A STUDY ON CUSTOMER SATISFACTION WITH THE ATMS OF SBI AND ICICI BANK AND ROLE OF ATMS FOR A GREENER ENVIRONMENT

Ms. Varalakshmi Alapati, Assistant Professor, Dept. of Commerce,

Manipal University, Manipal – 576 104.

Ms. Shruthi V Nayak . II year MBA, School of Management,

Manipal University, Manipal - 576 104,

ABSTRACT

Care for the environment has been a major consideration among production companies for several decades. Roughly, banks started devoting attention to this matter only halfway into the 1990s. Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

In banking industry, e-services are modifying the way business is conducted. Electronic based business models are replacing conventional banking systems and almost all banks are rethinking business process designs and customer relationship management strategies. Indian banking scenario underwent a dramatic changes after the implementation of the new economic policy that triggered out the economy in rapid speed. Banks have equipped themselves immensely with the help of IT development in providing the services in better way to its customers.

The banking system is facing challenges with stiff competition and advancement of technology. It becomes imperative for service providers to meet or exceed the target customers' satisfaction with quality of services expected by them. This paper explores the significant dimensions of ATM (automatic teller machine) service quality and its effect on customer satisfaction. A Questionnaire was used to collect the data from a convenient sample of customers of SBI and ICICI bank too.A few inputs relating to the contribution of ATMs towards being environmental friendly have also been discussed.

Key words: ATMs (Automatic Teller Machines), evolution, customer satisfaction, customer needs, environment.

International Journal in Commerce, IT & Social Sciences

INTRODUCTION

ATMs have become a way of life and the banks which do not offer ATM services are by and large, not

regarded favorable by the customer. The ATM industry consists of multitude of activities which is a

major cause of making e-banking a 24 hours service. In fact, electronic banking is profitable and

possible due to services of ATMs. Because this service provides immense help to the customers in

withdrawing cash from anywhere, anytime.

There is quite a large prediction of ATM growth in India. When compared to the past few years,

Indian banks have established ATMs at the hook and nook of the country to extend their

facilitiesServices like 24 hour banking, service at door step, telephone banking, internet banking,

Extended Business Hours (EBH), speedy processing are only a few to mention. Greater part of

today's bank transactions take place somewhere else other than in branch premises. This shows the

growth of "virtual" banks in India. With convenience, speed, efficiency and effectiveness, these

virtual banks, in effect have opened up a new world of possibilities and brought major changes in

providing a broad range of services. Virtual banks are now seen as an answer to the challenge of

designing a new service channel that is fully secure, functional and which customers can readily

learn to use and trust it. Virtual banking -- a powerful "value added" tool -- has become the focal

point for banks to attract and retain customers.

ATMs offer hassle-free cash withdrawal. No more fighting with the bank's teller for change and fresh

notes. The total cash movement through ATMs in India is already between Millions of Rupees (local

currency) every year. In future, things are going to be even more different and challenging. The ATM

has become a medium for non-cash transactions such as payment of bills, insurance payments,

printing of statements or even accessing the internet.

International Journal in Commerce, IT & Social Sciences

PROBLEM IDENTIFICATION

ATM services have become one of the criteria for a bank's successful reputation. This study focuses

on customer satisfaction level in the two leading banks of India, SBI and ICICI bank. As the use of

ATM is increasing day-by-day, it is important to study the insight about the level of customer

satisfaction with respect to various aspects of ATM service and to identify the problem areas and

proposed recommendation leading to improvement.

The basic requirement for conducting this study was to examine the customer feedback and their

knowledge about ATM services provided by the SBI and ICICI Bank. The study was conducted to find

out the level of satisfaction about the services provided by both the banks among its customers. The

paper also provides few details regarding the eco safety measures the can be implemented through

the use of ATMs.

LITERATURE REVIEW

The concept of ATM is quite old and has been developing throughout. No doubt, a fair number of

theoretical and empirical researches have been undertaken throughout the world.

Manager FSDNCR Corporation India Pvt. Ltd. (2008) in his article, "ATMs: Changing Fundamentals"

suggested that he Indian ATM industry has seen explosive growth in recent times and Banks have

committed to substantial capital outlays on ATM deployment, recognizing the significance of the 3

Ms - Maintenance, Monitoring and Management - of the ATMs to make the self-service channel a

reliable and profitable one.

In another article James J. MacAndrew (2003) talked about the various utilities of ATMs which has

given worldwide popularity. The utilities include withdrawal of cash as per convenience of the

customers than during the banking hours at branches. Besides providing off time and off shore

services, there is reduction of cost of servicing.

International Journal in Commerce, IT & Social Sciences

BACKGROUND OF THE STUDY AREA

The change in banking in the last few decades is magnanimous when compared to the entire period

of history of banking in India. Profitability, which remained a taboo for bankers for a long since

independence has become a buzzword today. Thus, competition driven by technology fuels banking

today. It is becoming clear that "technology" can make bankers sail through the sea of competition,

computerization of branches ,introduction of cash management products, remote access logins for

corporate, mobile banking, internet banking and ATM banking are a few ways by which bankers beat

competition.

The most rampant among them is ATM. An automated teller machine or automatic teller machine

American, Australian and Indian English), also known as an automated banking machine (ABM) in

Canadian English, and a cash machine, cashpoint, cashline or sometimes a hole in the wall in British

English, is a computerized telecommunications device that enables the customers of a bank to

transact without the need for a cashier, human clerk or bank teller. ATMs are known by various

other names around the world.

ATM is designed to perform the most important function of bank. The plastic card is replacing

cheque, personal attendance of the customer, banking hour's restrictions and paper based

verification. ATMs are used as spring board for Electronic Fund Transfer. ATM itself can provide

information about customers account and also receive instructions from customers - ATM

cardholders. An ATM is an Electronic Fund Transfer terminal capable of handling cash deposits,

transfer between accounts, balance enquiries, cash withdrawals and pay bills In many parts of the

world the majority of bank customers regularly use ATMs and today's western youth have not

known a world without them. For them, the prevailing perception of a cash machine is that of a tool

providing a familiar functionality of basic financial information and dispensing cash. The technology

is hidden from sight; the computer is invisible. It has taken approximately 30 years to establish ATMs

International Journal in Commerce, IT & Social Sciences

as ubiquitous examples of public walk-up-and-use devices. The adoption has not been

straightforward, requiring trust in the technology and willingness to modify behavioral strategies in

the very sensitive domain of personal finance. Financial institutions have played a major, sometime

coercive, role in encouraging ATM adoption. The ATM flourishes within societies where time is

precious and money readily available. This culture is composed of individuals, who have personal

bank accounts and access to a wide range of technology.

In India, ATMs are being introduced on a large scale. It concentrates mainly on urban India. Indian

Banking industry is witnessing an unprecedented competition. To stay ahead, banks are coming up

with plethora of services to lure customers.

ATM HISTORY

In simultaneous and independent efforts, engineers in Japan, Sweden and Britain. Developed their

own cash, machines during the early 1960's.the first of these that was put into use was by Barclays

bank in Enfield town in North London, UK. On 27thJune 1967 this machine was then first in the

UKand was used by English comedy actor Reg Varney, at the time so asto ensure maximum publicity

for the machines that were to become mainstream in the UK. This stance of the invention has been

credited to John shepherd-Barron of printing firm De La Rue, who was awarded an OBE in the 2005

New Year Honours.

The first modern ATM came into use in the year December 1972 in the UK; The IBM 2984 was

designed at the request of Lloyds bank. The 2984 CIT (Cash Issuing Terminal) was the first true cash

point, similar in function to today's machines; cash point is still a registered trademark of Llyods TSB

in the UK. All were online and issued a variable amount which was immediately deducted from the

account .A small number of 2984s was supplied to a US bank. In 1967 John Shepherd Barron,

invented and installed an ATM in Barclay's Bank in London. The machine was made by De La Rue

International Journal in Commerce, IT & Social Sciences

Instruments and it used paper vouchers that had to be purchased from tellers in advance. The

machine was named De La Rue Automatic Cash system, or DACS.

ATM HISTORY IN INDIA

In the world of banking, the developments in information technology had an enormous effect in

development of more flexible payment methods and more userfriendly banking services. Online

banking and other electronic payment systems are new and the development and diffusion of these

technologies by financial institutions is expected to result in a more efficient banking system. This

technology offers to the institutions an alternative or non-traditional delivery channels through

which banking products and services can be delivered to customers more conveniently and

economically without diminishing the existing service levels. However the entry of private sector has

posed the challenge of competitive environment to the public sector banks in India.

These private sector banks have brought with them the advanced banking technology with alternate

delivery channels such as Phone Banking, Mobile banking, Internet Banking, ATM etc. Out of all

these e-banking services, theever demanding and fulfilling the requirement of the customers is

automated tellermachines. So the efforts of the banks are to manufacture and install as much

ATM's which could serve its services to the entire customers of the nation, be it rural people or urban

people. To suit the needs of rural people, additional security device innovations are being made in

the form of using camera inside the ATM which could compare the records with thumb impression

(Bio-Metric) of the client for identification. The management of ATM includes loading of ATM with

cash, arranging of money with bank with which cash is loaded, service of car that delivers cash if it is

offsite situated, providing insurance for all areas such as theft of cash from ATM. Due to large

expense involved in setting and situating an ATM at a particular place, these services are now days

offered by independent service providers like privately owned ATMs.

BENEFITS TO DIFFERENT USERS

TO CUSTOMERS

- i. Convenience to transact whenever and wherever required
- ii. Consistency of service
- iii. Variety of service at one point
- iv. Easy availability
- v. Security of transaction due to use of PIN
- vi. Sense of security due to less cash holding
- vii. Availability of good quality currency notes
- viii. Enhanced interest earnings.

TO BANKS

- i. Competitive edge/improved image
- ii. Reduction in staff workload and drudgery
- iii. Rationalization of staff strength with freed staff who can be focused on marketing, cross selling and customer relationship
- iv. Reduction in transaction costs and overhead
- v. Thinning of crowds in banking halls resulting in improved buying satisfaction and lesser need for space
- vi. Improved customer satisfaction
- vii. Improved housekeeping
- viii. Increased customer base
- ix. Advertising possibility on the screen of ATM display of promotional material
- x. Provision of product information at the ATMs
- xi. Increase in miscellaneous business
- xii. Substitutes branch banking.

TO OTHERS

i. To concerns like airways/railways whose tickets are marketed and sold economically

ii. To electricity boards/telephone departments who improve their image by providing easy

options for their bill payment

iii. To economy at large due to less circulation of cash.

OBJECTIVES OF THE STUDY

> To examine the level of customer satisfaction associated with various aspects of ICICI Bank

and SBI ATM.

To analyze the present ATM facilities provided by SBI and ICICI Bank.

To study the awareness and use age of ATM services.

METHODOLOGY

SAMPLE DESIGN

The sample size considered is 150. These respondents were asked questions by a questionnaire

which includes their perception regarding their satisfaction level in the usage of the ATM's of the

banks. The location of survey is Manipal- Karnataka.

SOURCES OF INFORMATION

The present study has made use made use of both primary as well as secondary data.

This study depends on two kinds of data:

i. Primary data,

ii. Secondary data.

i. PRIMARY DATA

The data obtained from questionnaire and interaction with the customers of ICICI bank and SBI bank.

SECONDARY DATA

The secondary data was collected through various newspapers, RBI monthly bulletins and magazines

and websites related to the subject.

RESEARCH ANALYSIS

The survey consists of a questionnaire provided to the customers to know their feedback on ATM

services of ICICI and SBI bank.

Bank name

The reach of SBI bank is wider than ICICI bank because of the number of salaried and student

account customers it holds, of Manipal University.

Therefore we received a larger number of SBI customers than ICICI bank customers. Table (i) depicts

that 82 respondents are SBI customers and 68 are from ICICI bank.

Type of account (Table ii)

Majority of the respondents have a savings account with the SBI bank. This mainly includes salary

account of Manipal University employees and student's account of the students of Manipal

University. ICICI bank has a quite sufficient number of current account holders who operate ATMs.

<u>Age group (Table iii)</u>

Majority of the customers is aged below 25 years in SBI bank.

The numbers of respondents using ATMs are substantially high in the case of customers below 25

years. The tech savvy customers prefer ATM services rather than visiting the bank premises. There is

a reduction in the ATM users after 35 years since the customers at that age criteria were those who

have already been accustomed with the services at the bank's premises. Even though a large amount

International Journal in Commerce, IT & Social Sciences

of respondents were below the age of 25 years, there is sufficient number of ATM users between 25-

35 years when compared to SBI bank.

<u>Profession (Table iv)</u>

The number of employee customers is more in ICICI bank than SBI bank. 31 customers of ICICI ATM

are into business. SBI has a large number of customers who are students almost 40.

Income(Tablev)

Majority of SBI customers have zero income whereas a lot of ICICI bank customers have an income

from 20000-50000

Are you satisfied with the clarity of bank statement? (Table vi)

Users of SBI ATM find clarity in the bank statement rather than users of ICICI bank. 67 SBI ATM

customers feel that there is enough clarity in the bank statement but 35 ICICI ATM customers felt

that there wasn't enough clarity.

Usage of ATM (Table vii)

Regarding the usage of ATM nearly 37% percent respondents utilize the ATM on a daily basis. There

is large difference seen in the utilization of ATM on a weekly basis. SBI customers utilize ATM largely

on a weekly basis than ICICI customers.

Instruction booklet provided with ATM card (Table viii)

Interestingly a large number of SBI customers have not received the instruction booklet with the

ATM card. On the other hand a large number of ICICI bank customers have received the instruction

booklet.

Are you aware of the options rather than withdrawal provided by your Banking Bank's ATM?(Table

<u>ix)</u>

A large number of ICICI customers are aware of the options available in the ATM other than just cash

withdrawal, when compared with SBI customers.

If yes, have you ever tried to use the facilities other than cash withdrawal? (Table x)

Quite a number of ICICI bank customers are well aware of the options provided in ATMs other than

cash withdrawal and have used them.

There is a reluctance seen among SBI customers in using other option of ATMs.

If No, What is the reason behind your reluctance?(Table xi)

Regarding reason behind not utilizing other facilities of ATMs than cash withdrawal, 34% of SBI

customers find branch service better than the ATM service.26% of ICICI bank customers feel that the

ATM doesn't provide them with sufficient information to carry out other transactions.

Customers also are also unaware of the services provided by their ATMs and are reluctant because

they feel it's insecure.

In the next five years, do you think the payment mode at the point of sale will be fully in electronic

form?(Table xii)

76% of respondents believe that the payment mode at the point of sale will be fully in electronic

form in the next 5years.

What are the positive features of ATM service of your banking bank?(Table xiii)

34% of customers find that SBI ATMs are easy to use than ICICI ATM.

A large number of respondents feel that the 24 hours service in 365 days is the best positive feature provided by both the bank's ATMs.

There is no difficulty regarding cash withdrawal in both the banks.

What are the uncomfortable features/issues of your banking bank's ATM?(Table xiv)

Comparatively ICICI bank's ATM has less negative features then SBI bank. The only contradiction is seen with the reasonability of fee charged by ICICI bank. Quite an amount of customers feel that ICICI bank charges them a high fee in using ATMs.

What are your recommendations to improve your banking bank's ATM services?(Table xv)

A whooping amount of ICICI customers find that currency quality provided to them is better.

Interestingly the respondents have provided a number of recommendations to SBI ATMs regarding new ATM locations, facility to pay utility bills, increase in safety and security and enhancement of withdrawal limits.

Table i: Bank name

Bank Name	Respondents
ICICI bank	68
SBI	82

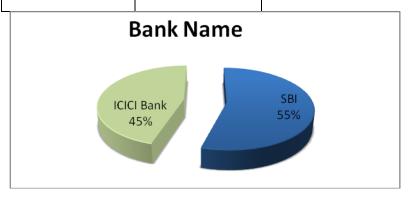


Table ii: Type of account

Type Of account	SBI	ICICI bank
Savings account	73	48
Current Account	7	20

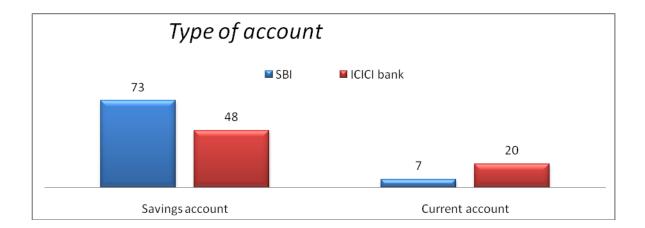


Table iii: Age group

Age group	SBI	ICICI bank
Below 25	38	30
25-35	29	23
35-45	13	12
45 and above	2	3

IJCISS Vol.2 Issue-1, (January, 2015) ISSN:3394- 5702 International Journal in Commerce, IT & Social Sciences

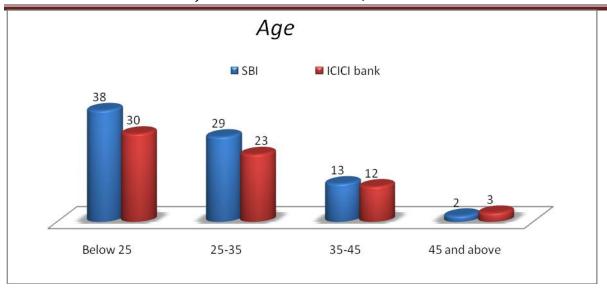


Table iv: Profession

Profession	SBI	ICICI bank
Student	40	15
Employee	34	31
Businessman	5	20
house wife	3	2

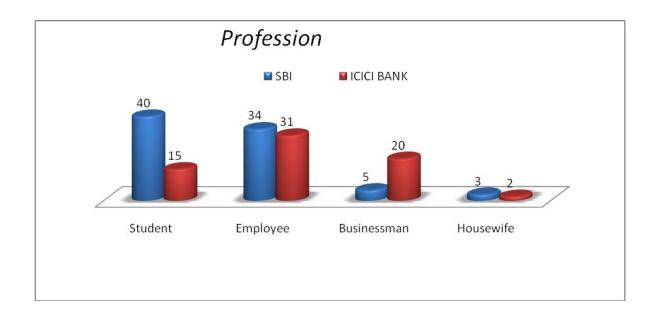


Table v: Income

Income	SBI	ICICI Bank
Below 20000	16	18
20000-50000	17	34
50000 and above	10	8
None	39	8

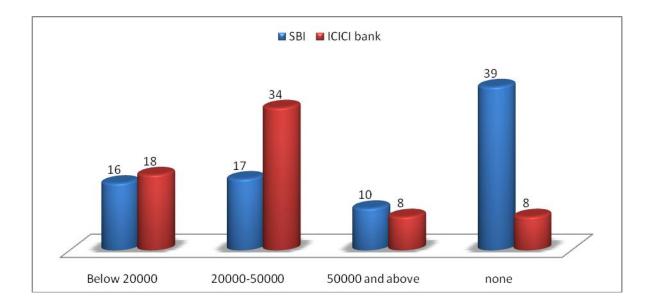


Table vi: Are you satisfied with the clarity of bank statement?

Response	SBI	ICICI Bank
Yes	67	33
No	15	35

IJCISS Vol.2 Issue-1, (January, 2015) ISSN:3394-5702 International Journal in Commerce, IT & Social Sciences

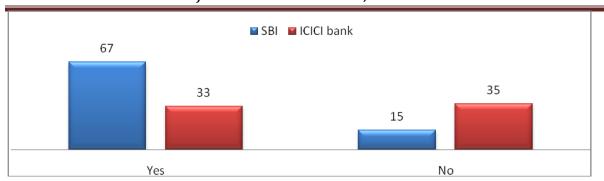


Table vii: Usage of ATM

Usage of ATM	SBI	ICICI bank
Daily	12	20
Weekly	36	6
Monthly	7	13
Anytime	27	29

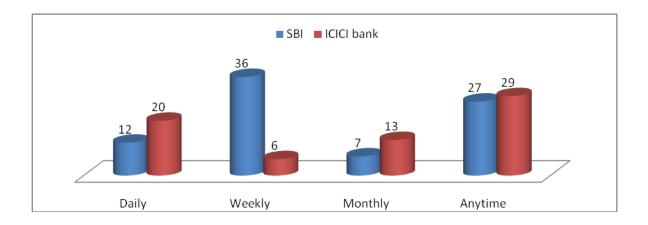


Table viii: Is Instruction booklet provided with ATM card?

Bank	Yes	No
SBI bank	40	42
ICICI bank	43	25

IJCISS Vol.2 Issue-1, (January, 2015) ISSN:3394- 5702 International Journal in Commerce, IT & Social Sciences

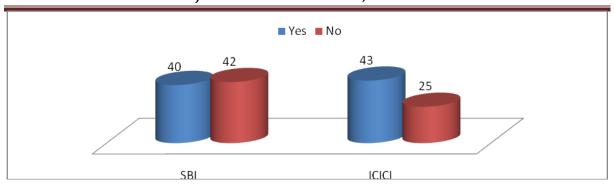
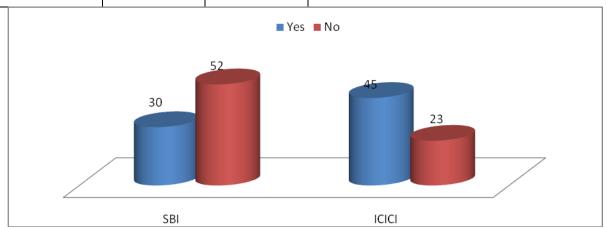


Table ix: Are you aware of the options rather than withdrawal provided by your Banking Bank's ATM?

Bank	Yes	No
SBI bank	30	52
ICICI bank	45	23



A large number of ICICI customers are aware of the options available in the ATM other than just cash withdrawal, when compared with SBI customers.

Table x: If yes, have you ever tried to use the facilities other than cash withdrawal?

Bank	Yes	No
SBI bank	24	58
ICICI bank	41	23

IJCISS Vol.2 Issue-1, (January, 2015) ISSN:3394- 5702 International Journal in Commerce, IT & Social Sciences

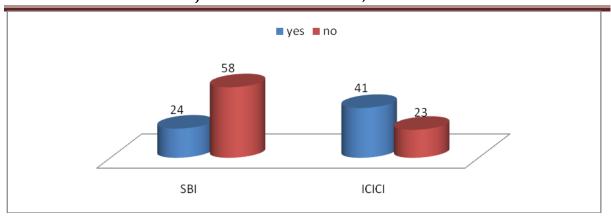


Table xi: If No, What is the reason behind your reluctance?

Reasons	SBI	ICICI bank
it is cumbersome	12	13
you don't like it	14	11
branch service is better	28	15
it can't provide me required information	17	18
it is time consuming	8	5
other	3	6

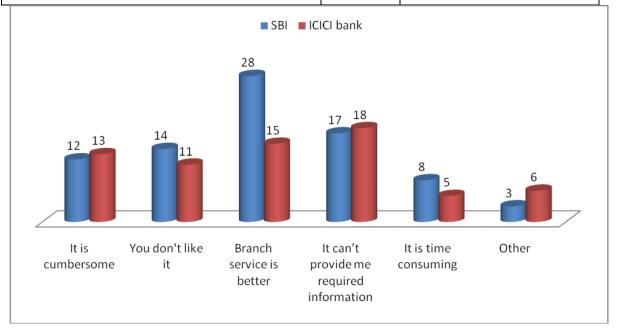


Table xii: In the next five years, do you think the payment mode at the point of sale will be fully in electronic form?

Bank	Yes	No
SBI bank	63	19
ICICI bank	52	16

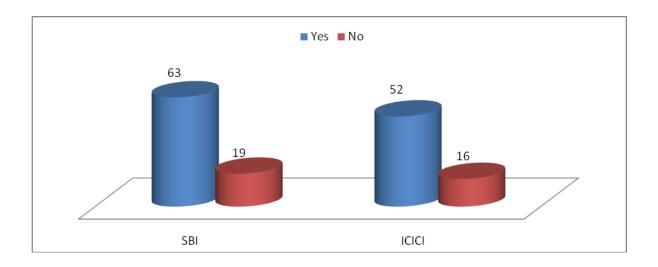


Table xiii: What are the positive features of ATM service of your banking bank?

Positive features	SBI	ICICI
Easy to use	12	8
Satisfied with the service quality of ATM	6	3
Saving the Time	11	10
24 hour service in 365 days	14	13
Off-shore ATM	3	4
Cash withdrawal	10	10

IJCISS Vol.2 Issue-1, (January, 2015) ISSN:3394-5702 International Journal in Commerce, IT & Social Sciences

Cash deposit	2	1
Transfer of funds	6	7
Statement request	9	10
PIN change	3	2
Enquiry	3	3
Safety-security	2	2
Others	1	2

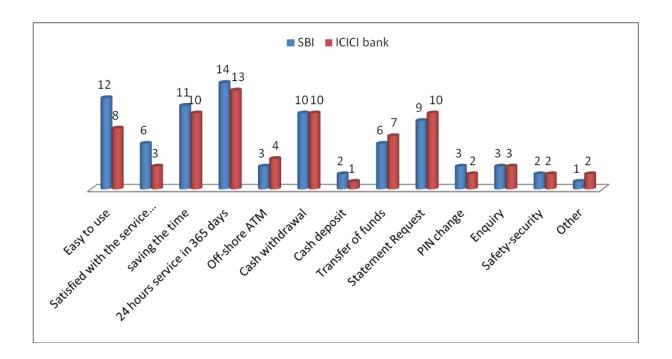


Table xiv: What are the uncomfortable features/issues of your banking bank's ATM?

Negative features	SBI	ICICI bank
Soiled notes	11	8
Absorbed Card	8	5
No privacy	6	3

IJCISS Vol.2 Issue-1, (January, 2015) ISSN:3394- 5702 International Journal in Commerce, IT & Social Sciences

Machine complexity	7	6
Machine breakdown	18	11
Unsuitable location	8	6
Unsecured	3	2
Old fashioned & untidy	13	10
Lack of ATM centers	6	8
Reasonability of fee charge	1	5
Others	1	4

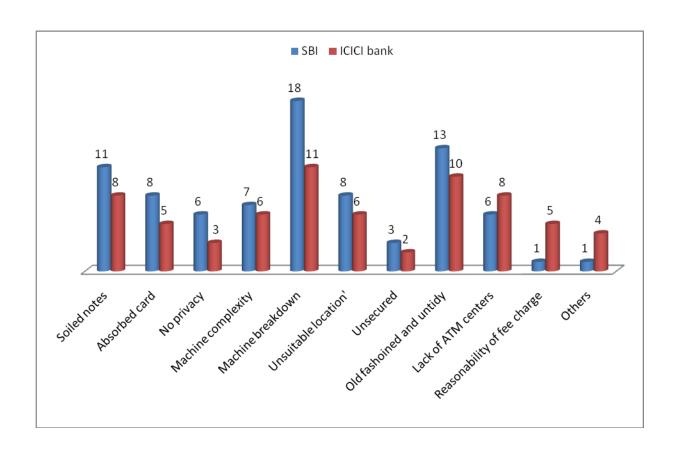
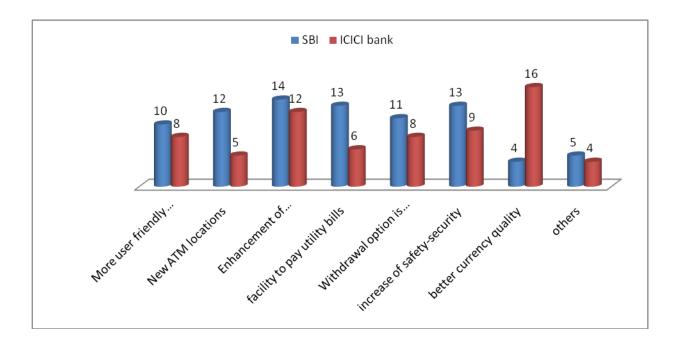


Table xv: What are your recommendations to improve your banking bank's ATM services?

Recommendations	SBI	ICICI bank
More user friendly machine.	10	8
New ATM locations.	12	5
Enhancement of withdrawal limits.	14	12
Facility to pay utility bills.	13	6
Withdrawal option is loaded in the multiples of Five Hundred.	11	8
Increase of safety- security.	13	9
Better currency quality.	4	16
Others	5	4



SUGGESTIONS

ATMs have become a way of life and the banks which do not offer ATM services are by and large, not regarded favorable by the customer. There was a time when banking meant waiting in long queues

during working hours on weekdays just to get a passbook updated or get the 'busy' bank staff to answer your queries.

The need to provide personalized, speedy and cost effective services is pushing banks to further

reorient and innovate the business model of banking and enabling technology. It has become

inevitable and is seen as the only way for banks to survive in the increasingly competitive banking

arena. Technology not only simplifies the banking process and service channels but also plays a

holistic role in enabling financial inclusion. However, some bankers are of the opinion that unless the

financial inclusion is supported in some form by the government it will not be a viable initiative.

Many Indian banks have embarked on the journey of technology revolution and are at varying

degrees of success. This is due to the fact that not all of them have understood diversity of their

customer base and their varying needs. As one senior banker put forward bankers need to

understand customer needs in rural India as well as Gen Y and develop products and services

focused on their needs. Regarding the ATMs, scope for reducing environmental impact is further

possible, a key focus area for responsible banks in reducing their carbon footprint.

The ATMs can be made greener by the following means:

Give customers the option of printing a receipt. While printed receipts can be a very

important part of the transaction for some customers - not all customers want or interested

in receipts.

Alternatively, two-sided thermal printing (which prints on the front and back of the paper),

can be thought of so that paper is used efficiently and cut total paper volumes.

Increasingly, consumers are open to receiving a text message or email as a form of receipt.

> Install more solar-powered ATMs, with banks and financial institutions gaining significant

benefits from this innovative solution.

The environmental impacts of ATMs, specifically focuses on the potential environmental effects

regarding the material intensity throughout the life-cycle with respect to material flows & transport

intensity, Raw Materials etc. The energy sources include monthly account statement, transport

to/storage at Central Clearing House, Intake and processing of credit slip, filling out credit slip,

Transport/Transmission of credit slip, its production & supply etc.

The material intensities of aspects that are not central to the scenarios such as, the production of

vehicles, the transport infrastructure etc. will also have impact on environment. Building

infrastructure can contribute a considerable degree to the overall material intensity including

consumption of electricity, gas and water etc. and thus among other things, the energy consumed

will be less overall. In usage of ATMs, the material intensity would be reduced significantly. In

general one can say that the means of transportation by the consumer is also a saving to

environment, including avoiding of parking lots next to the bank or traffic jams on the roads etc.

In a dynamic and growing economy, such simple savings are great advantages towards

environment, when the productivity of a resource is improved; resources are freed for other uses.

This is the essence of the rebound effect of online banking, the comfort of being able to do the

banking from anywhere, anytime without the need to visit a branch. So the main efficiency gain is

time saving and perhaps saving trips. Even time wise, the savings are notable.

CONCLUSION

The observation in the survey depicts that banks should take up various measures to educate

customers on the usage of ATMs. Quite a large number of both the bank's ATMs are unaware of the

various facilities provided by the ATMs other than just cash withdrawal and balance statement. They

should be made aware of the facilities like transfer of funds, biller payments, mobile recharge,

donating to charity etc. so that the customers can make better use of the ATMs by deriving all its

benefits.

When comparing ATM and branch service, customers feel that SBI branch service is better than its

ATM service. Whereas, ICICI customers find both of the services viable. It signifies that customers are

reluctant to use ATMs and would prefer branch service. Having the largest ATM network in India can

be an enviable position. But, for the country's largest bank, SBI that seems to be hardly the case. For,

SBI customers prefer its competitor bank's ATMs.Customers prefer more user friendly machines,

ATMs at new locations, enhancement of withdrawal limits, withdrawal limits to be loaded in

multiples of 100s and ATM safety and security. This being the case of SBI ATMs.

Sustainable development is largely about making links between disparate factors. There are some

real tasks associated with online banking: digital inclusion and technological literacy are still major

problems in Indian society and, must continue to be a priority issue for banks as they should be

taking a major initiative. Change is inevitable in the modern banking environment, the successful

banks will be those who can adapt the older channels to bring benefits to the newer ones and yet

maintain the trust of the customers.

If the banks are to reap the social sustainability benefits of online banking to the full, they need to

continue to search for innovative and efficient ways to integrate their CSR work into all areas of

business, linking the opportunities available for training, inclusion and trust building. Seeking a

socially sustainable solution to online banking, moreover, can be seen, by and large as more of an

real opportunity than it is at present, offering win-win outcomes for business and society. ATMs are

a transitional phenomenon, on a long-term strategy; the banks are going to reduce their building

infrastructure in the long run, either by closing branches or reducing branch sizes. It is sure and

certain that ATMs will contribute to a decoupling of economic & environmental growth. However it

can be confidently stated that technological developments have played a crucial role across the

society, giving benefits, best made available to the whole of society for its mutual benefit between

banking and society.

REFERENCES

Ammannaya, KK, "Transformation in Indian Banking – Post-Reform Developments and Challenges Ahead", The Indian Banker, Vol. III, No. 10, 2008

Antonella De Angeli, UdayAthavankar, Anirudha Joshi, Lynne Coventry, Graham I. Johnson, "Introducing ATMs in India: A Contextual Inquiry", Interacting With Computers, Volume 16, Issue 1 (Global Human Computer Systems: Cultural Determinants in Usability), 2004, pp.30-44

CII banking TECH summit report/2012 edition / Mumbai, 28 June 2012

Devaprakash R., "Branchless Banking – Way Forward in Indian Context", The Indian Banker , Vol. III, No. 8, 2008

Gorry, G. and Scott Morton, M. (1971) A Framework for Management

Information Systems, Sloan Management Review, Fall, pp 55-70

Krishnaswami, Sivkumara, Mathirajan (2008), "Management Research Methodology – Integration of Principles, Methods and Techniques", Pearson Education

Litan, R. E. (1999), "ATM Fees: An Economic Analysis," available at www.aba.com/aba/

McAndrews, J. J. (2003), "Automated Teller Machine Network Pricing – A Review of the Literature," available at http://www.rnejournal.com/articles/

Raihan, A., S. R. Khan, M. R. Alam and K. Rabbi (2001), "Computerization and IT in Banking Sector: Hindrances and Remedies," Bank Parikrama (Dhaka: BIBM), Vol. XXVI, No. 1 (March): 95-133.

Sultan Singh and Komal, "Impact of ATM on Customer Satisfaction, (A Comparative Study of SBI, ICICI and HDFC Bank)", Business Intelligence, Vol. 2, No.2, 2009, pp.276-287

www.atmparketplace.com

http://blog.atmss.com/2012/07/eco-friendly-atm.html

www.computer.financialexpress.com

http://www.compositesworld.com/news/brazilian-firm-develops-composites-intensive-eco-friendly-

atm-structure

www.csi-india.org/c/document_library.com

http://www.finextra.com/news/fullstory.aspx?newsitemid=23914

http://futuristicnews.com/an-eco-friendly-atm-concept/

www.gizmag.cmo

http://www.usatoday.com/story/news/nation/2012/10/07/phone-atms-cash-devices/1578487/