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The Impact of e-Banking on Service Quality in the Egyptian Banking Sector

Abstract:

Purpose

This study aims to examine the various Egyptian customers' usage patterns of banking services in an attempt to provide a better understanding of factors affecting customer's decision of using the electronic banking services.

Design/methodology/approach

A total of 400 questionnaires were distributed to a convenience sample of customers. No category was used in the sample selection in order to avoid bias; the only condition was that respondents should have bank's account.

Findings

Findings revealed that about 88.85% of sample was users of automated teller machine, internet banking, and mobile banking. However, still a considerable number of them prefer to visit the branch at least once monthly.

Research limitations/implications

The study was confined to banks in Alexandria, which may not represent the entire Egyptian population. The study also focused on banks' customers and it didn't take into consideration the opinion of banks' managers and employees.

Originality/value

This paper introduces theoretical and practical understanding of the impact of e-banking on service quality in the Egyptian banking sector.

Keywords: customer satisfaction, electronic banking services, service quality

Article Classification: Research paper

1. Introduction

Electronic banking (E-banking) services provide banks with an opportunity to gain competitive advantage through improving their services quality and in return achieving customer satisfaction. E-banking is the process by which a customer may perform banking transactions electronically without visiting the bank branches (Karjaluoto *et al.*, 2002). It offers advantages and disadvantages to both providers and consumers. For banks, the use of online services enables significant cost reduction while enhancing service efficiency and effectiveness (Chen, 2013). In addition, online services increase market penetration and customer retention (Chong *et al.*, 2010). Moreover, it decreases the incidence of heterogeneity in the service (Zeithaml and Bitner, 2000). The main advantage for customers, is access to service when and where the customer requires it (Bitner *et al.*, 2000), as well as ease of use, convenience, time savings, cost savings, and control over service provision (Curran and Meuter, 2005; Ho and Ko, 2008).

Banks start to use information technology to improve the quality of their services, increase efficiency and customer satisfaction (Pyun *et al.*, 2002). However, implementing and evaluating service quality in e-service in particular is a very complex process. Financial services have a number of unique characteristics that distinguish them such as intangibility, heterogeneity, inseparability and perishability (Zeithaml and Bitner, 2000).

Nevertheless, most of banking customers differ in their usage behaviour of multiple banking channels in complementary manner whether by visiting the bank branch or online through various electronic means. Therefore, this research aims to examine the various Egyptian customers' usage patterns of banking services in an attempt to provide a better understanding of factors affecting the use of the electronic banking services as a mean of sourcing their banking services. Moreover, it provides reasons that others still prefer to visit the bank branches. This will help banks to encourage their existing electronic banking users as well as finding factors that prohibits non-users from attempting to use such services, and finally the remedial solutions suggested enhancing usage and achieving customers' satisfaction.

2. Measuring the Service Quality

The characteristics of service can be described as follows intangibility (Hoffman and Bateson, 2002), inseparability (Baron and Harris, 2003), heterogeneity (Kotler *et al.*, 2001), and perishability (Hoffman and Bateson, 2002). However, the highly growth of technology, and the increase use of internet has a

great impact on these characteristics (Hoffman and Bateson, 2002). Concerning *intangibility*, the internet make it possible for service provider to show more additional evidence of services like frequently updated information, well designed web page, accurate information provided, highly speed response, ease of navigation, and free sample of services. Concerning *inseparability*, internet makes service more easily customized. As regards of *heterogeneity*, there will be less variation provided in service provided from one customer to another. Regarding *perishability*, it provides customer more freedom for purchase and much greater ease for service marketers to handle supply and demand.

Ojo (2010) argues that the definitions of service quality typically involve determining whether perceived service delivery meets, exceeds or fails to meet customer expectations. From literature, one of the famous tools to assess service quality is SERVQUAL model presented by Zeithaml *et al.* (2000). However, e-service differs in its nature from traditional service. Therefore, Zeithaml *et al.* (2000) developed E-SERVQUAL model to cover all customers' communication on websites. Santos (2003) defined e-service quality as "*overall customer assessment and judgment of e-service delivery on the virtual marketplace*". Thus customers of online services expect equal or higher service quality than the customers of the traditional services. The E-SERVQUAL knowing also as "E-SQ" model has been developed specially for measuring online services (e-services) quality. Parasuraman *et al.* (2005) developed a separate e-service recovery scale (E-S-QUAL) which consists of 4 di-

mensions with 22 attributes and the E-RecS-QUAL consists of 3 dimensions with 11 attributes. The modified E-S-QUAL and E-RecS-QUAL scales are not completely covering all the issues for measuring quality of online banking services (Kenova and Jonasson, 2006).

3. Service Quality and Customer Satisfaction

Customer satisfaction / dissatisfaction has been described as a person's feeling of pleasure/disappointment as a result of comparing a product's perceived performance with his or her prior expectations of its performance (Johnston and Kong, 2011; Ku *et al.*, 2013). Online customers are expensive to attract and difficult to retain because it is relatively easy for customers to switch their online providers (Reichheld and Schefer, 2000). In order to satisfy customers' needs, companies need to setup their websites to provide quality information and better services. Many studies have shown that service quality is a strong predictor of customer satisfaction and loyalty (Zeithaml *et al.*, 1996).

With the emergence of technology in banking sectors, studies have examined the service quality related to the specific technologies like internet banking, ATM banking, and phone banking (Parasuraman *et al.*, 2005; Santos, 2003). So the need is to identify the service quality dimensions as technology being used in banking industry as perceived by customers in generic terms and how these dimensions affect customer satisfaction and loyalty. Consumer perceptions of service quality vary depending on the specific type of e-banking services used (Curran and Meuter, 2005). For online banking Yang *et al.* (2004) found out the following dimensions of service quality:

reliability, responsiveness, competence, ease of use, security and product portfolio in addition to accuracy, feedback/ complaint management, queue management, accessibility, personalization /customization and customer service (Joseph and Stone, 2003). Ganguli and Roy (2011) identified 4 generic service quality dimensions of technology in banking sector and examined the effect of these dimensions on customer satisfaction and loyalty. These dimensions are customer service, technology security and information quality, technology convenience, and technology usage easiness and reliability. Accordingly, it becomes necessary to achieve customer satisfaction in adopting these new channels of service delivery.

The next section will define the e-banking services as a type of e-services provided by banks focusing on three types of e-banking services "ATMs, internet banking, and mobile banking" beside comparing customers' usage patterns of these three types.

4. Technology and E-Service Quality

The developments of technology have removed repetitive, time consuming tasks, reduced human error and extended access to banking related facilities. Technology also provides banks with customer information. Besides, other competitive advantages like entry barriers creation, productivity enhancement and revenue increase which are associated with technology adoption by service companies (Fitzsimmons and Fitzsimmons, 1997).

Banks have adopted e-banking services in various forms like Automated Teller Machines (ATMs), Telephone Banking (TB), Internet Banking (IB),

PC banking Electronic Funds Transfer (EFT) and Mobile Banking (MB). This study will focus on examining and comparing between the usage of only three forms of e-banking services (ATMs, Internet banking, and Mobile banking). *Automated Teller Machine (ATM)* is used to increase the effectiveness of customer service provision and reduce the workload of bank tellers. With the appearance of ATMs, some limitation of time and geographic location has been resolved (Balachandher *et al.*, 2000). Many studies showed that banks in developing economies are not benefiting from ATMs to its full potential as a customer service delivery tool, and as a strategic workload reliever for tellers who service customers inside the banking halls (Narteh, 2013). *Internet Banking* is an alternative to classical banking that enables customers to perform financial activities in virtual space (Suh, 2002). Banks can also deliver their latest products and services over the internet. From customer perspective, online services offer a lot of benefits such as enhanced control, ease of use, and reduced transaction charges (Scullion and Nicholas, 2001). Internet Banking makes operating a bank account simple and convenient (Jenkins, 2007). Problems with technical, legal security and privacy seem to be the most important things that may affect usage of Internet Banking (Pikkarainen *et al.*, 2004). *Mobile Banking* reduces the customer requirements to just a mobile phone. In spite of the advantages the use of the mobile phone in banking actions has remained small due to the lack of awareness (Laforet and Li, 2005), as well as the overall consumer perception that the use of this service is expensive, risky and relatively complex to use (Laukkanen,

2007). Moreover, the late introduction and limited number of banks offering this service currently may be also a reason behind the low usage rate of this service (Proença and Rodrigues, 2011).

ATMs are the most commonly service delivery channel in banks in developing countries, followed by the Internet banking then the Mobile banking. It is used mainly in cash withdrawal transactions more than in cash deposition as shown in many previous studies (Joshua and Koshy, 2011). Concerning internet banking, the most important elements have been found to be Low fees, time savings and freedom from time and place (Karjaluo *et al.*, 2002). Other factors contributing to its use include easiness-to-use, speed of service delivery (Karjaluo *et al.*, 2002), convenience and compatibility with lifestyle (Black *et al.*, 2002), while factors like complexity of the service, perceived financial cost of it (Black *et al.*, 2002), ignorance of electronic services and security risk (Black *et al.*, 2002) are found to inhibit the use of the service. On the other hand, mobile banking has a great contribution in online banking revolution. However, the use of mobile banking is still in its initial stage. Yet, its disadvantages such as the small screen with small amount of information make the device very difficult to use in fund transfer. Also smaller buttons without real keyboard make the mobile phones' technical features slower in entering information (Laukkanen, 2007). However, concerning security issues, it is not perceived a major obstacle in mobile banking (Laukkanen, 2007). Therefore, compared with the internet site, mobile sites have some limitations that inhibit its utilization such as the smaller interface, lower resolution, and slower re-

sponse because of the constraints of mobile terminals. The most important contributor to mobile banking seems to be the ability use the service wherever wanted (Laukkanen, 2007).

5. Research Design and Methods

The research purpose of this research indicates that this study is initially descriptive when aiming to find out and describe the percentage of usage of different services provided by banks in Egypt. Then the study becomes somewhat explanatory when it aims to go insight into existing theories within the subject to find out factors that inhibit users from using certain type of services or factors that dissatisfy them in using each type of these services. Moreover, how to enhance the usage in order to let both banks and customers benefit from e-banking services. Also, the research questions are mainly based on "How many" and "What" type and that the objective of the research was to collect quantifiable data that later analyzed to answer those questions (Collis and Hussey, 2003; Saunders *et al.*, 2007). Accordingly, data collection and analysis was in numerical format, therefore the quantitative approach has been used.

Self-completion questionnaire were distributed to a sample of bank's customers either by hand or by mail to a convenient sampling of customer in different banks (whether public or non-public Egyptian banks) and in order to avoid bias there are no categories or strata for selection but the only condition is that respondents must have bank's account to be familiar in dealing with banking transactions whether offline or online, excluding bank employees and bank managers. The question-

naire was split into Four sections as follow: Section One captures demographic variables of respondents; section Two examines the present usage scenario of e-banking services concerning ATMs, internet banking, and mobile banking. Section Three determines main factors that prohibit the usage of ATMs, Internet banking, and Mobile banking, and examine the impact of e-banking services on customer satisfaction, as well as identify factors that affect the lesser usage of these services. Section Four suggests some remedial solution to enhance usage and achieve customers' satisfaction. Four Hundred questionnaires were distributed, of the 275 returned questionnaires; 15 had to be eliminated because they were incomplete. Therefore, the acceptable and usable questionnaires were 260 with 65% response rate which was considered satisfactory for subsequent analysis.

This next section will present and analyze secondary data collected from the questionnaires directed to bank's customers whether users or non-users of the three types of e-banking services, namely the ATMs, Internet banking, and Mobile banking upon which the study focus. The four sections of the questionnaire capture demographic variables of respondents which provide a brief description of respondents' characteristics such as gender, age, marital status, education level, and monthly income...etc. as well as their accessibility to computers and internet and hours spent in browsing the internet daily. The questionnaire also measure the awareness through measuring the frequency and preference of usage of various mode of banking services such branch banking, ATMs, Internet banking, and Mo-

bile banking. Then, it analyzes problems faced by bank’s customers and dis-satisfies them in using various banking services, and finally the questionnaire provides suggestions to enhance future usage.

6. Findings

The questionnaires were distributed to a convenience sample who must have accounts in different banks to be familiar with various banking transactions whether offline through the branch or online through one or all of the three types of e-banking services mentioned in the study. To avoid bias no category or strata was used in the selection of the sample. 400 questionnaires were distributed, of the 275 returned questionnaires, 15 had to be eliminated because they were incomplete. Therefore, the acceptable and usable questionnaires were 260 which represent 65% response rate which was considered satisfactory for subsequent analysis. Analysis and testing of the relationships between various variables collected from the questionnaire has been done with the help of

Microsoft Excel and the Statistical Package for Social Sciences (SPSS 17.0) to obtain the mean, the standard deviation, the standard error of each mean and for making comparison between different groups involved in the study. The data collected was analyzed using frequency, percentage, means and correlation analysis. One Way test “Analysis of Variance” (ANOVA) was used in the comparison between independent samples.

6.1 Part one (a): Usage patterns among respondents’ demographic profile

The first part of the questionnaire was designed to seek information about the respondents’ characteristics (age, gender, marital status, education level, and monthly income level). Results show that the 88.85% of banks’ customers are aware of e-banking services while only 11.15% were non-users of e-banking services. However, customers’ usage of various banking services varies due to some other reasons such age, gender...etc., as shown in Table (1).

Table (1): Sample Demographic Characteristics

	231		29		260	
	#Users	%	#Non-Users	%	Total	%
Gender						
Male	125	54.1%	23	79.3%	148	56.9%
Female	106	45.9%	6	20.7%	112	43.1%
Age						
below-25	28	12.1%	9	31.0%	37	14.2%
From 25 to 34	60	26.0%	1	3.4%	61	23.5%
From 34 to 45	92	39.8%	5	17.2%	97	37.3%
Above 45	51	22.1%	14	48.3%	65	25.0%
Marital status						
Single	57	24.7%	10	34.5%	67	25.8%
Married	142	61.5%	15	51.7%	157	60.4%
Other	32	13.9%	4	13.8%	36	13.8%
Education level						
Hi-School	19	8.2%	7	24.1%	26	10%
Diploma	1	4%	4	13.8%	5	1.9%
University	131	56.7%	18	62.1%	149	57.3%
Post-graduate	80	34.6%	0	0%	80	30.8%
Monthly Income						
Below-1000	24	10.4%	10	34.5%	34	13.1%
From 1000 to 3000	76	32.9%	5	17.2%	81	31.2%
From 3000 to 7000	85	36.8%	9	31.0%	94	36.2%
Above-7000	46	19.9%	5	17.2%	51	19.6%

These results discussed above are consistent with results of previous studies done in many other countries. The majorities of users are well educated, young to middle age; with high income and that male tend to adopt e-banking services more than female (Joshua and Koshy, 2011). It also shows that education level of e-banking services users are significantly more than non-users of the services at more than 99% confidence level as the p-value is 0.0001% and

the same p-value was reached in the age analysis indicating that age has a significant effect on adopting e-banking services. Also, users with high monthly income level are significantly more than users with low monthly income level at more than 99% confidence level where p-value was 0.011% which indicate that income level has a significant effect on adopting e-banking services. Figure (1) shows a comparison between users and non-users using demographic variables.

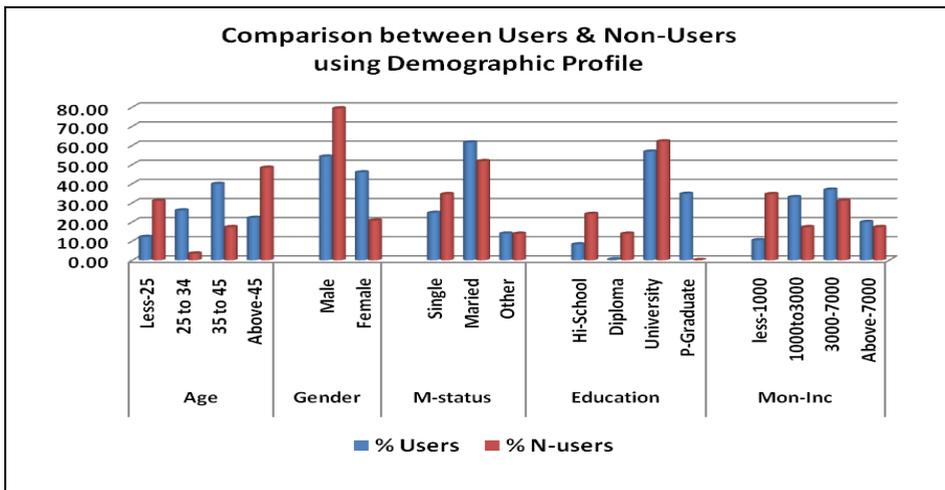


Figure (1): Comparing users and non-users using demographic variables

6.2 Part one (b): Usage of e-banking services among public and non-public banks

In this part of the questionnaire, a comparison was made between users

and non-users of e-banking services regarding the main bank type within which they hold their main accounts as shown in Table (2).

Table (2): Usage of e-banking services among public and non-public banks

Main bank Type	231		29		260	
	# Users	%	# Non-Users	%	Total	%
Public bank	101	43.70%	22	75.90%	123	47.30%
Non-public banks	130	56.30%	7	24.10%	137	52.70%

Results show that the majority of e-banking users 56.30% were dealing and holding their main accounts in non-public bank (whether non-public Egyptian banks or non-public foreign banks), while the majority of non-users 75.90% were those who are dealing and holding their main accounts in public banks. Therefore, as discussed above, users dealing with non-public banks are significantly more than users dealing with public banks and vice versa at more than 99% confidence level as the p-value is 0.001% (less than 0.01%). The main reason behind these results could be because non-public banks have all the infrastructure facilities required in pro-

viding e-banking services while public banks have lack in establishing e-banking services facilities due to its bureaucratic procedures in decision making and lack of fund allocation through the budget to incorporate more and more information technology (IT) in their operations. Therefore, non-public banks tend to be more efficient, productive, transparent, and user-friendly with IT incorporations which facilitate rapid expansion of adoption and usage of e-banking services.

Figure (2) shows a comparison between users and non-users among public and non-public (private) banks.

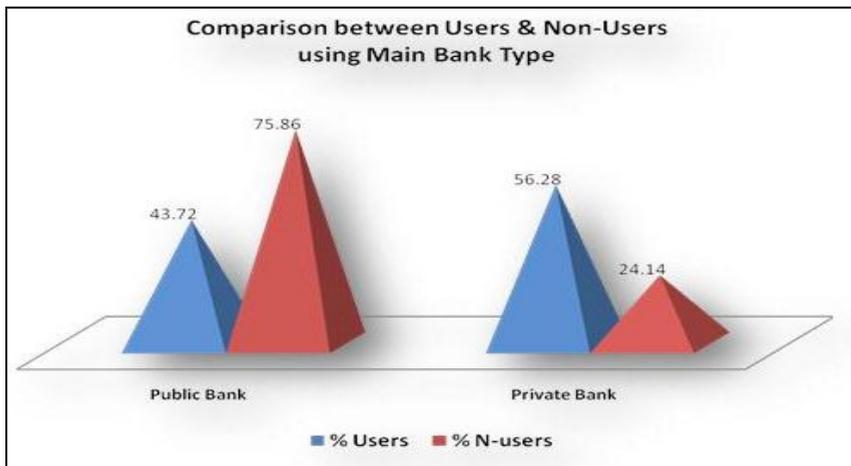


Figure (2): Comparing users and non-users among public and non-public banks

6.3 Part one (c): Having computer and internet facilities and hours of browsing the internet daily

The questionnaire also compares users and non-users of e-banking services

regarding owning computers and internet facilities as well as the frequency of internet browsing per hours daily as shown in Table (3).

Table (3): Comparison between users and non- users regarding having computer and internet facilities and hours of browsing the internet daily

	231		29		260	
	# Users	%	# Non-Users	%	Total	%
Own computer						
Have computer	208	90.0%	20	69.0%	228	87.70%
Don't have computer	23	10.0%	9	31.0%	32	12.30%
Internet Facilities						
Have internet	200	86.6%	21	72.4%	221	85.0%
Don't have internet	31	13.4%	8	27.6%	39	15.0%
Hours of internet browsing daily						
Less-30 m	20	8.7%	20	69.0%	40	15.40%
From 30 m to 60 m	33	14.3%	4	13.8%	37	14.20%
From 60 m to 120 m	52	22.5%	5	17.2%	57	21.90%
Above-120 m	125	54.1%	0	0%	125	48.10%

Results in Table (3) show that the majority of users about 90.00% own computers and 86.60% have internet facilities i.e. that the majority of users are those who are more experienced with computers and more familiar in browsing the internet regularly than non-users since the majority of users 76.60% are those who browse the internet from one hour to more than two hours daily. Also, users and non-users of e-banking services are compared taken for measurement the extent of internet usage such hours of internet browsing per day. Results show that the frequency of internet browsing is significantly high among users of e-banking services at more than 99% confidence level since the p-value

is 0.001% (less than 0.01%) as compared to non-users. 54.10% of users are browsing the internet daily for more than 2 hours followed by 36.80% representing users who are browsing the internet from half hour to two hours daily. However, 69.0% representing the majority of non-users are those who browse the internet for less than half hour daily. This revealed that those who tend to browse the internet more often and have greater familiarity with the internet are those who adopt e-banking services more than non-users. Therefore, users tend to be those who are more technology oriented as it can be assumed that they are more comfortable in dealing with technology products such as computers (as shown in Figure 3).

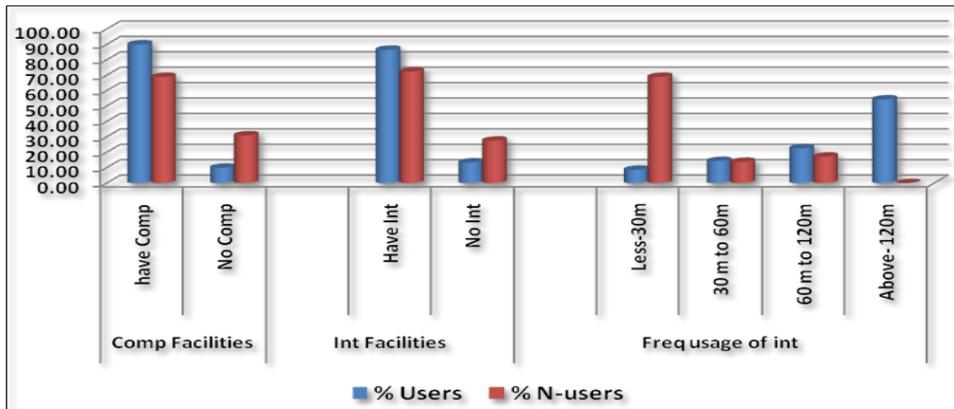


Figure (3): Comparing users and non-users using computers & Internet facility

6.4 Part Two (a): Usage frequency of e-banking services:

The study also compares between the usages of various banking services channels among users and non-users (as shown in Table 4).

Table (4): Comparison between users and non- users in using various banking delivery channels

	# Users	%	# Non-Users	%
Bank branch	154	59.23%	106	40.77%
ATM	231	88.85%	29	11.15%
Internet banking	134	51.54%	126	48.46%
Mobile banking	43	16.54%	217	83.46%
Total respondents	260			

Results in Table (4) show that the ATM services were the most frequently used. The ATM services have achieved the popularity and widespread adoption since 100% of e-banking services users i.e. all the 231 users are using the ATMs representing 88.85% of total

respondents followed by 51.54% are using the internet while only 16.54% are using the mobile in conducting their banking transactions. However, results also revealed that there are a considerable number of banks’ customers about 59.23% still prefer to visit the bank branch (as shown in Figure 4).

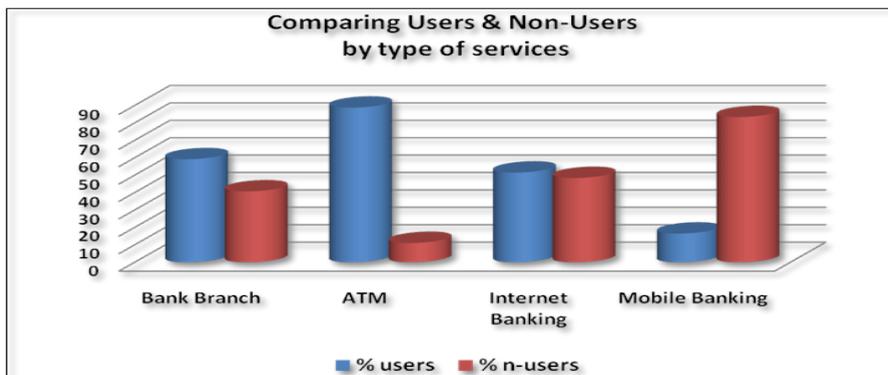


Figure (4): Comparing users and non-users by type of service used

Concerning the frequency of using the various banking services channels monthly by users, Table (5) show that the majority of the ATM users about 66.66% are using it from 1 to 8 times monthly. The key reason for its popularity and its widespread adoption level

could be because of the convenience it offers the widespread availability of ATMs location and the 24 x 7 transactions facilities it offers to its users (Joshua *et al.*, 2011).

Table (5): usage frequency of e-banking services by users

	Frequency usage / month				Total # of users
	1 time	1 to 3 times	3 to 8 times	Above 8 times	
Bank branch	109 (70.78%)	35 (22.72%)	5 (3.25%)	5 (3.25%)	154
ATM	44 (19.05%)	102 (44.15%)	52 (22.51%)	33 (14.29%)	231
Internet banking	45 (33.58%)	50 (37.31%)	14 (10.45%)	25 (18.66%)	134
Mobile banking	21 (48.84%)	11 (25.58%)	5 (11.63%)	6 (13.95%)	43

As shown in figure (5), the internet banking, as the second e-banking service provided by banks, is the next widely adopted services as about 58.01% of e-banking users are using it. The majority of its users 70.89% are using it at least once to three times monthly. Mobile banking was the latest introduction of e-banking services provided by banks till now and offered by only a limited number of banks and this was the main reason behind the low usage of this type of service, since only 18.61% of e-ba-

anking users are using it. The majority of its users are using it only once monthly.

However, the study also revealed, as shown in Table (5), that a considerable number of bank customers both users and non-users of e-banking services were still preferring to visit the bank branch where among the 66.67% of e-banking services users who still prefer to visit the bank branch, about 70.78% prefer to visit it at least once monthly.

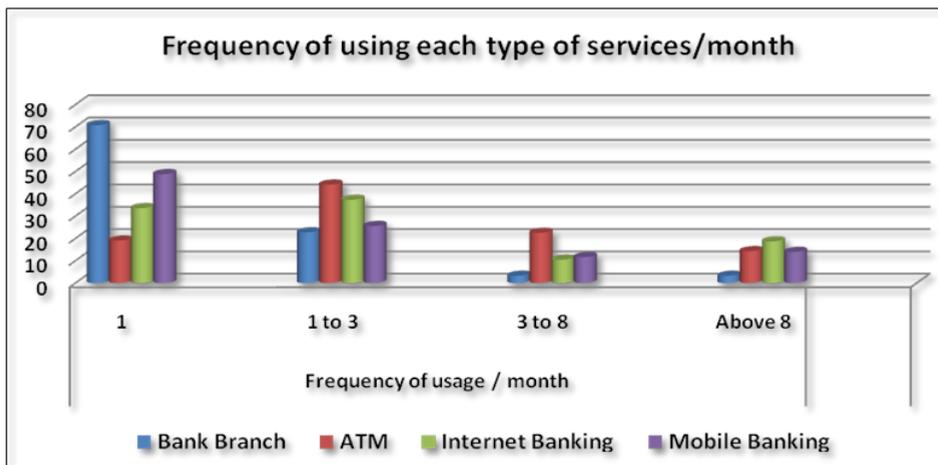


Figure (5): Frequency of using each type of service/ month

6.5 Part Two (b): Preference of using different banking services provided:

E-banking services users are asked about their preferences in using different

banking channels, namely the bank branch, the ATMs, the Internet banking, and the Mobile banking, in conducting various banking transactions (as shown in Table 6).

Table (6): comparing between various banking services in the preference of usage

	Total (231) users			
	Branch	ATMs	Internet Banking	Mobile Banking
- Paying bills	39.83%	36.36%	27.32%	0.84%
- Printing statement	19.91%	54.11%	47.19%	0.84%
- Opening account	83.55%	-	-	-
- Banking transfer	63.20%	11.69%	24.68%	0.43%
- Deposit money	53.68%	35.50%	-	-
- Withdraw money	7.36%	90.91%	-	2.59%
- Saving	82.25%	6.93%	9.96%	0.87%
- Getting loans	82.68%	3.90%	13.42%	-

Results presented in Table (6) revealed that even users of e-banking service in Egypt still prefer to visit the bank branch to conduct most of their banking transactions, followed by preferring the ATM machines mainly in withdrawing money and printing bank sta-

tements to check their accounts. The internet banking was preferred in printing bank statements more than the ATM and preferred to be used also in transferring funds among account and in paying bills. While the mobile banking remain in its infancy stage and the

less used among users in conducting their banking transaction and the reason for this less usage of mobile banking could be because it the latest introduced

service by a limited number of banks and need more advertising to encourage customers to know more about and use it (as shown in figure 6).

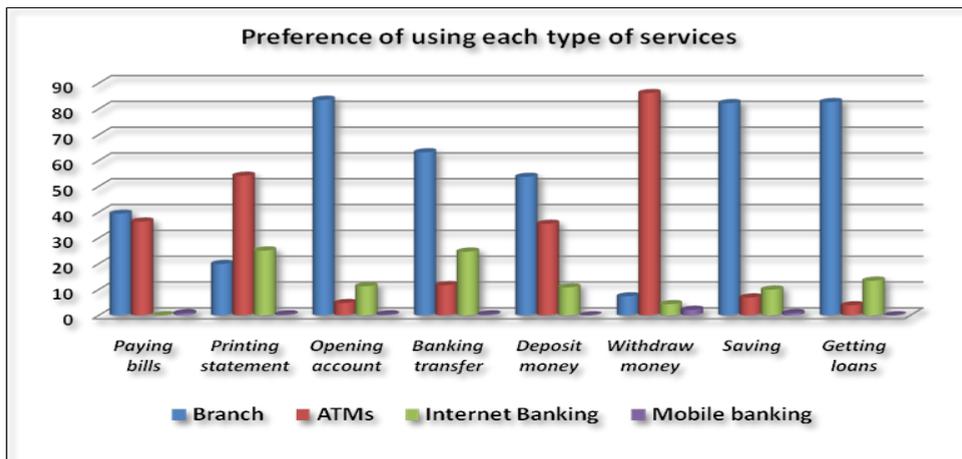


Figure (6): Preference of using each type of service

6.6 Part Three (a): Reasons for not using e-banking services

Although the study revealed that the majority of banks’ customers in Egypt, about 88.85% are users of e-banking se-

rvices, still there are 11.15% of them are not using the services. In an attempt to know reasons for not using the services, non-users are asked to mention reasons that prohibited them from using the services totally for each type independently as shown below in Table (7).

Table (7): Reasons prohibiting usage of services among non-users

Reasons for not using	% of non-users		
	ATM	Internet banking	Mobile banking
- Never heard about	-	2.38%	32.72%
- Lack of knowledge	17.24%	16.67%	12.44%
- Security	27.59%	44.44%	27.65%
- Don't have time	3.45%	12.70%	0.46%
- No real value	3.45%	3.97%	0.92%
- New service	48.28%	12.70%	13.36%
- Not available	-	0.79%	6.91%
- No perceived need	-	6.35%	5.53%
Total non-users	29 (100%)	126 (100%)	217 (100%)

Results in Table (7) that present reasons for not using each service independently as specified by banks' customers who are non-users of these services, results show that the majority of ATMs' non-users 48.28% are not using it because they see it as a new service, they don't know how to use it well and need to become more familiar with it, followed by 27.59% of non-users who don't use ATM because of security concerns and only 17.24% of them have no knowledge about its benefits and how to use it correctly. For the internet banking, 44.44% of its non-users, those who are representing the majority don't use it due to security concerns followed by 16.67% of them don't use it due to the lack of knowledge about how to use safely and get benefits of it. While, the most important reasons for not using the Mobile banking service as specified by mobile banking non-users was because they never heard about the existence of this type of service, as 32.72% of its non-users are not using it because they don't hear about the service, followed by 27.65% of mobile banking non-users who heard about the service but don't use it due to security concerns. And 25.80% of them don't use it

because they see the service as new, they don't have enough knowledge about how to use and get benefit of it.

Accordingly, security problems was the main reason prohibiting usage of e-banking services for the three types and its influence on usage increase in the case of using the internet followed by the mobile specially if the situation involves money transactions like in conducting banking transactions using these facilities, while ATM is considered to be the more safe for users and the less in its security problems than the other mentioned type. Therefore, banks need to incorporate security elements in the e-banking services provided and make customers aware of these elements in order to gain their trust. For mobile banking the main reason for not using it was because that the majority of its non-users were never heard about, and this could be because only limited numbers of banks are providing such services, therefore banks need to make their customer aware of every new service provided beside let them know more about how to use and get benefit of it without facing problems (as shown in Figure 7).

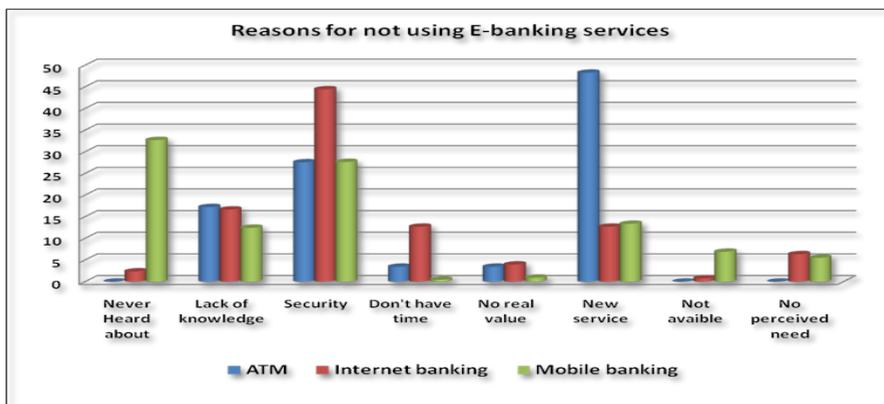


Figure (7): Preference of using each type of service

6.7 Part Three (B): Level of satisfaction

The study has also examined the level of satisfaction in using the three types of e-banking services, namely the ATM, the internet banking, and the mobile banking, among users in general as well as the level of satisfaction in using each type independently through measuring the degree of satisfaction, frequency of complaints against the bank regarding those services and the degree of

satisfaction concerning the complaints settlement system used by the bank to handle those complaints.

Data analysis in Table (8) measure customers' level of satisfaction in using the three types of e-banking services mentioned in the study for each service independently to have a clear picture regarding their status on the basis of five parameters which are strongly unsatisfied, unsatisfied, neutral, satisfied, and strongly satisfied.

Table (8): level of satisfaction in using the three types of e-banking services

Level of satisfaction	% of satisfaction among users		
	ATM	Internet banking	Mobile banking
Strongly unsatisfied	4.33%	1.73%	0.43%
Unsatisfied	10.39%	6.06%	1.30%
Neutral	22.08%	8.23%	3.03%
Satisfied	52.38%	33.33%	10.82%
Strongly satisfied	10.82%	8.66%	3.03%
Total # of users	231	134	43

In general, all e-banking users are satisfied in using the e-banking services since the majorities 63.20% of users are satisfied and strongly satisfied in using the services followed by 22.08% are neutral which suggest that even users who don't perceive the service as living-up to their expectations to be satisfied are at least not dissatisfied with it and only 14.72% have poor satisfaction in using it. When comparing the level of satisfaction for each type of services independently as shown in Table (8) results revealed that customers' level of satisfaction vary among the three types of e-banking services. Since all e-banking services are ATM users, therefore, the satisfaction level tend to be the highest

in the case of using ATM machines 52.38% and 10.82% are satisfied and strongly satisfied respectively in using ATMs followed the internet where 33.33% of its users are satisfied and 8.66% are strongly satisfied respectively in using it. While the level of dissatisfaction shows only 4.33% of users were strongly dissatisfaction in using the ATM followed by 1.73% users are strongly dissatisfied in using the internet banking. For the mobile banking service as the less service used by e-banking service users, the majority of its users 10.82% show their satisfaction and 3.03% show their highly satisfaction in using it (as shown in Figure 8).

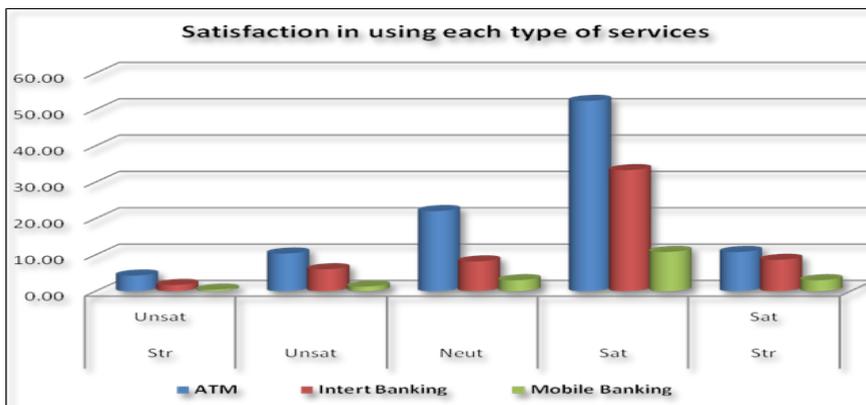


Figure (8): Satisfaction in using each type of service

Hence, to find out the frequency with which e-banking services users are having complaints against their banks with regard these three types of e-banking services provided, five parameters of frequency in having complaints are considered which are very often, often, sometimes, rarely, and never. Table (9) shows that the majority of ATM users about 35.93% never had problems and only 29.44% rarely face problems in using it, while the situation

differ in using internet banking, the majority of its users 19.48% face problems in using it rarely followed by 17.75% of its users who never had problem in using the service. Also 7.36% representing the majority of mobile banking users experienced problems in using it rarely followed by 5.19% of its users sometimes have problems in using it.

Table (9): Complaints regarding services

Frequency of complaints	% of complaints among users		
	ATM	Internet banking	Mobile banking
Very often	7 (3.03%)	4 (1.73%)	1 (0.43%)
Often	17 (7.36%)	6 (2.60%)	2 (0.87%)
Sometimes	56 (24.24%)	38 (16.45%)	12 (5.19%)
Rarely	68 (29.44%)	45 (19.48%)	17 (7.36%)
Never	83 (35.93%)	41 (17.75%)	11 (4.76%)
Total # of users	231	134	43

In general, users of e-banking services in Egypt are satisfied with the services provided since the majority of users 65.37% never or rarely experienced problems in using services. Customers' level of satisfaction is also measured regarding complaints settlement system

(as shown in Table 10) used by banks to respond and handle complaints for these three types of banking services to see whether it is satisfactory or not based on five parameters which are strongly unsatisfied, unsatisfied, neutral, satisfied, and strongly satisfied.

Table (10): Complaints settlement system

Response to complaints	% of satisfaction among users		
	ATM	Internet banking	Mobile banking
Strongly unsatisfied	14 (6.06%)	6 (2.60%)	1 (0.43%)
Unsatisfied	35 (15.15%)	17 (7.36%)	5 (2.16%)
Neutral	61 (26.41%)	26 (11.26%)	8 (3.46%)
Satisfied	102 (44.16%)	72 (31.17%)	23 (9.96%)
Strongly satisfied	19 (8.23%)	13 (5.63%)	6 (2.60%)
Total # of users	231	134	43

Results in Table (10) show that the majority out of the total ATMs’ users who faced problems in using it about 52.39% represent both satisfied and strongly satisfied people with the complaints settlement system used by the bank to handle problems, 26.41% of its users show indifference concerning the system and only 21.21% show their poor satisfaction concerning it. The situation differs among users of internet banking and mobile banking services. 36.80% of internet banking users who are less than half of its users show satisfaction and highly satisfaction concerning the system used by the bank in handling problems faced by them in using the internet banking services and 12.56% of mobile banking users are satisfied and strongly satisfied with the system used by the bank in settling problems facing them in using the mobile banking services.

In general, results show customers are satisfied regarding the system used by banks in settling their complaints regarding problems faced when conducting their banking transaction through these three services, however their level of satisfaction tend to be highest in case of ATM than in internet banking and mobile banking and this could be because the majority of users are ATMs users while numbers are lower in the case of internet banking and mobile banking.

6.8 Part Three (C): Problems faced by customers in using various banking services

In this part of the questionnaire, problems faced by all respondents in using various banking services are examined. As shown above in Table (10), that although customers see the e-banking services as convenient, save their valuable time, and as a cheaper way to access their accounts even after the banks’ working hours, they still prefer to visit the branch to conduct most of their banking transaction. Whether, visiting the branch or having service online using one or the three types of e-banking services mentioned in the study, banks’ customers are usually facing similar problems. Therefore, the study had also examined similar problems (as shown in Table 11) usually faced by customers in using both offline banking services through branches or online banking services through ATM machines, Internet banking, and Mobile banking by asking customers to give their level of agreement on 27 common problems usually faced in using both online or offline services based on five parameters which are strongly disagree, disagree, neutral, agree, and strongly agree that will be classified and ranked later for each type of service independently according to their importance for customers using the mean and standard deviation.

Table (11): problems usually faced by customers both offline & online

F#		% of respondents				
		Strongly Disagree	Disagree	Neutral	agree	Strongly agree
1	Neither I have PC (at home/ office) nor do I have internet connection	39.62	44.62	0.77	5.39	9.62
2	ATM machines record incorrect debit and credit amounts	26.15	39.23	21.54	11.54	1.54
3	I am not satisfied with the security system of online banking services	8.85	25.38	23.46	36.54	5.77
4	Quality of internet banking services are bad	12.69	30	29.23	23.85	4.23
5	It takes long times to finalize the transactions	6.92	28.85	28.85	27.69	7.69
6	I don't know how to use the online services whether through the internet or Mobile	7.69	25	18.85	30	18.46
7	I don't trust the internet as a channel for banking as it is not safe	5	22.31	25	32.69	15
8	I like meeting people and prefer face-to-face banking	6.15	16.92	19.23	36.54	21.15
9	There are a chance of fraud and forged transactions in internet banking	3.85	11.54	19.62	41.54	23.46
10	Whenever I need money after business hours, I experienced problems with ATM machines like machine out of order	8.46	26.92	16.92	35	12.69
11	Whenever I need money after business hours, I experienced problems with ATM machines like machine out of cash	5.77	23.46	16.92	36.92	16.92
12	I feel helpless after business hours when my card is stuck up by ATM machines	10	12.69	17.69	43.85	15.77
13	Cash depositing facility is not available through ATM machines	7.31	28.85	27.69	26.54	9.62

14	Transferring funds to other person's account is not available through ATM machines	4.62	18.08	29.23	36.92	11.15
15	The internet banking website is not user-friendly	6.15	25	31.54	26.92	10.38
16	The facility to operate banking transactions through mobile is not provided by my bank	3.85	22.69	36.54	24.23	12.69
17	Facility of paying utility bills by using the balance of my account through the ATM, Internet, or Mobile is not available	5.769	18.08	28.85	35.38	11.92
18	The bank doesn't send message when new policy is introduced by the bank regarding consumer banking	10	36.15	22.31	26.54	5
19	No message of confirmation is received on my mobile or mail at my e-mail address having complete details as specific amount either debited or credited from my account	8.85	26.54	25	29.23	10.38
20	Feeling unsecure or unsafe when using online services whether through ATMs, Internet banking, or Mobile banking	6.54	27.31	21.15	36.15	8.85
21	I don't trust internet when it comes to managing my money	7.31	23.08	15.38	30.38	23.85
22	I find the process to become online banking users to be difficult	8.46	30.38	22.31	27.69	11.15
23	The fees of online banking services (ATMs, Internet banking, or Mobile banking) are too expensive.	7.31	23.85	28.85	31.54	8.462
24	Small keyboards and small screen makes data entry to be difficult and inconvenient in using mobile banking	5	29.23	17.31	29.62	18.85
25	Long waiting times in queues when visiting the branch	5	14.23	11.92	30.77	38.08
26	Limited operating hours (opening & closing hours)	4.62	11.54	15.38	40.38	28.08
27	Service quality at the branch affect the usage of e-banking services	5.39	10.77	29.23	40	14.62

6.8.1 Problems faced by customers in visiting the branch

Through analyzing customers' level of agreement using the mean and standard deviation concerning the four most common problems usually faced when visiting the branch, F#25 "long waiting times in queues" was the first and the most important problem facing customers and dissatisfy them followed by F#26 "limited operating hours (bank's opening & closing hours) as the second important problem from customer point of view especially when they face problems or need help after the bank's working hours as shown later. This give a message to banks about the importance of promoting the e-banking services as an alternative banking services channels available 24 hours x 7 days a week and as a strategic way of enhancing customers' satisfaction as well as relieving workload for tellers who are serving customers inside the banking halls. F#27 "Service quality at the branch affect the usage of e-banking services" was the third problem in its importance to customers at the branch revealing the message that both offline and online services are not independent, instead they complement each other and that the good services received by customers at the counter play a vital role in promoting the adoption and usage of e-banking services. The last problem with the less mean among those problems faced at the branch was F#5 concerning the long times required to finalize the transactions, only 28.8% of banks' customers feel neutral concerning this factor. It represents the less problem in affecting customers' satisfaction when visiting the branch i.e. customers can accept long times required to finalize their transactions at the branch without expressing

dissatisfaction if they will receive good services and conduct accurate transactions.

6.8.2 Problems faced in using ATM machines

Customers are asked to give their degree of agreement concerning six problems representing the most common problems usually faced by them in using ATM machines. Mean and standard deviation were then used to rank those problems according to their importance to them. The frequencies of F#10, F#11, F#12, and F#14 revealed that customers show their agreement on problems like machine out of order, machine out of cash, card stuck up in ATM machines specially after banks' working hours and the unavailability of transferring funds to other accounts using ATM machines. Those factors differ in their level of importance as specified by customers. According to customers F#12 "I feel helpless after business hours when my card is stuck up by ATM machines" represent the first and most important problem with the highest mean 3.45 about 43.8% of customers agree that they felt helpless when their cards stuck up by ATM machines after bank's working hours, followed by F#11 as the second problem experienced by 38.9% of customers who claim finding ATM machines out of cash specially if they need money after the banks' working hours. 36.9% of customers express their agreement on the unavailability of transferring funds to other's account using the ATM machines which was represented by F#14 as the third problem faced by them. F#10 which is ATM machines out of order is the fourth problem that 35% of customers claim facing it when using ATMs especially after the banks' work-

ing hours. The situation differ with F#13, and F#2 where customers show their disagreement concerning problems like the unavailability of cash depositing facility through ATM machines and that the ATM machines record incorrect debit and credit amount as the fifth and sixth problem with mean 1.151 and 0.976 respectively i.e. that those problems doesn't exist and even if it does it will be rarely and of less importance.

6.8.3 Problems faced in using Internet banking

Frequencies of F#7, F#9, and F#21 revealed that customers show their agreement concerning problems of security represented by these factors when using the internet. F# 9 was ranked as the first and most important problem about 41.5% of customers were afraid of using the internet banking because of the chances of fraud and forged transactions that may exist when using the service especially in conducting banking transactions. Followed by F#21 and F#7 representing the second and third problems in their importance to customers with mean 3.31 and 3.18 respectively, as customers don't trust the internet when it comes to manage their money because they feel that it is not safe. These results were consistent with results shown above where security problems were the most important reasons prohibiting the usage of internet banking service, giving the same message to bank's managers about the importance of incorporating security elements in the e-banking services provided especially through the internet and make customers aware of these elements to gain their trust. Customers feel neutral concerning F#15 "the Internet banking website is not user-friendly" representing the fourth problem from its impo-

rtance to customers which means that even if the internet banking website is not living up to their expectation to be satisfied in their usage of it, they are still not showing dissatisfaction concerning their bank's services. This could be because only few numbers of users are using the internet in banking transactions. However, this doesn't mean that it is not important; banks must make their website simple, clear, and easy to enhance its usage. Frequencies of F#4 "Quality of Internet banking services are bad" representing problem number 5 with mean 2.71 and F#1 "Neither I have PC (at home/office) nor do I have internet connection" representing problem number 6 with mean 1.91 respectively show that customers disagree on that the quality of internet banking services are bad and that the reason for not using internet banking service result from not having PC or internet connection.

6.8.4 Problems in using Mobile banking

Since Mobile banking is the latest introduction of e-banking service, provided by only limited numbers of banks, mobile banking remains in its infancy stage of usage used by only a small number of bank's customers. Therefore, only two problems were considered as the most common problems faced by customers in using this type of service. By using the mean and standard deviation, these two factors are ranked according to their importance for customers based on their degree of agreement as follow: F# 24 "small Keyboards and small screen make data entry to be difficult and inconvenient in using Mobile banking" is the first and most important problem faced by customers in using the service. Most customers

claimed that the small keyboards of mobile phone make it difficult to use and inconvenient, also small screen with small amount of information make the visual display of the device insufficient and very difficult to use especially in transferring funds, paying bills, and conducting other banking transactions and all this increase customers' feeling of uncertainty in using the service. Customers feel neutral concerning F# 16 which is the second problem in using mobile banking services i.e. that customer's level of satisfaction in using the service is not affected by the availability of this service the reason for being of less importance to customers may be because most of them never heard about or used this type of service as it only provided by limited numbers of banks.

6.8.5 Problems in using the e-banking services in general

Respondents are asked to give their comments on the remaining factors against the three e-banking services mentioned in the study namely the ATMs, the Internet banking, and the Mobile banking as well as the branch banking through giving their level of agreement on problems usually faced and dissatisfies them in using the online banking service in general. These problems are ranked according to their importance to customers using the mean and standard deviation. Frequencies of F#3, F#6, F#8, F#17, F#19, F#20, and F#23 revealed that majority of banks' customers show their agreement on these factors among which F#8 "I like meeting people and prefer face to face banking" is considered the first factor affecting customers' satisfaction because of the large number of customers even among users of e-banking services who were still prefer-

ring to visit the branch and conduct face-to-face transactions. The second important problem from respondents' point of view was F#17 "Facility of paying utility bills by using the balance of my account through the ATM, Internet, or Mobile is not available" which reveal that paying bills using the ATM, the Internet banking, or the Mobile banking is not provided by all banks in Egypt and even if it is provided by limited numbers of banks, customers are not aware of it. F#6 "I don't know how to use the online services whether through the internet or Mobile" was the third problem. F#20 "Feeling unsecure or unsafe when using online services whether through ATMs, Internet banking, or Mobile banking" and F#23 "The fees of online banking services (ATMs, Internet banking, or Mobile banking) are too expensive" represent the fourth and fifth problem in its importance to customers followed by F#19 "No message of confirmation is received on my mobile or mail at my e-mail address having complete details as specific amount either debited or credited from my account" as the sixth problem and F#3 as the seventh problem was "I am not satisfied with the security system of online banking services". From the above results, F#3 and F#20 confirm the importance of security problem for customers in using the e-banking services that was proved many times by customers in this study whether when asking them about the most important problems facing and dissatisfying them in using each service independently or by asking them on the most important factors encouraging them on using or increasing their future usage of e-banking services. These two factors confirm the message directed to banks' managers on the importance of

emphasizing security elements incorporated in the e-banking services provided when they communicate with their customers. Also, banks must provide the e-banking services at reasonable fees to be affordable by all customers as well as acknowledging them about how to use it safely especially services provided through the internet and the mobile. Finally, confirmation message after each banking transactions to confirm and ensure its accuracy is considered to be very important to customers especially in using e-banking services where no face-to-face interaction with banks' personnel exist. Meanwhile, for F#18 and F#22, majority of banks' customers show their disagreement on the difficulty of becoming e-banking users represented by F#22 and on F#18 that banks don't send message to customers when new policy is introduced.

6.9 Part Four: Suggestions for remedial solutions

In this part of the study, respondents both users and non-users of e-banking services are asked to give their suggestions for remedial solutions that will encourage them and enhance their future usage of the services. For this purpose, the questionnaire provide respondents with 18 factors according which they have to express their degree of agreement based on five parameters which are strongly disagree, disagree, neutral, agree, and strongly agree. Those factors are supposed to influence their decisions of usage by encouraging them to increase their future usage of the online services. Table (12) show customer's degree of agreement concerning these factors and by using the mean and standard deviation these factors are ranked to show its importance to customers

Table (12): Factors affecting customers' decisions in using e-banking services

F #		Mean	Std. Deviation	Ranking
1	Attractive rewards and prizes	3.30	1.056	17
2	Simple/ clearer services	4.33	0.754	1
3	Higher security	4.32	0.826	2
4	Phone aid when setting up or facing any problems	3.91	0.924	12
5	Free transactions	3.98	0.852	9
6	Nothing else, I already often use online banking services	3.00	1.144	18
7	Reputation of the bank	3.97	0.783	10
8	Fast and efficient services	4.04	0.844	8
9	Accuracy of transaction	4.12	0.801	4
10	Friendliness of bank's personnel	3.97	0.878	11
11	Honesty and trustworthiness of staff	4.08	0.859	6
12	Higher interest on saving and deposits	3.78	0.981	14
13	Lower interest charges on services	4.08	0.837	5
14	A wide range of services provided	4.04	0.840	7
15	The availability of ATMs	4.17	0.821	3
16	Convenient location of the bank	3.86	0.990	13
17	Internal appearance of the bank	3.65	0.932	15
18	External appearance of the bank	3.56	0.905	16

From Table (12), the frequency of F# 2, F# 3, and F# 15 revealed that customers show their extreme level of agreement (strongly agree) with providing simple and clear service, providing service with higher security and increasing the availability of ATM machines respectively. These mean that those factors are critical and on top priorities for customers and have a major contribution as well as playing important role in the success of e-banking services provided. These results give the message for banks' managers that in order to retain and increase the numbers of e-banking services users, they need to make the services as simple and clear as possible

and to ensure the security of the services provided as well as increasing the number of ATM available to customers to offer them the convenience of being able to do most of their banking transactions from machines often situated outside the bank especially in places like malls, supermarkets, Hypermarkets ..etc., as well as being able to access their account 24 hours a day. Customers show their agreement (agree) on factors #4, #5, #7, #8, #9, #10, #11, #12, #13, #14, #16, and #17. However, those factors differ in their ranking of importance starting by F# 9 and ending by F#17 as follow:

F#		Ranking
9	Accuracy of transaction	4
13	Lower interest charges on services	5
11	Honesty and trustworthiness of staff	6
14	A wide range of services provided	7
8	Fast and efficient services	8
5	Free transactions	9
7	Reputation of the bank	10
10	Friendliness of bank's personnel	11
4	Phone aid when setting up or facing any problems	12
16	Convenient location of the bank	13
12	Higher interest on saving and deposits	14
17	Internal appearance of the bank	15

According to their importance to customers F#9 which is conducting accurate transaction when using the services is the most important. The frequency of F#11 "honesty and worthiness of the staff" and F#13 "providing services with low fees" are of the same importance and come after the accuracy of transactions conducted. F#8 "fast and efficient services" and F#14 "providing a wide range of services by these means" are also of equal important to customers followed by other factors mentioned above

till reaching F#17 "the internal appearance of banks" which is the less important in affecting customers' decision in using e-banking services.

For F#4 "Phone aid when setting up or facing any problems", F#5 "honesty and worthiness of the staff", F#10 "reputation of the bank", and F#11 "friendliness of bank's personnel", these factors reveal the same message proved above in Table (12) that bank's customers are not viewing the online banking services as independent from tradi-

tional banking services they receive at the counter but instead as a complementary to it i.e. that the bank's reputation as well as the good services received at the branch from bank's staff play a vital role in promoting and building trust in e-banking services as customers will find aid from bank's personnel when setting up the services or facing any problems in using it and this is consistent with previous study done by Yap *et al.* (2009).

While customers remain neutral and feel indifferent regarding F#1 "providing attractive rewards and prizes", F#18 "the external appearance of the bank" and F#6 "nothing need to be provided for those who are already users of e-banking services". This means that these factors are not affecting customers' decision and have low influence in motivating them to use the e-banking services. However, for F#6 concerning respondents who are already users of e-banking services and need nothing to encourage their usage, banks must believe that even users of the services need incentives to be retained and encouraged to increase their future usage.

In the following section, final conclusions and discussions of the underlying study will be made. Furthermore, recommendations for bank's managers as well as suggestions for further research into the field will be given.

7. Discussions and Conclusions

Results show that banks in developing countries like Egypt are still not benefiting from e-banking services to its full potential as a customer-service tools aim to relieve the workload for tellers inside the banking halls. Therefore,

banks can use publicity through mass media to make their customers more aware of their new products or services in order to encourage their usage.

Banks have to target those customers whose usage of computers and internet are on the higher side for promoting e-banking services usage and in the same time they have to encourage the existing users of internet banking and mobile banking services to use these services more frequently through rewarding them for conducting their transactions using these electronic channels.

In using the e-banking services, bank's websites is the medium of interactions between the bank and its customers which lead to the absence of human-to-human interaction that represent an important problem for banks' customers' both users and non-users and affect their level of usage and satisfaction when using the e-banking services. Therefore, to overcome this problem, banks should represent their total quality efforts on their websites and pay more attention to the specific features of their online services. Moreover, sending confirmation message after each banking transaction on mobile or via email plays an important role in improving trust and overcoming the lack of human-to-human interaction.

As the findings of this study also show how security affects customers' satisfaction and plays an important role in gaining their trust. Therefore, banks must control security factors by providing a safe, reassuring, and reliable e-banking services that are able to offer customers with a safe environment free of privacy interruption. Banks should also increase their customers' awareness of threat posed by fake websites operators

and educate them about how to differentiate between legal and illegal websites. However, when securing their websites, banks must take into consideration that security approach may create webpage complication and unfriendly to use. Therefore, they need to manage both the security as well as the user-friendly approach in order to secure customers and facilitate their adoption and usage of these services.

8. Recommendations for Further Researches

Due to the exploratory and descriptive nature of this study, some more opportunities and suggestions for further research are presented. As mentioned in the study limitation, respondents of this study were sampled from only Alexandria population that doesn't represent the entire Egyptian population. Further research is therefore required to extend these results in other geographical areas in Egypt and among managerial employees at banks. The inclusions of banks' employees and managers will allow for more insight to be gathered on employees' view points, attitudes, perceptions, and overall satisfaction.

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