 Years	86	20	10	10
Last 5-6 Years	39	38	64	64
Last 3-4 Years	9	56	83	83
Last 1-2 Years	6	86	43	43
<b>Total</b>	200	200	200	200

Source : Primary data of customers of selected banks

**Chart 1: Length of Use of E Banking Services**



Source : Primary data of customers of selected banks

Above Table1 and chart shows that ATM is the most popular e banking services in terms of time span among all the respondents. 86 respondents are using ATMs for last 7-8 years. 64 respondents gives their view that mobile banking becomes popular from last 5-6 years, 56 respondents are using internet banking from last 3-4 years, whereas 43 respondents are using Credit card services from last 1-2 years.

**Table 2: Test Statistics of Length of Use**

	ATMs	Internet Banking	Mobile Banking	Credit Cards
Mann-Whitney U	4043.000	4918.000	3730.000	4523.500
Wilcoxon W	9093.000	9968.000	8780.000	9573.500
Z	-2.510	-.323	-3.461	-1.227
Asymp. Sig. (2-tailed)	.012	.746	.001	.220
Grouping variable :Bank				
Results: H0	Rejected	Accepted	Rejected	Accepted

Source: Spss Result on Primary Data

### Inference

From the above table, it is evident that out of 4 cases, in 2 cases null hypothesis is accepted as significance is more than 0.05 and in rest of the cases, null hypothesis is rejected as significance is less than 0.05. **There** is no significant difference between usages of internet banking and credit card services of selected bank. Length of use of *internet banking and credit cards services among customers of selected banks is significantly same*. On the contrary, **there** is a significant difference between usages of ATMs and Mobile banking services of Public and Private Banks.

### Complaints Regarding E-banking Services

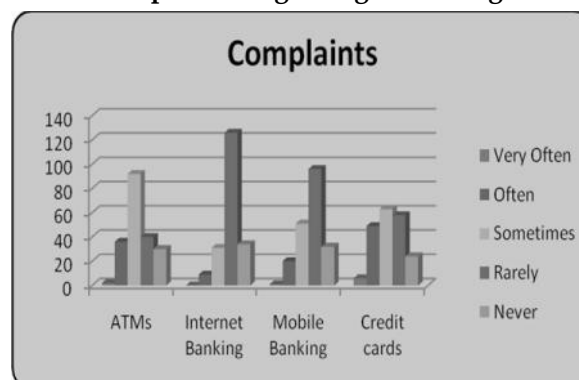
To find out the occurrence in which customers are having complaints with regard to e banking services. There are five different parameters of complaints.

**Table 3: Complaints**

	ATMs	Internet Banking	Mobile Banking	Credit cards
Very Often	2	0	1	6
Often	36	9	20	49
Sometimes	92	31	51	63
Rarely	40	126	96	58
Never	30	34	32	24
<b>Total</b>	200	200	200	200

Source : Primary data of customers of selected banks

**Chart 2: Complaints Regarding E-banking Services**



Source : Primary data of customers of selected banks

Above Table 2 and chart shows that there are maximum 30 respondents out of 200 whom never had problems with ATMs whereas 49 respondents often have complaints about credit cards services of the banks. The table also shows that 126 respondents and 96 respondents rarely have complaints about Internet banking and Mobile banking respectively, only few respondents never had complaints with internet and mobile banking. There are more complaints about credit card services in both banks.

**Table 4: Test Statistics of Complaints**

	ATM Complaints	Internet Banking Complaints	Mobile Banking Complaints	Credit Card Complaints
Mann-Whitney U	4874.000	4362.000	4465.000	2909.000
Wilcoxon W	9924.000	9412.000	9515.000	7959.000
Z	-.327	-1.811	-1.403	-5.304
Asymp. Sig. (2-tailed)	.744	.070	.161	.000
Grouping variable :Bank				
Results: H0	A	A	A	R

Source: Spss Result on Primary Data

**Inference**

From the above table, it is evident that out of 4 cases, in 3 cases null hypothesis is accepted as significance is more than 0.05 and in one case, null hypothesis is rejected as significance is less than 0.05. In other words, it can be concluded that the level of complaints in ATMs, internet banking and mobile banking among customers of Selected banks are significantly same. On the contrary, the levels of complaints in credit cards services of selected banks are significantly different.

**Grievance Settlement System for e Banking Customers**

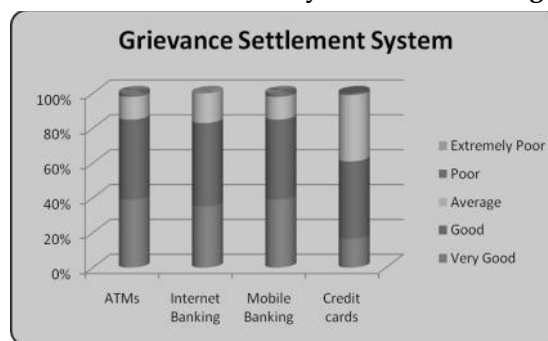
The information from the respondents has been collected on the grievance settlement system for e banking services to know the satisfaction of customers .whether these e banking instruments are satisfactory or not. The study contains five different parameters of customer satisfaction level with regards to e banking services provided by public and private sector banks.

**Table 5: Grievance Settlement System**

	ATMs	Internet Banking	Mobile Banking	Credit cards
Very Good	78	70	78	33
Good	92	96	92	89
Average	26	34	26	76
Poor	4	0	4	2
Extremely Poor	0	0	0	0
<b>Total</b>	200	200	200	200

Source : Primary data of customers of selected banks

**Chart 3: Grievance Settlement System of E-banking Services**



Source: Primary data of customers of selected banks

Above table 3 and chart shows Grievance Settlement System of selected banks. Grievance Settlement System for ATM and Internet banking provide good services as per 92 and 96 respondents respectively out of 200 respondents, grievance settlement system for mobile banking provides very good services as per 78 users, whereas 89 respondents found credit card Grievance Settlement services are good.

**Table 6: Test Statistics of Grievance Settlement System**

	ATMs	Internet Banking	Mobile Banking	Credit cards
Mann-Whitney U	4754.000	4971.000	4823.000	4987.000
Wilcoxon W	9804.000	10021.000	9873.000	10037.000
Z	-.730	-.077	-.472	-.034
Asymp. Sig. (2-tailed)	.465	.938	.637	.973
Grouping variable :Bank				
Results: H0	A	A	A	A

Source: Spss Result on Primary Data

### Inference

From the above table, it is evident that out of 4 cases, in all the cases null hypothesis is accepted as significance is more than 0.05. Grievance Settlement System for ATMs, internet banking and mobile banking and credit cards among customers of Selected banks are significantly same. In other words, it can be concluded that the customers of both banks are satisfied with regards grievance Settlement System of e banking services.

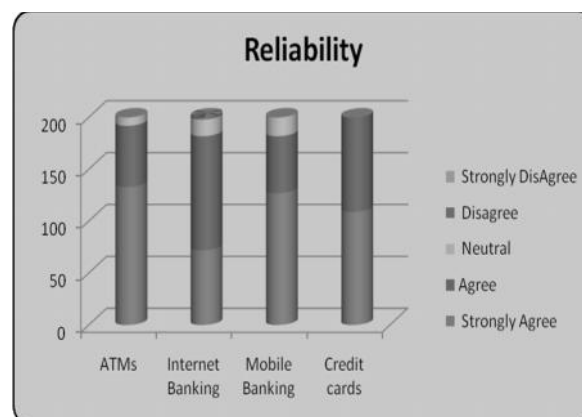
- **Reliability of e Banking Services among Customers**

Reliability of e-banking products is very significant dimension for the study, which constitute the present status of e-banking and has been analyzed on the basis of given parameters.

**Table 7: Reliability**

	ATMs	Internet Banking	Mobile Banking	Credit cards
Strongly Agree	133	72	127	109
Agree	59	110	55	91
Neutral	8	16	18	0
Disagree	0	2	0	0
Strongly Disagree	0	0	0	0
<b>Total</b>	200(100)	200(100)	200(100)	200(100)

Source : Primary data of customers of selected banks



Source: Primary data of customers of selected banks

Table 4 and chart shows that out of the four services ATM is the very reliable with maximum 133 numbers of respondents, and 55 respondents agree with reliability of mobile banking. The table also shows that 110 respondent agree with reliable services of internet banking, whereas 109 respondents are strongly agree with reliability of credit.

**Table 8: Test Statistics of Reliability**

	ATMs	Internet Banking	Mobile Banking	Credit Cards
Mann-Whitney U	4693.000	4963.000	4809.000	4550.000
Wilcoxon W	9743.000	10013.000	9859.000	9600.000
Z	-.910	-.102	-.549	-1.275
Asymp. Sig. (2-tailed)	.363	.919	.583	.202
Grouping variable :Bank				
Results: H0	A	A	A	A

Source: Spss Result on Primary Data

**Inference**

From the above table, it is evident that in all 4 cases null hypothesis is accepted as significance is more than 0.05 .In other words, it can be concluded that reliability of ATMs, internet banking and mobile banking and credit cards services among customers of both banks were same.

• **Level of Satisfaction for e Banking Services Among Customers**

With the help of online banking support services, level of satisfaction among customers about e banking product has also been analyzed on the basis of five parameters

**Table 9: Level of Satisfaction**

	ATMs	Internet Banking	Mobile Banking	Credit cards
Strongly Agree	141	64	96	96
Agree	55	126	84	92
Neutral	4	6	18	6
Disagree	0	4	2	6
Strongly Disagree	0	0	0	0
<b>Total</b>	200	200	200	200

Source : Primary data of customers of selected banks



Source : Primary data of customers of selected banks

Above Table 5 and chart present that satisfaction level, which is highest in ATM, as 126 respondents are satisfied with Internet banking, 96 respondents credit cards and M-banking. The table also reveals that dissatisfied level is highest in case of Credit card and lowest in Internet banking.

**Table 10: Test Statistics of Level of Satisfaction**

	ATMs	Internet Banking	Mobile Banking	Credit cards
Mann-Whitney U	4814.000	4744.000	4380.000	4258.000
Wilcoxon W	9864.000	9794.000	9430.000	9308.000
Z	-.573	-.739	-1.678	-2.037
Asymp. Sig. (2-tailed)	.567	.460	.093	.042
Grouping variable :Bank				
Results: H0	A	A	A	R

Source: Spss Result on Primary Data

### Inference

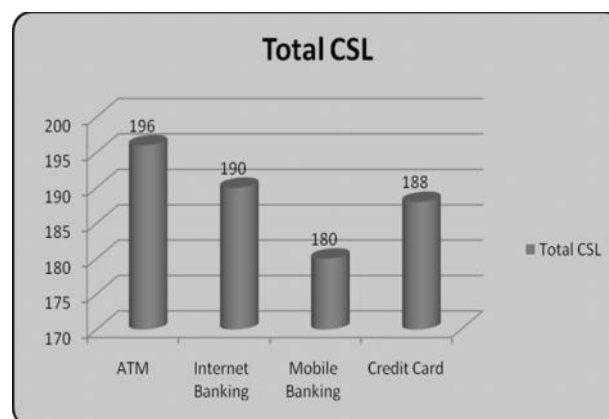
From the above table, it is evident that out of 4 cases, in 3 cases null hypothesis is accepted as significance is more than 0.05 and in one case, null hypothesis is rejected as significance is less than 0.05. Level of customer satisfaction about ATMs, Internet banking, mobile banking among customers of Selected banks are significantly same. On the contrary, the customer satisfaction regarding credit cards services are significantly different in both selected banks.

- **Status of All E-banking Products**

The present status of e-banking services is analyzed in all the banks with the help of total CSL and total number of respondents using these products. Total CSL includes the customer satisfaction level on the different levels & for different products also.

**Table 11: Status of e- Banking Products**

Total CSL = Agree + Strongly Agree			
E banking Product	Total CSL	Total CSL %	Total no. of Users
ATM	196	98	200
Internet Banking	190	95	200
Mobile Banking	180	90	200
Credit Card	188	94	200



Source : Primary data of customers of selected banks

### Inference

Above table and chart elucidate the present status of e-banking products. It is clear that internet banking is having maximum 92 per cent CSL and respondents using it are also maximum 100 per cent. Position of mobile banking is worst with minimum 76 per cent and 53 per cent CSL and users respectively. ATM's is at second place with 2nd highest CSL (90 per cent) and in usage, it is at third place with 80 per cent usage rate. Credit card is at third place in terms of CSL 80 per cent but its usage rate is second highest.



To study the level of customer satisfaction further, the respondents are divided into three categories as given , below average, average and above average levels, which have been defined as Low, Medium and High respectively.

- **CSL of ATMs, Internet Banking , Combined CSL of All E-banking Products**

**Table 12: CSL of ATM's**

CSL	Frequency	CSL Frq Basis
Low	4	Low CSL = Neutral + Disagree
Medium	55	Medium CSL= Agree
High	141	High CSL=Agree + Strongly Agree
Total	200	

Source : Primary data of customers of selected banks

### Inference

Table 12 and chart shows that out of the total 141 respondents have high CSL value of AT,55 respondents have medium CSL whereas only 10 respondent have low CSL for ATMs.

### CSL of Internet Banking

**Table13: CSL of Internet Banking**

CSL	Frequency	CSL Frq Basis
Low	10	Low CSL = Neutral + Disagree
Medium	126	Medium CSL= Agree
High	64	High CSL=Agree + Strongly Agree
<b>Total</b>	200	

### Inference

Table and chart shows that 126 respondents have medium CSL for Internet banking, Whereas 10 and 64 respondents have low CSL and high CSL respectively.

### Combined CSL of All E-banking Products

Combined CSL of all E-banking Products includes CSL of Mobile Banking CSL of Credit Cards, CSL of ATMs and CSL of internet banking

**Table 14: CSL of All E-banking Products**

Product	Low	Medium	High	Total
ATM	4	55	141	200
Internet Banking	10	126	64	200
Mobile Banking	20	84	96	200
Credit card	12	92	96	200

Source: Primary data of customers of selected banks

### Inference

Above table shows *CSL of All E-banking Products*. In Medium CSL for internet banking 126 is maximum among total respondents, high CSL is maximum for ATMs as per 141 respondents ,20 respondents have maximum CSL for Low CSL.

### Discussion

The analysis shows that among all the e-banking products and services, CSL of ATM is highest and the number of users of ATM is also more as compared to other services. Internet banking and credit card comes at second and third position of CSL, as the number of users is more in case of credit cards as compared to Internet banking as depicted in. Mobile banking is at the lowest position in terms of CSL and also in number of users. Therefore, the null hypothesis, There is no significant difference between customer satisfaction level of PSU and

PSIB banks with regard to selected e banking services *cannot, be accepted*. E-banks need to shift now from product centric to customer centric .Opportunities and challenges offered by e-banking can cover the expectation of customers on the given dimensions of e banking services for channel delivery and knowledge management.

#### Limitations

- The sample taken for the study is restricted to a particular region.
- Bias of the respondents may effects the results of the study.
- Though the resources seem sufficient and enough to achieve high standard for this research, but the major demerit of the study is the availability of time for data collection and analysis.

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