

Customer's Acceptance of Internet Banking in Dubai

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Abstract: This paper presents the status of internet banking in Dubai, the factors that act as effective tools in acceptance of internet banking and the barriers that slowdown the pace of its adoption. The paper is based on the qualitative research methodology discussed in the research model 'Onion'. 227 responses received through a 'Survey' conducted with the help of a structured questionnaire were statistically analyzed by SPSS. The study finds that convenience, safety and security are the main driving factors in acceptance of the internet banking. Poor quality of internet services, slow computers, absence of direct contact with the bank officials, lack of familiarity with computers and internet are the main barriers in the growth of internet banking in Dubai. Finally, the study suggests measures to improve banking operations with the use of internet banking in Dubai.

Key words: Advantages and disadvantages of internet banking, Barriers, Best practices, Customer attitude, Internet banking.

I. Introduction

Banking industry is a mix of small, medium and large size banks, which offers different levels of quality services to their customers. With the increase in business activities, banks have now opened up a large number of branches to serve the needs of their customers, scattered over a large geographical boundary. Some of the customers are quite demanding and prefer to deal with banks, which can meet their specific needs. Degryse and Ongena [1] observe that banks also face competition like any other industry. In order to satisfy their customers, banks try to give services of high quality and adopt new channels of operations such as internet banking and mobile banking.

II. Problems in Banking Operations

Banks have to take care of the requirements of all types of customers, big or small. Some of the common problems faced by the customers in banking operations can be traced as below:

Lots of time is spent in commuting to the bank especially in regions where only few branches may be operating. The problems are more serious if the number of visits are more during the day.

Banks are over-crowded with long queues during the peak working hours. Customers have to stand in queue for hours.

- Bank employees are least concerned with the inconvenience and time of the customers and are discourteous in behavior in many banks.
- Delays in processing of loans for purchase of property, car, plant and machinery, and for higher studies associated with repeat visits to the bank are issues of great concern to customers.
- Tracking of money sent to someone takes long time in some cases. This creates lots of difficulties to the sender as well as to the receiver of the money.
- Even very small issues like closing of account or transfer of account takes long time.
- Customer has to visit the branch even for small clarification.

III. Literature Review

Over the years internet banking has drawn lots of attention all over the world. A large number of research papers have been written covering various aspects relating to internet banking. Literature review in this paper focuses on the aspects shown in Fig. 1.

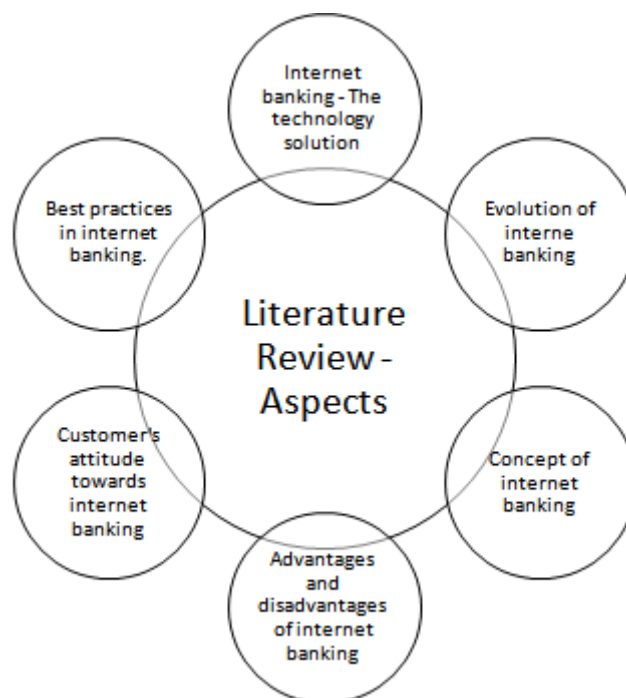


Fig. 1: Literature Review – Aspects

3.1 Internet banking – The technology solution in banking

Technology has been a driving force in changing the business processes and quality of services. Keivani *et al.* [2] argue that e-commerce has become an important and necessary factor in the business strategy. They further add that the new electronic system especially the development of internet business in the last century has made a significant impact on the way, the business is conducted. Huges [3] states that with the advancement in electronic distribution channels, financial industry has witnessed a faster change in the technology, greater competition among the enterprises and increase in the customer's needs. The technology based transactions have an influence on the thinking and the operational response of the banks [4]. Barnes and Howlett [5] say that E-business has changed the traditional relationship between the banks and its customers and has reduced the personal contact between them. This changing scenario has an impact on the operating practices in the banking industry.

3.2 Evolution of internet banking

In 1990, banks realized the importance of World Wide Web (www), which offered tremendous opportunities to advertise their services [2]. In the initial days of introduction of www, the banks used this new technological tool in presenting their company's brochures showing the office building, infrastructure and location maps. According to Cronin [6], four major banks (Citibank, Chase Manhattan, Chemical and Manufacturers Hanover) in New York, USA started offering the internet banking services also known as online banking in 1981. Even though the regular use of e-banking services started by mid 1990s but some of the customers have been reluctant to do financial transactions on the web. They did not have the confidence in internet banking. The practice of making online payment for the purchase of items was started by American companies like America Online, Amazon.com and eBay. E-banking gained popularity in USA by the year 2000 when about 80 per cent of US banks offered e-banking services.

3.3 Concept of internet banking

Keivani *et al.* [2] explain that customers access their bank account using the internet and carry out the required banking transactions like seeing the balance in the account, all transaction carried out in their account during the period of his interest, transferring the fund from one account to another within the same bank or transferring funds from one bank to another bank. Number of terms are used interchangeably for internet banking, for example, virtual banking, online banking, home banking, remote electronic banking, and phone banking. The most commonly used terms are net-banking or online banking. Arunachalam and Sivasubramanian [7] explain the internet banking as a process in which a customer uses his (her) personal computer (PC) or mobile phone and the web-browser to access his or her bank account. Ongkauwan and Tantichattanon [8] state that in internet banking operation, a customer can use the banking facility of the bank to access and perform

financial transactions on his bank account by using his computer and connecting the same with the bank's websites at any time and from any place. Khan [9] also suggests that internet banking system permits the customers, individuals as well as the businesses to carryout financial transactions on the bank websites. Kim *et al.* [10] explain the internet banking as an activity for the financial transaction on the internet.

3.4 Advantages and disadvantages of internet banking

Koskos [11] suggests that banks are able to provide internet banking services at economic rates as they pass on the savings in labor and overhead costs to their customers. He further observes that internet banking offers both the advantages as well as disadvantages to the customers. Internet banking enables the banks to offer higher interest rates on deposit accounts, loans at lower rates and reduced service fees.

3.4.1 The advantages

The advantages include customer's convenience, more beneficial rate to customers, additional free services, mobility in operations, unlimited transfers at no cost, ease of use and environment friendly (Fig. 2).

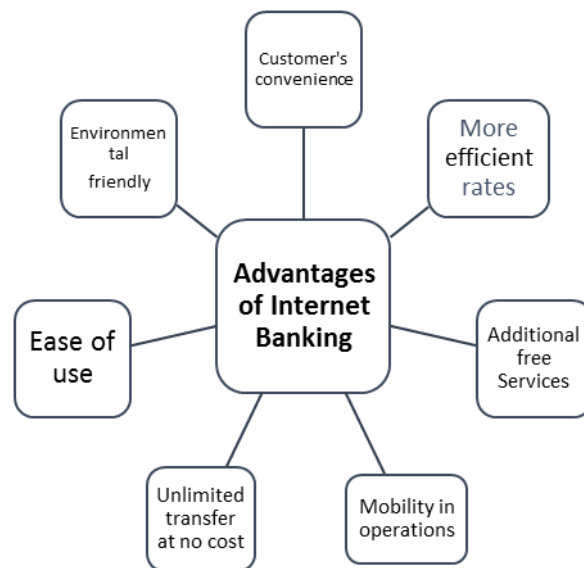


Fig. 2: Advantages of Internet Banking to Customers

3.4.1.1 .Customer's convenience: Customers can access and do transaction 24 hours a day, 365 days a year. Narsi, W [12] and Shanab, E. A. et al [13] also observed that the convenience is an important factor in support to internet banking. However, if the internet service is not available at any time, customers can still do their work via mobile telephones. Banking through internet is faster, easier and more efficient.

3.4.1.2 More beneficial rates: Banks offering internet banking services, especially the direct banks which do business only through internet, saves money due to less or very little infrastructure and overhead costs. They are able to pass on these savings to their customers in the form of higher interest rates, lower rates on loans and lower mortgage charges. In addition, the benefits are also offered in other forms like no minimum deposits and carry no minimum balance or service fees.

3.4.1.3 Additional free services: Additional free services offered to the customers include payment of bills online such as electricity, water and telephone bills. Banks also provides management tools to customers to carryout budgeting, forecasting, financial planning, loan calculations, investment analysis etc.

3.4.1.4 Mobility in transactions: Internet banking can be done from anywhere at convenient time. The facility of doing banking through mobiles and smart phone is an additional advantage.

3.4.1.5 Unlimited transfers at no cost: Internet banking can do automatic transfer of funds from one account to another. They also do payroll payments and automatic bill payments as per the direction of the customer.

3.4.1.6 Ease of use: Online banking enables similar transactions as that of traditional banking. In case of a problem, the customer can get assistance online or by email.

3.4.1.7 Environment friendly: Internet banking is free from generating pollution as one has not to visit the bank using his car or other mode of transportation. Internet banking provides a paper-less work environment without the need for any equipment or a building.

3.4.2 The Disadvantages

Koskos [11] highlights some of the disadvantages of internet banking such as lack of personal relationship, issues relating to transactions, service issues and security issues (Fig. 3).

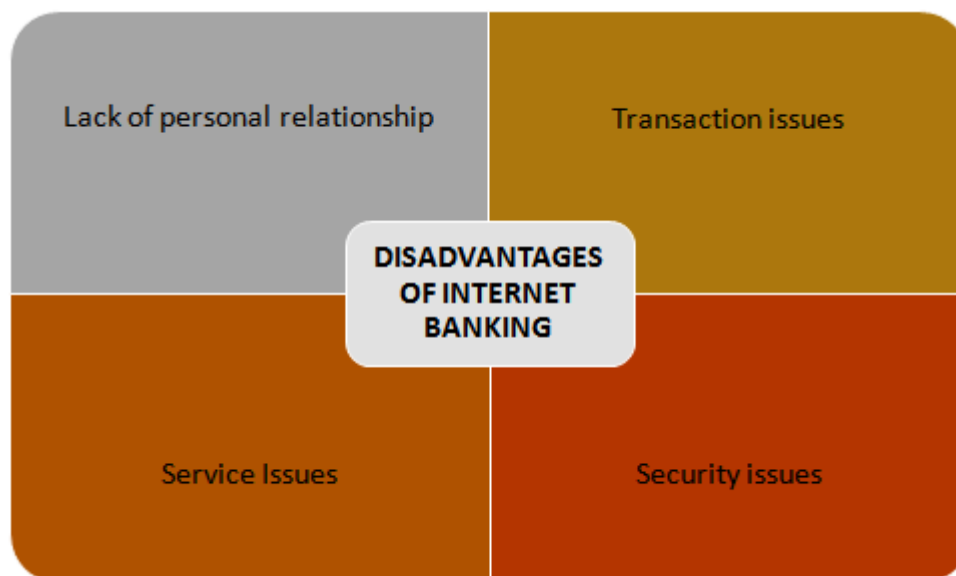


Fig. 3: Disadvantages of Internet Banking

3.4.2.1 Lack of personal relationship: Personal relationship developed over the years with the bank manager and other officials makes the customer comfortable with any help required to solve problems. Bank managers are very helpful in advising the right solution and also in providing loans easily. Some of the discretionary powers of the bank manager can solve the customer's problems easily. Customers of internet banking miss this great facility of personal touch.

3.4.2.2 Transaction issues: In case of traditional banking, any transactional issue can be easily sorted out on the counter by discussion with the bank employee. If the employee has some reservations in solving the issue, senior officer or the bank manager can be approached to get the matter resolved. This facility of solving the issue is very difficult in the case of internet banking.

3.4.2.3 Service issues: Some of the special services required by the customers such as investment advice, insurance services at better premium or bank signature guarantees are easily available in traditional banking operations. Internet banking cannot support such needs of the customers.

3.4.2.4 Security: Although internet banking provide protection to its customers by encryption software but in reality it is observed that accounts are victims of phishing, hacker attacks malware and unauthorized activities [14]. The customers are always having some concern about the theft of passwords and other personal information [15].

According to a press release (2012-07-05) titled 'ON-LINE-BANK-ROBBERIES-REVEAL-SECURITY-GAPS' [16], it is reported that organized group are involved in bank robberies online. According to the report, the bank's online attacks drew attention for three reasons, which are:

- i. The attackers reduced the manual intervention to a minimum relying mostly on automation. Since the attacks were fast, they were easily missed by the user.
- ii. Robbers bypassed the bank's protection systems. User could not detect this right away as the fraudulent transactions were hidden by malware (inserting java script code into the pages).
- iii. PCs from users with high balances were targeted (about 5000 PCs in Netherlands.)

3.5 Customer's attitude towards internet banking

Jahangir and Begum [17] state that many of the banks are providing internet banking services benefiting their customers, employees and management but the adaptation of internet banking is still to be

picked up due to customers perception and attitude to it. According to Gerrard and Cunningham [18] and Sathey [19] banks are looking for aspects that would induce the customers to adapt to internet banking. Jahangir and Begum [17] report that many researchers such as Sayar and Wolfe [20], Ericsson *et al.* [21], Gerrard and Cunningham [18] have focused on the aspects of adaptation of internet banking. Jahangir and Begum [17] further add that the Technology Acceptance Model (TAM) [22] and [23] is one of the most widely accepted model. TAM suggests that adaptation behavior of the customers is mainly dependent on the intention to use the internet banking. The intention of the customers to use the internet banking again depends upon perceived usefulness and perceived ease of use. However, Moon and Kim [24] expressed their reservation to this stating that TAM does not reflect the specific influence of the technology and the usage factors. Jahangir and Begum [17] added two new factors, the security and privacy and the customer attitude to TAM model in their research on internet banking in the context of Bangladesh.

3.5.1 Customer's attitude towards internet banking in Bangladesh

Jahangir and Begum [17] suggest that customer perception has become very necessary for the success of providing internet banking services. It is concluded that customer attitude performs a mediating role in the link between perceived usefulness, ease of use, security and privacy, and customer adaptation.

3.5.2 Customer's attitude towards internet banking in China

Sylvie and Xiaoyan [25] investigated the market status for online/mobile banking in China and found that issue of security was the most important factor that motivated the Chinese customers to adopt online banking. Perception of risks, computer and technological skills were found to be the main barriers for online banking.

3.5.3 Customer's attitude towards internet banking in UAE

Mansumittrchai and Chiu [26] focused to identify the characteristics of UAE consumers and their attitudes toward the internet banking. They found that adopters and non-adopters of internet banking differ on their perceptions of online banking on three factors: compatibility, trust and human contact. Adopters had high value on compatibility and trust, while non-adopters had a high value on human contact. Customers of online banking favored it for the reasons of ease of use, convenience and twenty-four hour availability of services. Trust is one of the most important attribute for adopting the online banking. Non-adopters of online banking in UAE consider online banking as risky. Compatibility of using online banking was an important attribute to non-adopters, who felt that online banking is not the way of their life. Non-adopter customers were of the opinion that online banking is not safe, the trust in the internet technology was low and did not feel that their privacy is protected. One of the most weighing factors for non-adopters is the lack of human touch.

3.5.4 Customer's attitude towards internet banking in Turkey

Mermod [27] discussed many aspects of internet banking and the attitude of customers in the use of internet banking in Turkey. He finds that education and income level makes an important difference in the use of internet banking facilities. It is further brought out that no significant relationship existed between the age level of the users and the internet banking usage. The relationship between the gender and the usage of internet banking was also not significant. Mermod [27] concluded that habits and easiness are the most important factors in choosing an online bank. The most commonly used internet banking service is transfer of funds from one account to another account followed by EFT (Electronic Fund Transfer) and payment of bills. Buying and selling of treasury securities, applications for personal loans, social insurance premium payment and tuition payments are the least used services in internet banking. The most preferred online service by the customers is 'bill payments'.

Mermod [27] concludes that majority of the Turkish online customers believe that internet banking is safe, cheaper and understandable and saves time. These are the driving forces which attract them to use internet banking. On the other hand, they prefer traditional banking for the reason of face to face interaction which is absent in case of internet banking.

3.5.5 Consolidation of views on customer's attitude towards internet banking

The attitude of customers vary on account of various factors such as demographic differences, language, age, sex, education, knowledge of computers, availability of computers, availability of internet, reliability of internet facilities, readiness of the banks with the required software, hardware and the competent manpower. Situation differs from one country to another country based on the economic condition, technology status and the environment. This has been demonstrated by the surveys done for assessing the attitudes of customers in Bangladesh, China, UAE and Turkey. These studies have brought out that most important driving force for the use of internet banking is convenience, privacy, economy and safety. The studies also brought out

the most important consideration in using traditional banking system in comparison to internet banking services is human contact or face to face interaction of the customers with the bank employees.

3.6 Best Practices in Internet Banking

Talpos [28] discusses the best practices, which can help to achieve the objective of attracting new customers and to expand the existing customer base. Banks should ensure the continuity of the services offered to the customers. According to Talpos [28], following approaches can be adopted by banks to maintain the continuity of service:

- i. Ensure automatic routing and balancing of traffic by using 3DNS/BigIP equipment between the servers installed in different locations at far off places. BigIP identifies the potential fault and to reroute the traffic to the pairs of servers which are functional at that moment.
- ii. There should be two Internet service providers to act as standby to each other. This will ensure continuity of both the accessing as well as processing equipment.
- iii. Put the system's server such as IIS Web, SQL or Oracle in a cluster to enable separation of the defective mechanism of one by automatic switchover to other server. It is suggested to install these servers in distant and separate places so that the one affected can be isolated from others in case of major malfunction or other happenings like an earthquake, fire or flood. This will ensure continuity of the service to the customers without any other problem.
- iv. Banks should have 'Backup & Recovery Plan' to restore the Internet Banking services in case of a sudden and unforeseen situation.
- v. Both the hard-wares and the soft-wares, applications and services should be with modern monitoring systems. This will help in generating automatic alerts.
- vi. All the system's equipment such as computers, servers should be kept in a safe and protected place with strict enforcement of system and procedure to access. They could be assessed only by using the User's IDs and Passwords.
- vii. One of the most important security concern is to check on false identity. Protection against identity substitution and transfer of information under false identity is one of the biggest challenge today. 'Multifactor Authentication' is a banking application to reduce the risks of assessing the user's information and provide enhanced security online. Talpos [28] argues that the 'Multifactor Authentication' application is based on 5W model asking 5 information: What you know? What you have? Who you are? What you do? Where you are? HDFC bank also uses a similar system. Opineariu [29] reports that MFA solution has been successfully used by Alliance Leicester Bank, U.K., in which the user id asked PIN and Password, unique image previously selected by the client and phrase combination.
- viii. Resistance to stiff competition in Internet banking is based on factors like differentiation, diversification, innovation, flexibility, emancipation, etc. Citibank UAE was chosen as the first UAE bank to offer Internet banking services based on the competitive position it has acquired [30].
- ix. Banks are improving the quality of help-desk to bridge the gap created by internet banking where the customer does not interact face-to-face. Taplos [28] suggests 'Internet Banking Video Helpdesk' as a possible solution. The customers will be very comfortable with this type of communication, a combination of voice and image. Taplos [28] adds that banks must develop strategies to integrate and leverage the competencies for the products and services for broader solutions to the customers. The customer looks for efficiency, comfort and safety of transactions.

IV. Status of Banking Activities in Dubai

Fernandes and Awamleh (2005) state that United Arab Emirates (UAE) is a fast emerging force to be recognized in the world financial scenario. UAE consists of seven Emirates: Abu Dhabi, Dubai, Sharjah, Fujairah, Ras Al-Kahim, Umm Qaiwan and Ajman. Internet Banking is becoming very popular with the customers in UAE due to various reasons. The study carried out by Fernandes and Awamleh (2005) revealed that convenience and security of the Internet banking transactions have a significant impact on the customers. The details of the banks in UAE and Dubai as of December 31, 2013 are given in Table 1. There are 23 national banks with 864 branches and 30 foreign banks with 115 branches in UAE (CBUAE Annual Report, 2013).

Table 1: Details of banks in Dubai as percentage of banks in UAE as of 31.12.2013

Type of bank	UAE				Dubai			
	Nos. of banks in UAE	Nos. of bank branches in UAE	No. of Electronic Banking Services in UAE	% of Electronic banks to total banks in UAE	Nos. of banks having head office in Dubai	Nos. of bank branches in Dubai	No. of Electronic Banking Services in Dubai	% of Electronic banks to total banks in Dubai
National Banks	23	864	29	3.36	8	340	14	4.12
Foreign Banks	30	115	53	46.09	22	48	29	60.42
Total	53	979	62	6.32	30	388	43	9.41

Source: : CBUAE Annual Report 2013, pp 237-38

(Source: CBUAE Annual Report 2013, pp 237-38.)

Head offices of these banks are located in different parts of the UAE but maximum number of head offices are in Dubai. It is observed that 8 head offices of the national banks in Dubai occupy a share of 34.78 percent of the head offices of the national banks in UAE. Similarly 22 head offices of foreign banks in Dubai have a share of 73.33 percent of the total number of head offices of foreign banks in UAE. It is observed that about 40 percent branches of the banks in UAE are located at Dubai alone. The number of national electronic bank in Dubai is 14 out of 29 electronic banks in the whole of UAE forming a percentage of 48.27 %. The number of foreign electronic banks at Dubai is 29 out of 53 foreign electronic banks in UAE taking a share of 54.7%. The electronic banks in whole of UAE are concentrated at Dubai, which takes a share of more than 50% electronic banks. In addition to these head offices and branches, 69 banks have their representative offices in Dubai. The data shows that there are 43 electronic banking services out of 388 number of branches in Dubai, both the national and foreign banks. The percentage of electronic banking services is only 9.41% of all the banking services in Dubai. Thus there is a vast scope for increasing the internet banking services in Dubai.

V. Research Objectives and Research Questions

It is observed from the discussions about the evolution of the internet banking, its concept, advantages and disadvantages, customer acceptance of internet banking and the best practices that internet banking is becoming very popular with the customers in different countries with varied success. The status of internet banking in Dubai shows that there is lot of scope in enhancing its use. This paper searches for the reasons for the present situation of internet banking in Dubai and examines the perception of the customers for internet banking services. The paper also identifies the actions to be taken by the banks in Dubai to increase the use of internet banking and improve their own productivity and profitability. The research objectives and research questions are presented below.

5.1 Research Objectives

- To study the present status of internet banking in Dubai.
- To identify the factors that help in improving the customer's acceptance of internet banking in Dubai.
- To understand the barriers in the use of internet banking in Dubai.
- To develop strategy for popularizing the internet banking in Dubai to make the banks more competitive with larger customer base.

5.2 Research Questions

- What are the driving factors, which have an impact on the customer's attitude towards use of internet banking in Dubai?
- What are the barriers in the growth of internet banking services in Dubai?
- How internet banking can be used as an effective tool in Dubai banks to improve their performance and become more competitive?

VI. Methodology and Data Collection

Well known research model 'Onion' developed by Saunders *et al.* (2003) is used to investigate the research questions. In research model 'Onion', each layer of the onion is peeled off at a time to reach to the center of the onion named as 'data-collection and data-analysis'. The onion model is presented in Fig. 4 with 6 layers of research, the research philosophy, research approach, research strategy, research choice, time horizon and data collection and data analysis (Saunders *et al.*, 2009).

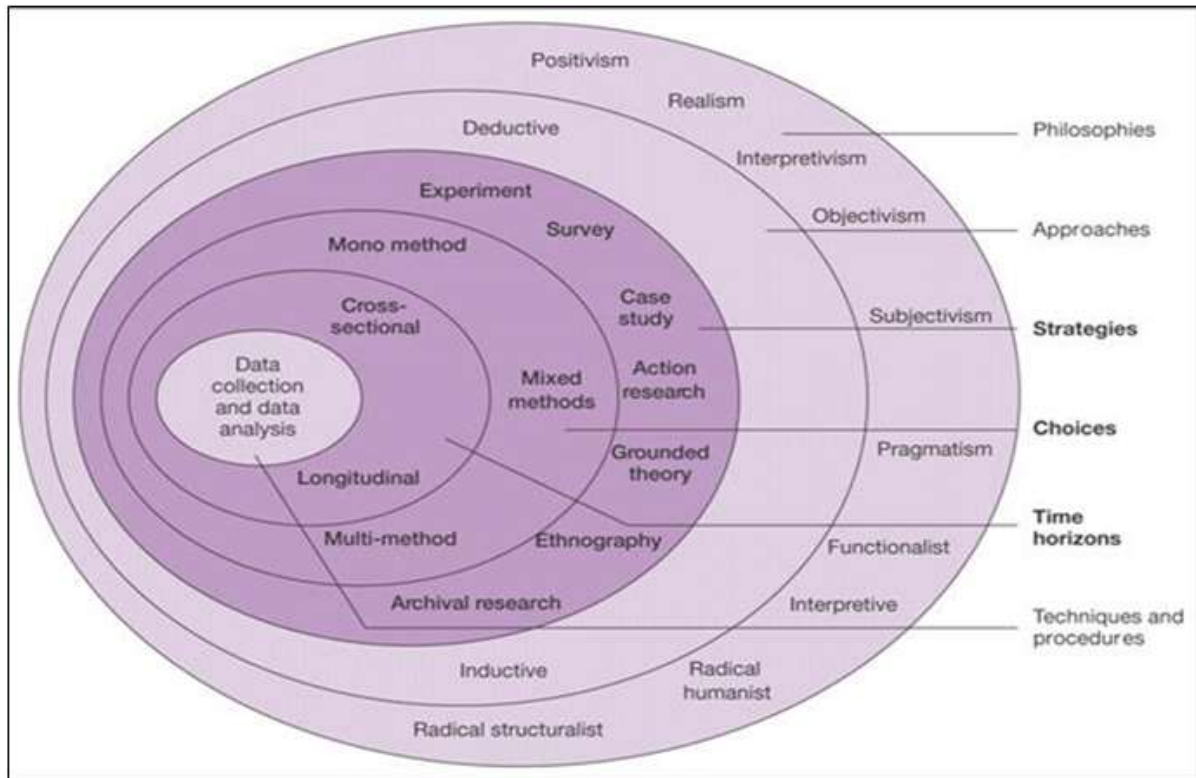


Fig. 4: The Onion research model

6.1 Research Philosophy

The objective of the present research study is to interpret the views of different customers about the internet banking. Interpretivism research philosophy is selected for the present study.

6.2 Research approach

In view of the nature of banking activities, inductive research approach is selected for this study, in which the data is collected through a questionnaire, analyzed and conclusions drawn for decision making to improve the situation.

6.3 Research Strategy

Saunders *et al.* (2003) argue that the overall strategy of the research includes method of data collection through a questionnaire, interview or published data. It also covers the method of data analysis. As can be seen from Fig. 4, there are seven strategy options: experiment, survey, case study, action research, grounded theory, ethnography and archival research. Survey strategy has been followed to collect the data in this research as it is economical way of collecting information on a specific topic of interest. The survey is conducted with the help of a structured questionnaire in order to get meaningful response. The primary data is collected from the response of the respondents. Data analysis is carried out statistically using statistical tool, the SPSS.

6.4 Research Choice

It is difficult to measure of the customer satisfaction in quantitative terms. Quantitative research is not suitable in this case. Customer's opinion is obtained through a questionnaire (Appendix 1) in qualitative terms, which is analyzed to arrive at the conclusions. In order to find out the ranks of the factors, Likert scale 0-5 is used to assign quantitative values to the qualitative aspects of the responses. The research is completely designed and conducted according to the plan. The present research is a qualitative research and uses mono-method focusing on specific issues.

6.5 Time Horizon

According to Easterby *et al.* (2002), cross-sectional study is more suitable for survey strategy. Cross-sectional designs can be used for qualitative research. An aspect or behavior of many groups or individuals can be measured by cross-sectional design. In view of the nature of banking operations cross-sectional time horizon is applicable to the present study.

6.6 Research Sample

There are variety of customers availing the services of the bank. Since it is difficult to reach the customers of different background, the questionnaire is placed on the internet to get the responses. A sample size of 200 respondents is planned to receive the responses

6.7 Primary and secondary data

The success of the research depends on the depth and the quality of the primary data as well as of the secondary data. Primary data is collected by obtaining the responses through a structured questionnaire. Secondary data is collected from various sources like published papers in journals, blog articles, news reports and previous studies.

VII. Data collection, analysis and Findings

7.1 Data collection

A questionnaire containing 30 questions with number of options to respond is developed for conducting the survey. Objectives of the study is explained in the questionnaire. The focus of the questionnaire is to obtain the response of customers of the banks on the following four areas:

- a. Demographic details to get an insight into customer's particulars, which help them to adopt the internet banking.
- b. Factors acting as effective tools to enhance customer satisfaction.
- c. Factors acting as barriers in the use of internet banking.
- d. Factors related to policy matters to popularize internet banking.

Table 2 shows the questions related to the each of the areas. The percentage share the survey questions related to each of the four broad areas is also presented in the Table 2.

Table 2: Percentage share of each of the four areas covered by the questions in the questionnaire

S. No.	Category of questions	Question No. related to the category	No. of questions in the category out of 30 questions	% share of the category by the number of the questions in the questionnaire
1	Demographic details related to usage of internet banking.	1, 2, 3, 4, 5, 6,7	7	23.33%
2	Factors acting as effective tools to enhance customer satisfaction.	8, 9, 10, 11, 12, 13, 14, 15, 16,17, 18	11	36.67%
3	Factors acting as barriers to the use of internet banking.	19, 20, 21, 22, 23, 24, 25, 26, 27	9	30.00%
4	Others factors related to policy matters.	28, 29, 30	3	10.00%
		Total sum of questions	30	

The highest share (36.67%) of the questionnaire is for the area dealing with the factors acting as effective tools to enhance customer acceptance. The area of second highest focus is related to the factors acting as barriers to the use of internet banking. 30 percent questions fall in this area of the survey. Questions on the demographic information take a share of 23.33%. The serial number of the questions of the questionnaire are also indicated in the Table 2.

The questionnaire was placed on the internet using the software 'Monkey Survey'. The bias in responses is eliminated as anybody having an interest in the subject is free to respond. The responses were received during a period of 17 days starting from October 12, 2015 and ending on October 29, 2015. It is heartening to note that 227 respondents participated in the survey against an estimate of 200 sample size, which is 113.5% of the planned sample size.

7.2 Data analysis

Statistical data analysis is carried out using the SPSS software. Analysis of the primary data *received on each question is presented here.*

7.2.1 Age range (Q1)

Maximum percentage (85.48%) of respondents to the questionnaire are in the age group of 18-25 years, followed by 8.8% in the age group of 26-36 years. The percentage share of age groups 36-45 and 46-55 years is equal at 2.64%. It is observed that people above 55 years did not take interest in the survey. Survey shows that people in the age range 18-36 years are interested in internet banking

7.2.2 Gender (Q2)

More than half of the respondents (51.10%) were Female respondents. Rest of the respondents were male with the exception of 3.52% neutral respondents. Gender bias is not seen in the responses.

7.2.3 Nationality (Q3)

Out of 227 participating respondents, 66 (29.07%) respondents were from UAE followed by 45 (19.82%) from Egypt. 16 (7.29%) from Jordan, 10 (4.4%) from Lebanon, 8 (3.5%) from Germany plus rest of the respondents from 33 other countries. Analysis shows that 38 nationalities responded to the questionnaire.

7.2.4 Qualification (Q4)

62.39% respondents are undergraduate followed by 22.57% of respondents with high school or equivalent qualifications. Respondents with Post Graduate qualification are 12.39%. Respondents with professional and Ph.D. qualifications are only 1.33% each. It is observed that the majority of the users of the internet banking are undergraduate and high school or equivalent qualifications.

7.2.5 Which describe you the best as customer? (Q5)

More than half of the respondents (51.30%) are working at managerial positions. Respondents at the officer level are next highest category with 18.52%. Home makers and the people working at clerical level take a share of 14.81% each. None of the respondents are retired persons. The result shows that the use of internet banking is prevalent maximum at the higher level and gradually lowers with the level of the working people.

7.2.6 Income range per month

Respondents have given incoherent data on this aspect. This factor is therefore ignored in the analysis.

7.2.7 Are you familiar with the use of computers and internet? (Q7)

It is heartening to note that 56.89% respondents are fully familiar with the use of computers and internet followed by 24.89% percent as highly familiar, 12.44% as familiar and 3.56% as familiar to some extent. The percentage of respondents not familiar with the use of computers and internet is very small (2.22%). The study shows that familiarity with the use of computers and internet is an important aspect in internet banking.

7.2.8 The internet services are efficient and reliable (Q8)

35.42% respondents strongly opined that the internet services are efficient and reliable. 47.58% respondents agree with this view. 15.98% respondent were neutral about the efficiency and reliability of the internet services in Dubai. A very small percentage of 2.20% of the respondents were not satisfied with the quality of the internet services. Study shows that the internet services are reasonably efficient although there is a need for improvement.

7.2.9 Online banking enables you to operate in privacy (Q9)

26.99% respondents strongly agreed that internet banking enables them to operate in privacy. 42.92% also agreed that they can operate in privacy. 25.66% respondent were neutral on this issue. Only 4.42% respondents disagreed that they have privacy in operations. This shows that majority of respondents consider that internet banking provide privacy in operations.

7.2.10 I feel great security in online banking as my personal data is not shared by anyone. (Q10)

21.24% respondents strongly agreed that they feel great security in online banking as their personal data is not shared by anyone else. 38.05% also consider secured in operations with internet banking. 29.65% respondents were neutral on this issue. Only 11.06% respondents disagreed that they have the security in internet operations. The survey shows that majority of the respondents consider secured in internet banking.

7.2.11 Completion of banking transaction is instantly known. (Q11)

27.23% respondents strongly agreed that completion of banking transactions are instantly known. 44.64% respondents agree with this view. 23.21% respondents were neutral whereas only 4.91% respondents

either disagreed or strongly disagreed about the knowledge of completion of transactions instantly. Survey shows that majority of respondents feel that internet banking transactions are known instantly.

7.2.12 I can do online banking from any place and any time convenient to me. (Q12)

31.86% respondents strongly agreed that they can do online banking from any place and at any time convenient to them. 48.23% respondents also agree with this observation. 13.72% respondents were neutral whereas only 6.19% respondents either disagreed or strongly disagreed. Survey shows that majority of respondents consider internet banking as convenient.

7.2.13 I need not go to bank and stand in long queues for hours. (Q13)

33.93% respondents strongly agreed that they need not go to bank and stand in long queues for hours for transactions. 32.60% respondents also agree with this view. 20.26% respondents were neutral whereas 13.21% respondents either disagreed or strongly disagreed with it. Survey indicates that internet banking saves time and is hassle free.

7.2.14 I am not exposed to heat, cold, rain and dusty environment. (Q14)

27.31% respondents strongly agreed that they are not exposed to heat, cold, rain and dusty environment. 32.92% respondents also agree with this view. 19.38% respondents were neutral whereas only 19.39% respondents either disagreed or strongly disagreed with it. Majority of the respondents consider internet banking as comfortable as they are not exposed to difficult environmental conditions.

7.2.15 Online banking provides me the comfort of working peacefully without external fear. (Q15)

20.89% respondents strongly agreed that online banking provides them the comfort of working peacefully without external fear. 42.22% respondents also agree with this view. 28.89% respondents were neutral whereas 9.00% respondents either disagreed or strongly disagreed with it. Majority of the respondents consider internet banking comfortable and free from external fear.

7.2.16 Online banking saves time and costs both. (Q16)

31.56% respondents strongly agreed that online banking saves time and costs both. 45.78% respondents also agreed with this view. 18.22% respondents were neutral whereas 4.45% respondents either disagreed or strongly disagreed with it. Majority of respondents consider that internet banking is economical from the point of view of savings in transaction time and the cost of doing the transactions.

7.2.17 I have no fear of personal safety and physical harm in online banking. (Q17)

20.35% respondents strongly agreed that internet banking provide them personal safety and they do not have fear of physical harm. 30.09% respondents agreed with this. 31.42% respondents were neutral whereas 18.14% respondents either disagreed or strongly disagreed with it. Survey shows a divided view on the issue of personal safety in internet banking.

7.2.18 There is absolute accuracy in online banking. (Q18)

16% respondents strongly agreed that internet banking provide them absolute accuracy. 40.89% respondents also agreed with this view. 34.67% respondents were neutral whereas 8.44% respondents either disagreed or strongly disagreed with it. Survey shows that although greater number of respondents consider internet banking as accurate, there are a number of respondents who do not share the same view.

7.2.19 Correction of mistakes once made in online banking is very difficult to resolve. (Q19)

16.52% respondents strongly agreed that it is very difficult to resolve any mistake once made in internet banking. 36.61% respondents also agreed with this view. 35.27% respondents were neutral whereas 11.60% respondents either disagreed or strongly disagreed with it. Only a small percentage (11.6%) consider otherwise. Survey shows that more than half of the respondents consider that resolution of mistakes once made is difficult in case of internet banking. There is a need to develop confidence in the customers that if a mistake has taken place in any transaction, the same can be rectified easily.

7.2.20 Non-availability or failure of internet is frustrating experience in doing shopping. (Q20)

23.35% respondents strongly agreed that it is frustrating experience in internet banking due to non-availability or failure of internet. 42.29% respondents also agreed with this view. 25.99% respondents were neutral whereas 8.37% respondents either disagreed or strongly disagreed with it. Survey shows that 2/3 respondents had frustrating experience in internet banking due to quality of internet service. In chapter 7.2.1.8

(Q8), it is observed that internet services in Dubai are good but here it is seen that non-availability of internet is frustrating. It establishes that customer has very little tolerance for any break in internet banking.

7.2.21 I am always under fear of stealing of my password. (Q21)

19.47% respondents strongly agreed that they are always under fear of safety of their password. 34.07% respondents also agreed with this view. 26.11% respondents were neutral whereas 20.35% respondents either disagreed or strongly disagreed with it. Survey shows that more than half of the respondents are always under fear of theft of their password. Banks have to develop measures to protect customers from theft of password.

7.2.22 Any spelling mistake in making transactions online can be very time consuming and unproductive. (Q22)

17.70% respondents strongly agreed that any spelling mistake in making transactions online can be very time consuming and unproductive. 46.02% respondents also agreed with this view. 27.43% respondents were neutral whereas 8.85% respondents either disagreed or strongly disagreed with it. Survey shows that majority of the respondents are apprehensive of spelling mistakes and their resultant after-effects. System should be made such that minimum writing and simple words are needed to do transactions.

7.2.23 I have faced problems in transfer of money to other accounts. (Q23)

5.75% respondents strongly agreed that they faced problems in transfer of money to other accounts. 22.12% respondents also agreed with this view. 37.173% respondents were neutral whereas 34.96% respondents either disagreed or strongly disagreed with it. Survey shows respondents are divided in three categories almost equally who have faced problems in transfer of money to other accounts. The system needs improvement to remove this problem.

7.2.24 I was unable to make online transactions in other countries while on visit due to non-receipt One Time Password (OTP) on my mobile. (Q24)

9.73% respondents strongly agreed that they were not able to do transactions in other countries as one time password could not be received on their mobile. 26.11% respondents also agreed with this view. 42.04% respondents were neutral whereas 22.13% respondents either disagreed or strongly disagreed with it. Survey shows that one of the problems in the transactions on internet banking is non receipt of OTP in other countries. Survey shows that a large proportion of the respondents were neutral, may be they have not got the opportunity to do transactions in other countries.

7.2.25 Blocking of password by bank in case of repeat mistake in entry of wrong password creates lots of inconvenience to users. (Q25)

13.27% respondents strongly agreed that lots of difficulties are created in case of blocking the passwords by the banks for security reasons in case the customer has made repeat mistakes in entering the correct password. 39.38% respondents also agreed with this view. 30.09% respondents were neutral whereas 17.25% respondents either disagreed or strongly disagreed with it. Survey shows that the system of receiving OTP for internet banking has problems and needs to be addressed.

7.2.26 Issue of new password by the bank is very time consuming due to long waiting time. (Q26)

14.60% respondents strongly agreed that banks take long time in providing new password. Customers find it very time consuming. 36.28% respondents also agreed with this view. 30.97% respondents were neutral whereas 18.14% respondents either disagreed or strongly disagreed with it. Survey shows that providing new password by the banks is a long waiting process and should be simplified.

7.2.27 Computer systems are very slow due to old systems making online banking difficult. (Q27)

7.96% respondents strongly agreed that online banking is difficult due to slow computer systems. 26.55% respondents also agreed with this view. 37.81% respondents were neutral whereas 27.87% respondents either disagreed or strongly disagreed with it. Survey shows that computer systems are not fast in all the places. Latest and fast computer systems will popularize the internet banking.

7.2.28 Extensive training of computers and internet operations in schools will greatly help online banking. (Q28)

19.56% respondents strongly agreed that extensive training of computers and internet will help online banking. 46.22% respondents also agreed with this view. 22.67% respondents were neutral whereas 11.56%

respondents either disagreed or strongly disagreed with it. Survey shows that majority of the respondents are favoring extensive training of computer systems and internet so that internet banking becomes friendly.

7.2.29 Government should take initiative to provide computers free or at concessional rates to all students in the schools. (Q29)

24.34% respondents strongly agreed that Government should take initiative to provide computers free or at concessional rates to all students in the schools. 42.04% respondents also agreed with this view. 24.78% respondents were neutral whereas 8.85% respondents either disagreed or strongly disagreed with it. Survey shows that majority of the respondents favor supply of computers free or at concessional rates to all the students in the schools.

7.2.30 More private coaching classes at reasonable rates will help public to become computer friendly. (Q30)

23.45% respondents strongly agreed that there is a need for more private coaching classes, which would help public to become computer friendly. 48.23% respondents also agreed with this view. 24.34% respondents were neutral whereas 3.98% respondents either disagreed or strongly disagreed with it. Survey shows that majority of the respondents favor introduction of more private coaching classes at reasonable rates.

7.2.2 Analysis for factor's ranking

Customer's acceptance to internet banking has four important areas presented in Table 2. Each area is related to the number of sub-factors as covered in the questions of the survey, details are presented in Table 2. Relative importance of the factors can be decided by determining the rank of these factors within each area. Weighted average method is used for determining the ranks. The qualitative assessment given by the respondents are converted into numeric values by using Likert's Scale from 5 to 1 for highest assessment to the lowest assessment. Based on the conversion of qualitative data into quantitative data and determining the weighted average, the hierarchy is developed by ranking the weighted average from highest to lowest. The factors represented by the questions in the survey questionnaire are arranged in the hierarchy from 1 to nth question in the area. The four areas as discussed in Table 2 are:

- i. Demographic factors
- ii. Factors acting as effective tools to improve customer's acceptance to internet banking.
- iii. Factors acting as barriers to the use of internet banking.
- iv. Factors relating to policy matters to enhance use of internet banking.

Analysis of demographic factors have already been tackled in Chapters 7.2.1.1 to 7.2.1.8 above. The rank analysis of factors in areas ii, iii and iv is shown in Table 3, Table 4 and Table 5 respectively.

Table 3: Rank analysis of factors acting as effective tools to enhance customer acceptance

Survey Question Reference	Survey questions arranged according to rank from highest to lowest	Number of respondents assigning weight on a Likert scale 5 to 1.					Total # of responses	Weighted Average	Rank
		Likert Scale 5 to 1							
		5	4	3	2	1			
8	The internet services are efficient and reliable	80	108	34	5	0	227	4.16	1
12	I can do online banking from any place and any time convenient to me.	72	109	31	12	2	226	4.04	2
16	Online banking saves time and costs both.	71	103	41	8	2	225	4.04	3
14	I am not exposed to heat, cold, rain and dusty environment.	62	77	44	34	10	227	3.96	4

11	Completion of banking transaction is instantly known.	61	100	52	8	3	224	3.93	5
9	Online banking enables you to operate in privacy.	61	97	58	8	2	226	3.91	6
13	I need not to go to bank and stand in long queues for hours.	77	74	46	25	5	227	3.85	7
15	Online banking provides me the comfort of working peacefully without external fear.	47	95	65	17	1	225	3.76	8
10	I feel great security in online banking as my personal data is not shared by anyone.	48	86	67	20	5	226	3.67	9
18	There is absolute accuracy in online banking.	36	92	78	16	3	225	3.64	10
17	I have no fear of personal safety and physical harm in online banking.	46	68	71	35	6	226	3.5	11

Table 4: Rank analysis of factors acting as barriers to the use of internet banking

Survey Question Reference	Survey questions weighted average and ranking arranged from highest to lowest	Number of respondents assigning weight on a Likert scale 5 to 1.					Total # of responses	Weighted Average	Rank
		Likert Scale 5 to 1							
		5	4	3	2	1			
20	Non-availability or failure of internet is frustrating experience in doing shopping.	53	96	59	15	4	227	3.79	1
22	Any spelling mistake in making transactions online can be very time consuming and unproductive.	40	104	62	17	3	226	3.71	2
19	Correction of mistakes once made in online banking is very difficult to resolve.	37	82	79	24	2	224	3.58	3

25	Blocking of password by bank in case of repeat mistake in entry of wrong password creates lots of inconvenience to users.	30	89	68	30	9	226	3.45	4
26	Issue of new password by the bank is very time consuming due to long waiting time.	33	82	70	35	6	226	3.45	5
21	I am always under fear of stealing of my password.	44	71	59	37	9	226	3.38	6
24	I was unable to make online transactions in other countries while on visit due to non-receipt One Time Password (OTP) on my mobile.	22	59	95	36	15	226	3.18	7
27	Computer systems are very slow due to old systems making online banking difficult.	18	60	85	57	6	226	3.12	8
23	I have faced problems in transfer of money to other accounts.	13	50	84	64	15	226	2.92	9

Table 5: Rank analysis of factor related to policy matters

Survey Question Reference	Survey questions weighted average and ranking	Number of respondents assigning weight on a Likert scale 5 to 1.					Total # of responses	Weighted Average	Rank
		Likert Scale 5 to 1							
		5	4	3	2	1			
30	More private coaching classes at reasonable rates will help public to become computer friendly.	53	109	55	7	2	226	3.9	1
29	Government should take initiative to provide computers free or at concessional rates to all students in the schools.	55	96	56	19	1	226	3.83	2
28	Extensive training of computers and internet operations in schools will	44	104	51	18	8	225	3.7	3

greatly help online banking.									
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The questions of the survey questionnaire are arranged according to rank as worked out.

7.3 Findings

The research findings are focused on the status of internet banking in Dubai, demographic analysis, factors acting as effective tools to improve customer's acceptance to internet banking, barriers to internet banking and policy matters to enhance the use of internet banking. These are discussed here under.

7.3.1 Internet banking in Dubai

There is a concentration of electronic banks in Dubai as compared to other places in UAE, which have seven Emeritus including Dubai. The percentage of electronic banks in Dubai is only 9.41% of all the banking services in Dubai. This shows that there is lot of scope of enlarging the internet banking in Dubai. Majority of the users of the internet banking in Dubai found the internet banking as efficient and reliable. Any interruption of internet availability is frustrating to the customers.

7.3.2 Demographic scenario of internet users in Dubai

About 94% of the internet banking users are in the age group of 18-36 years. Male and females are equally active in using internet banking in Dubai. About 38 different nationality responded to the survey showing that they use internet banking facilities in Dubai. Internet users in Dubai have high school or undergraduate qualifications. More than half of the internet banking users are holding managerial positions. This is followed by the persons holding position of officers. People at clerical level and home makers are relatively in small percentage of internet banking users. Most of the internet banking users are familiar with the use of computers and internet.

7.3.3 Factors acting as effective tools to improve customer's acceptance to internet banking

Eleven factors have been identified which act as effective tools to enhance customer's acceptance to internet banking (Table 3). The most important one is efficient and reliable internet services followed by convenience, safety and security. Various sub-factors under each main factor are shown in Fig. 5.

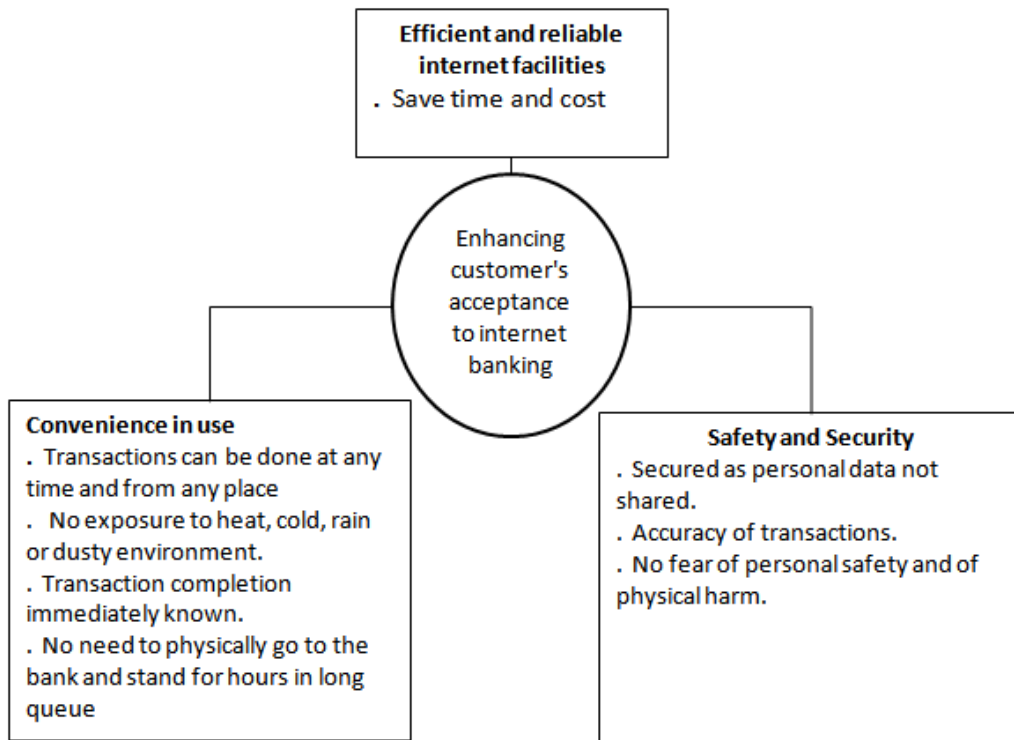


Fig.5: Factors acting as effective tools to enhance customer acceptance to internet banking

The study established that internet banking can be done from any place and at any time convenient to the customer. The other advantages of the internet banking are safety and security, accuracy in transactions, saving of time and cost.

7.3.4 Factors acting as barriers to the use of internet banking

The study has found 9 barriers in acceptance of internet banking (Table 4). The most important is the non-availability or failure of internet during banking transactions. The customers are reluctant to use internet banking for the fear of wrong spellings or making some mistakes which are not easy to correct. The theft of password or other personal information also goes against the use of internet banking. The banks take long time in providing new password and blocks the transactions for certain time in case more number of unsuccessful transactions are carried out. Another barrier noted in the use of internet banking is non receipt of OTP on mobile phones especially while on visit to other countries. In many of the cases, computer systems of the bank are very slow making internet banking difficult.

7.3.5 Factors relating to policy matters

The most important factor to increase the use of internet banking is to make available more private coaching classes at reasonable rates so that public may become computer friendly and adapt to internet banking (Table 5). The second important policy matter is the initiative to be taken by the government in providing computers to the students in the schools free of cost or at concessional rates. The third factors suggests extensive training of computers and internet operations in schools.

VIII. Recommendations

Based on the findings of the research study, following recommendations are made to make internet banking in Dubai more acceptable to the users and to improve the performance of the banks:

- i. Make internet facilities more efficient, fast and reliable without any interruption. Standby internet facilities should be arranged to make the system robust and efficient.
- ii. Use latest and fast computer systems to take minimum time in transactions. Hard wares, soft wares and men wares must be regularly updated with the latest technology.
- iii. Increase the number of electronic banks to provide internet banking facilities to larger population.
- iv. Improve awareness programs to encourage more customers to adopt internet banking.
- v. Introduce new schemes with attractive incentives to entice customers to internet banking.
- vi. Banks must continuously work for improvements in safety and security of money and personal data of customers by stringent measures and yet keep the system customer friendly.
- vii. Helpline must be prompt, adequate and user friendly to overcome any problem relating to user ID, password, One-Time-Password (OTP) or any other issue about the transactions. Development of videos to educate the users will go a long way.
- viii. Increase the number of private coaching centers to enable customers to learn use of computers and internet at reasonable rates.
- ix. Government should support computerization in the country by providing computers to the students in the schools, free of cost or on subsidized rates.
- x. Extensive training should be given to the students in the schools to create computer and internet literate young persons.

IX. Conclusions

The study on internet banking in Dubai has brought out convenience, safety and security as the main motivators for acceptance of internet banking by the consumers. Poor quality of internet services, slow computers, absence of direct contact with the bank officials, lack of familiarity with computers and internet among the users are the main barriers in promoting the internet banking. Users still have concern about safety and security of their money and personal data. Banks in Dubai can improve the acceptance of internet banking by customers further by focusing on convenience, safety and security and removing the barriers noted. The study has brought out that government's initiative and support in familiarization of computers and the use of internet will go a long way in increasing the internet banking.

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Appendix 1

Questionnaire

Customer Acceptance of Internet Banking in Dubai

Purpose of the study

The purpose of this study is to assess the present status of the internet banking and to find out the factors that help in increasing the acceptance of internet banking in Dubai. Study also aims to identify the barriers in acceptance of the internet banking in Dubai. The ultimate objective of the study is to increase the customer satisfaction in banking services. The study will suggest the banks in Dubai to make appropriate structural changes in the systems and processes to improve customer satisfaction and also to improve their own performance and competitiveness. Please take out some time to give your response and make the study a success. You are requested to provide the required information by tick marking the most appropriate option(s).

S. No.	Statement	Response
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Customer's Acceptance of Internet Banking in Dubai

1	Age range (years)	18-25	26-35	36-45	46-55	More than 55
2	Gender	Male	Female	Neutral	-	-
3	Nationality					
4	Qualification	High school or equivalent	Undergraduate	Post-graduate	Professional courses	Ph.D.
5	Which describe you the best as customer?	Clerk	Officer	Manager	Retired persons	Home maker
6	Income range per month					
7	Are you familiar with the use of computers and internet?	Fully familiar	Highly familiar	Familiar	Familiar to some extent	Not familiar
8	The internet services are efficient and reliable	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
9	Online banking enables you to operate in privacy.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
10	I feel great security in online banking as my personal data is not shared by anyone.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
11	Completion of banking transaction is instantly known.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
12	I can do online banking from any place and any time convenient to me.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
13	I need not to go to bank and stand in long queues for hours.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
14	I am not exposed to heat, cold, rain and dusty environment.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
15	Online banking provides me the comfort of working peacefully without external fear.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
16	Online banking saves time and costs both	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
17	I have no fear of personal safety and physical harm in online banking.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
18	There is absolute accuracy in online banking.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
19	Correction of mistakes once made in online banking is very difficult to resolve.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
20	Non-availability or failure of internet is frustrating experience in doing shopping.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
21	I am always under fear of stealing of my password.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
22	Any spelling mistake in making transactions online can be very time consuming and unproductive.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
23	I have faced problems in transfer of money to other accounts.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
24	I was unable to make online transactions in other countries while on visit due to non-receipt One Time Password (OTP) on my mobile.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
25	Blocking of password by bank in case of repeat mistake in entry of wrong password creates lots of inconvenience to users.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
26	Issue of new password by the bank is very time consuming due to long waiting time.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
27	Computer systems are very slow due to old systems making online banking difficult.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
28	Extensive training of computers and internet operations in schools will greatly help online banking.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
29	Government should take initiative to provide computers free or at concessional rates to all students in the schools.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree

Customer's Acceptance of Internet Banking in Dubai

30	More private coaching classes at reasonable rates will help public to become computer friendly.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
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