Improvements in Information Technology: Islamic and Conventional Banking Sector of Pakistan

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Abstract
In recent years, the trend of electronic banking has successfully progressed and upgraded business and transactions all over the world. All of the change is in line with Information Technology (IT). Today banks are working in a competitive environment independently and with globalizing trends due to information technology innovations in the banking sector. I find out the evolution of e-banking in Pakistan. E-banking is not new for us, E-banking service is available 24x7 and our monetary transactions become easy, convenient, and in timely. Our country is fully aware of its benefits; this is the reason that SBP has promoted it in Pakistan. The objective of this study is to measure the progress of e-banking in Pakistan from 2006 to 2017. The progress of electronic banking in Pakistani banking industry is measured through various parameters such as IT facilities, ATMs, Transactions volume, etc. Highest users of e-banking are 42% users in Islamic banks. This study is based on secondary data and is analytical in nature. The methodologyincluded simple growth rate like total quantities of plastic card, transactions, the value of transactions, ATMs, Real-Time Online Branches (RTOBs) and Point of Sales (POS) ATMs, RTOBs etc. by using statistical and mathematical measures. The study highlights the progress of electronic banking in Pakistan in both banking systems after adopting of information technology.

Keywords: E-Banking, Information Technology, Conventional & Islamic Banking, Pakistan.

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1. Introduction

Almost three to four decades ago working for banks was treated as the simple business. In those days, the consumer used to save their money and took financial services from banks. Today, the banking industry has shifted into a new scope of work through a specialized software programs called banking applications. These applications can carry out virtually all banking system and its functions depend on information collection, storage, transfer of money and processing. That is why the electronic banking system took a fundamental importance in all fields(Alabar, 2012).

In the current global environment, the banks are performing multiple functions to provide a variety of products, services and are providing the latest facilities to their customers. It influences and facilitates many integrated economic activities like resource mobilization, poverty elimination, production, and distribution of public finance. Whether it is the purchase of a car or building of homes, banks are always there to serve better. Consumer satisfaction is considered very important for any organization. Owing to the fact that customers are the ultimate source of income for any institution, the customer satisfaction has become a hot issue for banks. From the last one and half decade bankers are focusing on customer's satisfaction and due to this, a competition has started in the banking industry. Now mostly institutes have improved the service quality and the products, they offered to their customers. E-banking is a key driver for changing the world at staggering rates and said to be a truly global phenomenon that has made transactions very easy (Najaf, Najaf, & Pasowal, 2015). It has importance in all types of the banking system of the world. E-banking can be defined as the automated delivery of banking products and services to customers through interactive electronic communication ways. It signifies the relationship between banking and the emerging electronic. Growing use of the internet has changed the concept of every business including banking. These days, electronic funds transfer, credit cards, smart cards, charge cards, automated teller machine (ATM), internet banking, and mobile banking are the products in conventional e-banking system. E-banking also automates the process of recording transactions, posting entries, updating accounts and balances, generating reports, and reviewing results (Shih & Fang, 2004).

E-banking besides affecting the outlook of the bank has also significantly influenced the ways in which a bank manager interacts with the colleagues and the way he carries out his routine duties. Another internal function of

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commercial banks relates to CBIS (Computer Based Information System) a system that automates the primary need of every modern commercial bank.

While using the CBIS application, e-banking support Management Information System (MIS), Decision Support System (DSS), Executive Information System (EIS) and Transaction Processing System /Report Generating System (TPS / RGS) etc. Mobile Banking App - relies on high-security mechanisms to protect customer's privacy and financial information from login to logout. Internet Banking provides global access to your account and facilitates 24 hours a day, 7 days a week. No more waiting in queues to pay bills, SMS Alerts; receive alerts on your account transaction. It accesses a wide range of Tele-banking and personalized banking services. Interbank Funds Transfer, is a fast secure, and convenient service which allows you to transfer funds to any IBFT member bank account. In completely interactive service, that allows you to access your account on demand anytime, anywhere from your mobile phone. It also includes an online shopping facility through all debit cards (Mian, 2013; Raza & Hanif, 2013).

2. Objectives of the Study

The primary objective of this study is to analyze the growth of e-banking product/ and service implemented by Pakistani banks. The secondary purposes are to analyze the progress of e-banking by Pakistani banking industry after adoption of this mechanism (2006 to 2018).

Hypothesis

H1. E-banking products and service progress have a significant relationship with development of banking industry

H2. E-banking service and product progress have not a significant relationship with development of banking industry

3. The Scope of the Study

Actually, this study is focused on evolution potential of e-banking service and finds out its efficiency in different fields. All institutes face the pressure of new innovations and rising completions for stay in market; the commercial banks are also one of them. This is the reason, banking sector provided numerous and emerging types of electronic banking like ATMs, internet banking, mobile banking, phone banking, telebanking, electronic clearing services, electronic clearing cards, smart card, doorstep banking, electronic fund transfer etc. and

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different facilities like convenience banking, no queues, ease to access, 24x7 service, and 52 weeks in a year.

4. Literature Review

4.1 Definition of Electronic Money

The main purpose of the banking system is to transact money easily and safely. Electronic money has numerous kinds, which work with the computer system and has no physical form. Electronic money is also entitled as e-money, electronic cash, electronic currency, digital money, digital cash, digital currency, cyber currency. Usually, Electronic money work by using computer networks, the internet, and digital stored value system (Cohen, 2001).

In the initial stage of banks, the transactions of all types of banks had been based on the exchange of money. Basically, the objective of the banks was to earn profit against the banking services. So the banks are known as commercial institutes. Today, the banking industry has shifted into a new scope of work through the software program called banking application. These applications can carry out virtually all banking system and its functions depend on information collection, storage, transfer money, and processing. That is the way the electronic banking system took a central position in all its fields (Alabar, 2012).

In the early phases of the banking industry, the exchanges of a wide range of banks had a trade of cash. The primarily goal of the banks is to gain profit against managing account, and take the benefits through the improvement of their transaction system of money. Today, keeping money industry has moved into through new step through the electronic program. This program is called managing an account application. the framework of the banks accounts and it capacity depend on the management of data collection, build up the stock, cash exchange, and organized record (Srivastava & Saraswat, 2012).

Electronic banking is acknowledged as Electronic Funds Transfer (EFT). E-banking is essentially depending on the internet through the computer system. The electronic money is transferred from one bank account to another bank account without any paper money or cheque, changing hands and without the direct involvement of bank staff. In a bank transaction, the electronicfund's transfer program is most regularly used in direct deposit in which payroll is deposited straight into an employee's bank account. It is used for payroll payment, credit or debit transfers, ATM, utility bills for our account, and our

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auto loan even our mortgage payment. One can also buy food, grocery, fuel, and other goods at the purchasing point using a credit card, ATM rather than cash. One can use a prepaid smart card embedded for daily purchasing like the pay phone, toll payments, and daily expenditure from electronic funds transfer (S. Bukhari & M. Rahimuddin, 2010).

4.2 Evolution of Electronic Banking

Emerging developments in the field of information and communication technology are creating a sense of competition in financial institutions throughout the world. Parallel to that field, e-banking has introduced some revolutionary steps which facilitate the development of a flexible payment method and user-friendly banking applications. It provides a more conducive environment for the business community. In the current era, online banking was bringing a huge evolution in the banking industry like automated teller machines, phone banking, credit cards, mobile banking and electronic cash(Jeevan, 2001; Mia, Rahman, & Uddin, 2007; Sarlak & Hastiani, 2011). Now all over the world, countries has become a global village. Electronic banking in Pakistan is bringing many changes. Through e-banking, customer processes his transaction without visiting the branch or his bank. E-Banking makes the customers permit for accessing their accounts through their personal computer or any other means of communication. While using this facility, one can shop, observe his accounts transactions, pay off the utility bills, take part in tendering, auction events, and make the transfer of many throughout the clock in all over the country, rather in the world(S. A. A. Bukhari & M. Rahimuddin, 2010).

In a study(Goi, 2015; Sarlak, 2010) explain that E-Banking system itself has many benefits as it provides an easy way to monitor the accounts, one can shop, pay utility bills, buy different items of needs, one use it to take part in an auction at anywhere or anytime and transfer money easily from online system. It saves our time reduces costs and many others. E-banking system is very significant and powerful and its structure depends on many factors. The financial institutions can choose their e-banking system configuration, including outsourcing and relationships, based on four factors: first; the strategic objective for e-banking, second; scope, scale, and complexity of equipment, systems and activities, third; technology expertise and finally; security and internal control requirements.

In his proceedings (Dar, 2010) says that E-banking systems depend on different common components and processes. These components provided the base for

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the e-banking services. The detail of these factors is website design and hosting, Firewall configuration and management, Network administration, Security management, Internet banking server, E-commerce applications (e.g. bill payment, lending, brokerage), Internal network servers, Core processing system, Programming support, and Automated decision support systems. All these components have importance in providing the E-banking services and have separate value.

4.3 Historical Perspective of E-banking in Pakistan

The electronic bank was introduced in Pakistan in 1987, the first automated machine (ATM) was installed in Pakistan by Habib Bank Limited. Nearly a decade ago, ATMs were not familiar with the general public and developed ATM cards that grew very slowly. . After the launching of ATMs by the State Bank of Pakistan (SBP) in 1999, the formation of the national exchange program in 2002 welcomed the issuance of electronic banking and ATM issuance and it's followed by the adoption by the Banking system in Pakistan in 2002. The banks started mail to their account card holders and connect them with both switches 1LINK and MNET (electronic Media Network) (an interbank connection platform for online financial transaction processing and management services). Now the E-banking system is not new in Pakistan. All of the progress of e-banking is due to the true efforts by State Bank of Pakistan(Zubari, 2017) like:

- Stat bank of Pakistan had initiated and provided a favorable environment for the policy makers to develop a full fledge online banking System.
- Until the 1990s, the introduction and progress of automated teller machines and cards were slow in the general public. After 1999, the National Bank of Pakistan took note of the importance of e-banking projects (ATM and cards). In 2002 Stat Bank of Pakistan give instructions, all banks to their account holders and connected to any one of the two switches (1link and MNET).
- Even in the late 1990s, the growth of ATM and the issuance of cards were still not progressing. The actual growth of the automated teller machines and card issuance was discovered after the formation of the 1999 national switch and then accelerated by the 2002 SBP notice to the bank issuing cards to their account holders and connecting to any of the two switches (1Link and MNET) One.

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- Under the efforts of SBP as a regulatory body, cards are issued to banks for banks and paved the way for bank accounts on ATM by integrating banks with 1LINK or MNET.
- SBP later authorized two interconnected networks in 2006, which makes it possible for any cardholder of any bank to obtain cash from any ATM in any bank in Pakistan.

With the growth of the economy (Pakistan, 2017), the financial transactions increased in great numbers and it was felt to extract more benefits from the switching network. This led to some innovative solutions:

- Making banking easier, faster, more cost-effective, and reliable. 1-LINK offers Visa and Union Pay cards to increase the availability of plastic cards outside of Pakistan.
- IBFT and UBPS can easily transfer funds to other accounts quickly and pay utility costs from any alternative delivery channels that were previously limited to the branch office.
- This growth soon led to the need for a non-stick banking business. Non-branch banking has grown significantly over the past few years.
- Fist time mobile banking plotted in Pakistan no account, one such example is Telenor and Tameer Microfinance Bank to launch Easy Paisa which provides real-time remittance, local remittance through its huge agent and mobile phone network.
- U-Payments is another mobile banking platform set up by Ufone allowing bank customers to trade securely through USSD. The same use of online banking channels also quickly catching up with almost all of Pakistan's banks.
- In order to understand the growth of electronic banking in Pakistan, it is necessary to take into account changes in the number of infrastructure over the years.
- The initiative to provide card services such as Visa and Union Pay increased the acceptance of plastic cards outside of Pakistan.
- IBFT and UBPS make it easy to transfer funds quickly to other accounts and pay utilities from any delivery channels that are previously limited to the branch office.

5. Aims of the Study

- To find out e-banking executed by Banks banking sector in Pakistan.

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- To define role of information technology towards the growth of E-Banking in current era
- To find out the Improvements in Information Technology in banking sector (Islamic and Conventional) of Pakistan step by step
- To explore the progress of e-banking in Pakistani banking industry after adoption of this mechanism (2006 to2017).

6. Methodology

In this research effort "Convenience Sampling" has been used. The quantitative and qualitative both methods were used in this study. The quantitative data collection through questionnaire-based survey to nature of e-banking data in Pakistan and the qualitative method is used for data collection from research articles, books journals, and national and international publications on e-banking system. The platform which helped us to choose the banking sector is the website of State Bank of Pakistan. This website of banks provides all essential information of the online banking.

6.1 Sampling

A total of 300 usable responses were analyzed for the banks. The questionnaire was filled through the customers directly either by hand or through correspondence i.e email, posts etc.

6.2 Research Tools

The simple percentage analysis of research tools are used for analyzing data

6.3 Limitations

Keeping in view the workload, only conventional and Islamic Banks are selected. Moreover, the primary data collection area is the District Lahore. The secondary data collection source is internet websites, journals, and reports of State Bank of Pakistan.

7. Result and Discussion

The result found out by the experimental data collected from the questionnaire by distributed and results of the data have been presented by showing graphs and designing tables. The research methodology based on the hypothesis, which

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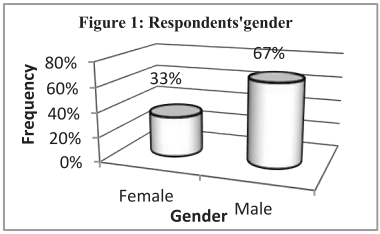
has been described individually on the basis of statistical characterization of the population, also explaining e-banking product and services

Table 1: Gender Wise Distribution of Customers

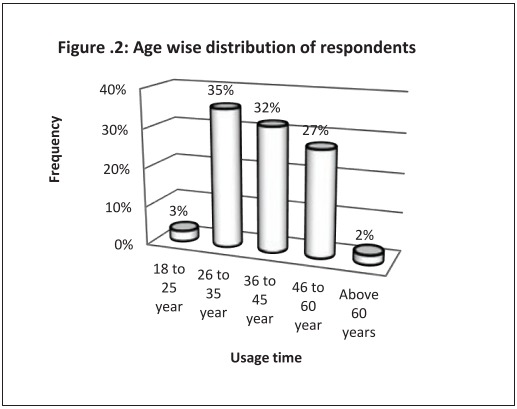
Serial#	Gender	Frequency	Percentage
1	Female	93	33%
2	Male	189	67%
	Total	282	100%



- Table 1 displays the gender-wise distribution of the bank's customers in Pakistan. Out of the 282 questionnaires, the highest percentage of male customers is (189) 67% and the female customer is (93) 33 %. Most of the customers are related to business. That is why the ratio of the male is greater than female (in this detail, the frequency explains the table and percentage explains the graph).

Table 2: Age Wise Distribution of the Customers

Serial#	Age	Frequency	Percentage
1	18 to 25 year	8	3%
2	26 to 35 year	100	35%
3	36 to 45 year	90	32%
4	46 to 60 year	77	27%
5	Above 60 year's	7	2%
	Total	282	100%



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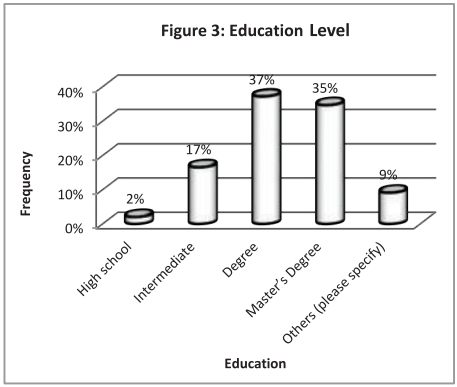
- Table 2 shows that the highest percentage of customers lie in 26 to 35 years age group 35% than 36-to 45 years age group have 32% and the customers who lie in between 46 to 60 years show the percentage of 27% and the rest of the respondents that shows the listed percent of age group lie between 18 to 25 and over 60 years respondents are 2% and 18 to 25 years age group are showing 8% in the result. This data is further explained with the help of a bar graph (figure 2). The results show that large numbers of respondents fall in to 26 to 35 years age group.

Table 3: Educational Qualification of the Customers

Serial#	Education	Frequency	Percentage
1	High school	6	2%
2	Intermediate	47	17%
3	Degree	105	37%
4	Master's Degree	98	35%
5	Others (please specify)	26	9%
	Total	282	100%



- In the Table 3 observed the educational qualification of the respondents. The highest number of customers is 105 that is 37% from total percentage of respondents at the degree level education. After this master degree holder is 98 that is showing 35%. Rest of all is having less percentage than these 2% respondents are from high school and 17% respondents are from intermediate respectively. This data had been collected from Lahore district where the literacy rate is 88% where almost 72 % respondents are stand up to intermediate.
- Figure 3 further clarify the education level of e-banking. The results show in this figure that huge numbers of respondents are Degree and Master Degree holders. The last quantity of respondents are the high school education level.

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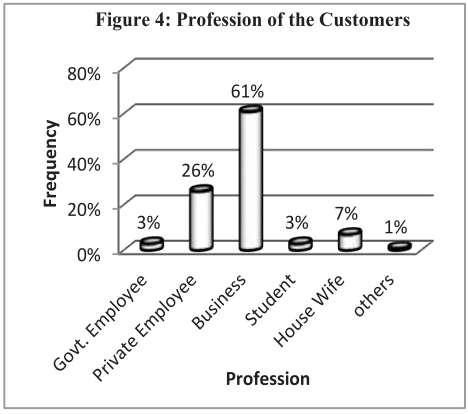
Table 4: Profession of the Customers

Serial#	Profession	Frequency	Percentage
1	Govt. Employee	9	3%
2	Private Employee	73	26%
3	Business	171	61%
4	Student	8	3%
5	House Wife	19	7%
6	others	2	1%
	Total	282	100%



- Table 4 mentioned the profession of total customers in my survey. According to this Table, approximately 3 % customers are a government employee, 26 % customers are doing the private job, 61 % of customers are an adopter of businesses, and the rest of 3% respondents are students, 7% respondents are a house wife and 1% are others etc. The highest ratio of the customers was 171 and 73 which linked with business and private job. And mostratioswere calculated at 9 and 2 which are government employees.
- The professions of the respondents in Pakistan are described in figure 4. The results show that a huge quantity of respondent's profession is a business.

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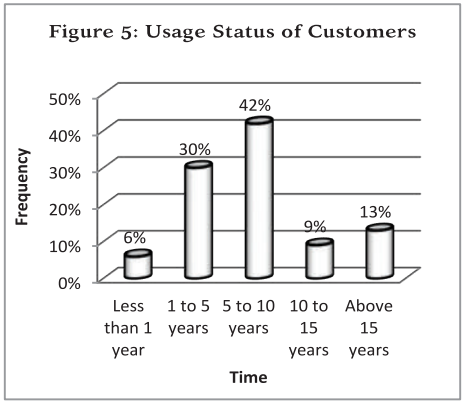
Table 5: Usage Status of Customers

Serial#	Profession	Frequency	Percentage
1	Less than 1 year	17	6%
2	1 to 5 year's	85	30%
3	5 to 10 year's	119	42%
4	10 to 15 year's	24	9%
5	Above 15 year's	37	13%
	Total	282	100%



- Table 5 shows the usage status of the e-banking customers. I have evaluated that 6 % customers are used e-banking for less than one year, 30% of customers are using from 1 to 5 year's. The highest users of the e-banking in Islamic banks are 42%, which are utilizing its services from 5 to 10 year's. The 9% of customers are using e-banking for above 10 to 15 year's age group and 13% customer is using the e-banking above 15 year's. There are 204 customers that are using from 1year to 10 year this technology respectively.
- The usage status (usage of e-banking time duration) is described in figure 5. The results show that large numbers of customer used the e-banking facility from 5 to 10 year's. Secondly, usage is 1 to 5 year's; other options are very low from them.

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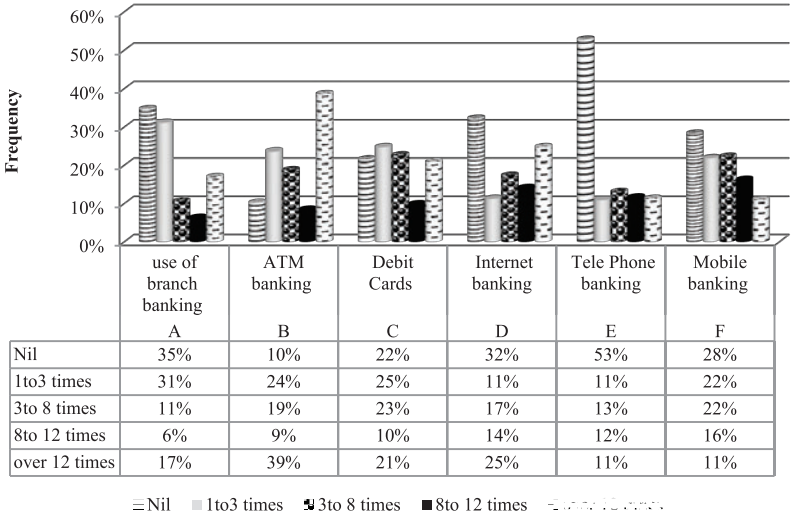
Figure 6: A Review About E-banking Product Queries From the Side of Customers Per Month.



	use of branch banking	ATM banking	Debit Cards	Internet banking	Tele Phone banking	Mobile banking
	A	B	C	D	E	F
Nil	35%	10%	22%	32%	53%	28%
1to3 times	31%	24%	25%	11%	11%	22%
3to 8 times	11%	19%	23%	17%	13%	22%
8to 12 times	6%	9%	10%	14%	12%	16%
over 12 times	17%	39%	21%	25%	11%	11%

The question is how frequently do you use the following e-banking services per month? We dividedthis part into six questions. The detail of these question is below.

- In the figure 31% respondents are using the branch banking (e-banking services per month)1 to 3 times monthly, 11% customers used 3to 8 times monthly,6% customers are using 8 to 12 time and 17% customers used above 12 times per month.
- In the figure 24% respondents have used the ATM banking (e-banking services per month)1 to 3 times monthly, 19% customers used 3to 8 times monthly, 9% customers are using 8 to 12 time and 29% customers used above 12 times per month.
- In the figure 25% respondents have used the Debit card (e-banking services per month)1 to 3 times monthly, 23% customers used 3to 8 times monthly, 10% customers are using 8 to 12 time and 21% customers used above 12 times per month.

- In the figure 11% respondents are used the internet banking (e-banking services per month)1 to 3 times monthly, 17% customers used 3to 8 times monthly,14% customers are using 8 to 12 time and 15% customers used above 12 times per month.
- In the figure 11% respondents have used the telephone banking (e-banking services per month)1 to 3 times monthly, 13% customers used 3to 8 times monthly,12% customers are using 8 to 12 time and 11% customers used above 12 times per month.
- In the figure 22% respondents have used the mobile banking (e-banking services per month)1 to 3 times monthly, 22% customers used 3to 8 times monthly,16% customers are using 8 to 12 time and 11% customers used above 12 times per month.

All of the ATM card, credit card, and Mobile Banking are used more than other products and branch banking total usage is 65%, ATM total usage is 90% , credit card total usage is 78%, internet banking total usage is 68%, telephone Banking total usage is 47% , mobile banking total usage percentage is 72% respectively.

Table 6: Progress of E-banking in Pakistan from 2006 to 2016.

Year	Infrastructure	Frequency
2006	Real-Time Online Branches (RTOBs)	3,555
	Automatic Teller Machine (ATMs)	1,612
	Point of Sale (POS)	32,331
2009	RTOBs	6,040
	ATMs	3,999
	POS	48,399
2012	RTOBs	94412
	ATMs	6987
	POS	34,879
2016	RTOBs	13899
	ATMs	12,352
	POS	50,769

Source: State Bank of Pakistan 2017 (Zubari, 2017)

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Figure 7: Progress E-banking in Pakistan from 2006 to 2016.

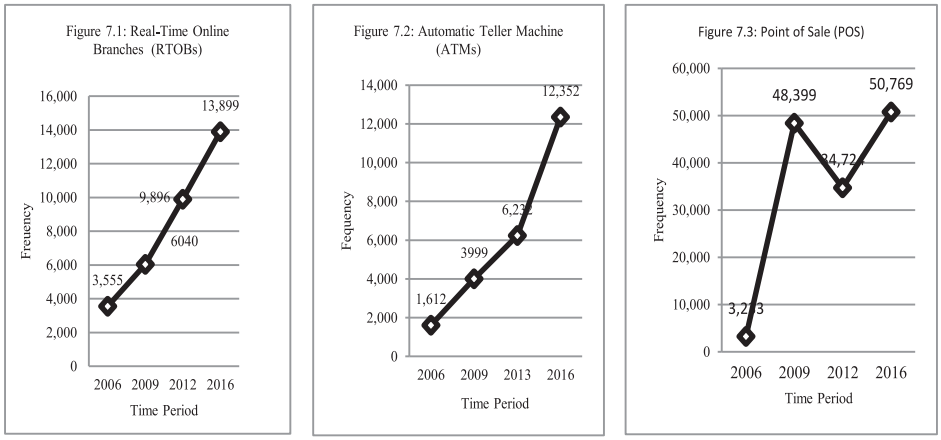

Figure 7.1 shows that the RTOBs (Real-Time Online Branches) is increased in previous ten years and in Figure 7.2 described the status of ATMs. This figure shows that the ATM machines are increased day by day. The Figure 7.3 gives details of Point of Sale (POS) and fined increasing trend in POS. all of these study shows that e-banking become popular day by day in Pakistan.

Table 7: Progress E-banking Transaction From 2006 to 2016 (Source: State Bank of Pakistan 2017).

Year	Infrastructure	Quantity
2006		
	Plastic cards issued in the country	5.1 Million
	Overall E-Banking transactions	9.5 Million
	Value of transactions	262 Billion

2009		
	Plastic cards issued in the country	17. 95 Million
	Overall E-Banking transactions	37.7 Million
	Value of transactions	3.6 trillion
2012		
	Plastic cards issued in the country	20.72 Million
	Overall E-Banking transactions	79.45 Million
	Value of transactions	Rs:7.6 Trillion
2016		
	Plastic cards issued in the country	115.9 Billion
	Overall E-Banking transactions	9.3 Trillion
	Value of transactions	Rs.231.7 Trillion

Table 7 show Progress E-banking transactions from 2006 to 2016, Plastic cards issued in the country were 5.1 million in 2006 and increased after ten year 11.5.9 billion. Overall E-Banking transactions were 9.5 million in 2006 and in 2016 are 9.3 trillion. The value of transactions was 262 Billion in 2006 and in 2016 are 231.7 trillion. So the result shows that Progress E-banking transactions from 2006 to 2016 are enhanced and the trend of electronic technology between generation of Pakistan is also heal thier.

8. Conclusion

The present study shows that e-banks have an indirect impact on the customer's satisfaction and update of the banking system with the current era. The study revealed that the most of the people are using e-banking with highest usage level is 9.3 trillion overall e-banking transaction in 2016 and 79.45 million overall e-banking transaction in 2012 which is many times less than 2016 e-

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banking transaction. The user of this type of banking is mostly young or middle-class generation. The dissatisfaction level was found up to 9% among the people and the other 22% are neutral. This dissatisfaction was mostly attributed to the lack of knowledge. They feel hesitation because they are not aware of computer technology.

9. Recommendations

It is important for the banks to provide customer's basic requisite with information about various competitive services. It is too significant to create awareness of the information technology and relative advantages of e-banking service. The customer satisfaction has importance if he is educated by information technology (Information about certain Islamic banking products on the leaflet/ brochures/ website can be easily understood and sufficient to educate new/old users) and computer technology. Otherwise, the customer cannot satisfied. Banks must maintain long-term relationships with their customers; it is necessary to satisfy them from their e-banking product and service to provide a base in the future. It is important to use specialists in the field of electronic website design because the site's attraction requires experience in this area to support the customer's attraction and benefit from the experience of the developed countries in software technology to control and protect customer information to enhance the current Bank software application.

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