The Adoption of Online Banking: a Jordanian Perspective

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Abstract
The purpose of this study to investigate the adoption of online banking in Jordan. Furthermore, the study was conducted to examine the factors that influence the adoption of online banking among customers. This research is approached by using survey method to examine the relationship between independent and dependent variables. The findings and conclusion of the study will depend on the fully utilization of statistical data collected and analyzed using SPSS. This research is based on the level analytical research type. It is hoped to identify the influences of the adoption of online banking, hopefully the final report and the result of this study will be achieved successfully in helping future research.

Keyword
Internet Banking, customer satisfaction, ATM (Technology Acceptance Model), service quality.

1.0 Introduction
The past years have seen substantial changes in banking. Advances in computing and telecommunications have driven these global changes. Since the mid-1990s, development has been a fundamental shift in banking delivery channels toward using self-service channels such as online banking services (Pikkarainen 2004). The first appearance of online banking was in USA 1995. In general, Europe has been and still the leader in online banking technology and usage (Schneider, 2001). The acceptance of online banking services has been rapid in many parts of the world. Therefore bank web sites that offer only information on their pages without possibility to do any transactions are not qualified as online banking services. The measure of this online service is this system satisfies customers need or not? If its satisfy then we can call that this system success. For years, financial institutions have used powerful computer networks to automate millions of daily transactions; today, often the only paper record is the customer's receipt at the point of sale. Now that its customers are connected to the Internet via personal computers, banks envision similar economic advantages by adapting those same internal electronic processes to home use. Today, most large national banks, many regional banks and even smaller banks offer some form of online banking, variously known as PC banking, home banking, electronic banking or Internet banking.

Online banking (or Internet banking) is a term used for performing transactions, payments etc. over the Internet through a bank, credit union or building society's secure website. This allows customers to do their banking outside of bank hours and from anywhere where Internet access is available. In most cases a web browser is utilized and any normal Internet connection is suitable. No special software or hardware is usually needed. Actually online banking included various technology such as telephone banking (landline, mobile phone), direct bill payment; electronic funds transfer (EFT), and internet banking. There are five basic services for online banking according to Chou and Chou (2000)
1- View account balance with transaction history.
2- Paying bill.
3- Transferring funds between accounts.
4- Request credit card advance.
5- Ordering check
Other services such as opening account, deposit and withdrawals, rate and fees, security. Among other things, banks must understand who specially adopting commercial technology and why. A primary benefit for the bank is cost savings because its use cheapest delivery channel and reduce number of service staff; and, for the consumer, a primary benefit is convenience with self service (Bruno, Gerrard and Cunningham, 2003).

An influential model in this domain of information technology and information systems is the technology acceptance model (TAM) according to (Davis, 1989) that suggests the prospective user's attitude toward to explain that the user can use the system or technology. TAM is utilizing model use to help explain and understand information system/technology adoption. The (TAM) has two major elements, first one is perceived usefulness where a person believes adopting technology will enhance his job performance, the second is perceived ease of use as the defined to understandable interaction with system and ease of getting what is required. The previous studies indicate that these two factors help customers in adopting online banking.

There are three categories related to online banking:-
1- Customer service quality.
2- Online system quality.
3- Banking service product quality.
Table 1.1 explains the major regions of the world (millions of users) using online banking (Epaynres, 2002)

<table>
<thead>
<tr>
<th>Region</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>18.6</td>
<td>28</td>
<td>37.8</td>
<td>47.7</td>
<td>57.9</td>
</tr>
<tr>
<td>USA</td>
<td>9.9</td>
<td>14.7</td>
<td>17.1</td>
<td>20.4</td>
<td>22.8</td>
</tr>
<tr>
<td>Japan</td>
<td>2.5</td>
<td>6.5</td>
<td>11.9</td>
<td>19.6</td>
<td>21.8</td>
</tr>
<tr>
<td>Asia</td>
<td>2.4</td>
<td>4.4</td>
<td>6.8</td>
<td>9.8</td>
<td>13.8</td>
</tr>
<tr>
<td>Rest of the world</td>
<td>1.0</td>
<td>1.7</td>
<td>3.1</td>
<td>5.1</td>
<td>6.1</td>
</tr>
</tbody>
</table>

In general, we can find two fundamental reasons for online banking development. First, banks have cost savings by offering online banking services. It has been proved that online banking channel is the cheapest delivery channel for banking products once established related to (Sathye, 1999; Robinson, 2000; Giglio, 2002). Second, banks have reduced their branch networks and reduced the number of service staff, which has use the way to self-service channels as quite many customers felt that branch banking took too much time and effort (Karjaluoto, 2003). Therefore, time and cost savings the main reasons for online banking acceptance refer to (Polatoglu and Ekin, 2001; Black, 2002; Howcroft, 2002).

Online bankers are the most profitable segment to banks (Mols, 1998; Robinson, 2000; Sheshunoff, 2000). To start with, customers need to have an access to the Internet to use the service. Also customers can easily access services when and where they want of inter-personal exchanges (Bitner, 2000). New online users need first to learn how to use the service (Mols, 1999). If users are not willing to accept the information system, it will not bring full benefits to the organization (Davis and Venkatesh; 1996Davis, 1993). The more accepting of a new information system that users are willing to make changes in their practices and use their time and effort to start using the new information system (Succi; Walter, 1999).

A system that satisfies user’s needs with lower delivery cost as well as better service is a subjective measure of system success (Lee and Allaway, 2002). (Karjaluoto, 2002) has shown several factors affect consumer acceptance of online and mobile banking such as consumer behavior, demographic , attitude, motivation, experience with computer, furthermore, showed that previous experience with computers and technology as well as people’s attitudes toward computers influences , whereby the people’s are willing to toward online banking. Previous researchers suggest that attitude factors such as Internet experience, the advantage of online banking and perceived risk, and perceived behavioral control factors predict the intention to adopt Internet banking services.

1.1 The evolution of the banks web presence

Type of access

- Simple web presence; Static pages with general information about the bank
- Offline interactive site; Customized contact with client; online communication through e-mail
- Internet banking service
- Online transaction

(Figure 1.1) the evolution of the banks web presence
Earlier, the website design of banks was in a simple way, other word traditional website, which it contains the general information about the bank and its services without any transaction via the system. By the time the growth and the development of technology and internet push of many banks to adopt a new technologies to redesign the contain of website to make it more contact with real life or digital era in term of dynamism and friendliness and so on, which it starts from interactive with customers via e-mail to allow them to make online transaction and keep on this way for the future needs for them (Tuchila, 2000).

1.2 Advantage of online banking

(Tuchila, 2000) identified the advantage of operating online banking in term of bank and customer, respectively, which it shows in (Table 1.2) below.

<table>
<thead>
<tr>
<th>Operating online banking</th>
<th>Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank</td>
<td>Improved market image</td>
</tr>
<tr>
<td></td>
<td>-Reduce transaction cost</td>
</tr>
<tr>
<td></td>
<td>-Rapid response to the market changes</td>
</tr>
<tr>
<td></td>
<td>-Increased market penetration</td>
</tr>
<tr>
<td></td>
<td>-Advertise/Sell new product</td>
</tr>
<tr>
<td>Customer</td>
<td>Reduce cost in accessing and using the bank service</td>
</tr>
<tr>
<td></td>
<td>-Increase comfort and time saving(transaction can be made 24 hours a day)</td>
</tr>
<tr>
<td></td>
<td>-Speed of transaction</td>
</tr>
<tr>
<td></td>
<td>-Better administration of funds</td>
</tr>
</tbody>
</table>

(Table 1.2)

2.0 Satisfaction and Adoption online banking

Satisfaction is a psychological process of measuring emotional and cognitive of people (Oliver, 1981). User satisfaction is one of the most widely used measures of information system success for three reasons. First, using satisfaction as a success measure makes common sense. Second, there are reliable tools for measuring satisfaction. Third, other information system success measures are either conceptually weak or hard to acquire (Delone and McLean, 1992). The user friendliness of domain names as well as the navigation tools available in the web-sites is an important determinant for ease of use (Cooper, 1997). In addition, the design of the web-sites with suitable use of graphical interface is also considered as an important element. Web content and design have also been found to influence consumer satisfaction. Availability of access to the Internet is an essential element for the adoption of online banking such as access to computer and the Internet. Accessibility is essential element for the adoption of online banking according to (O’Connell, 1996) identified lack of access to computers as one of the possible reasons for the slow adoption of Internet. The people have a weak understanding of online banking security risks although they are aware of the risks according to (Roboff and Charles 1998). Many customers are unwilling to give private information over the telephone or the Internet, for example credit card information (Hoffman and Novak, 1998). (John and vijayasaratthy, 1998) suggest that customers believe that internet payment channels are not secure, this reduces customer’s level of trust online banking transactions. Several studies have defined several perspective of the customer adoption of online banking such as:

1- From the customer perceptions and expectations of service quality to measuring Customer satisfaction/dissatisfaction using SERVQUAL according to (Lewis, 1991; Holmund and Kock, 1996; Aladwani, 2001; Jun and Cai, 2001).
2- Customer motives and acceptance of technology based on banking services according to (Barczaket, 1997).
3- Customer usage, attitudes and behaviors towards online banking focusing on the socio-economic/demographic factors according to (Beckett, 2002; Howcroft, 2002).

2.1 Technology Acceptance Model

TAM is based on the theory of reasoned action (TRA), which TRA is any other factor that influences behavior for example systems design variables, user characteristics, task characteristics, political influences and organizational structure do so only indirectly by influencing attitude toward behavior, subjective norm or their relative weights. According to (Davis, 1989), the technology acceptance model (TAM) is a Prospective user’s overall feelings or attitudes toward using a technology-based System or procedure represents major determinants as to whether or not he/she will use the system, which he defined two main keys of (TAM), Usefulness is defined as a person believes that using a particular technology would enhance her/his job performance while ease of use is the degree to which using IT for the user. (O’Cass and Fenech, 2003)
suggests that TAM has been utilized to understand and explain information systems/technology adoption in marketing, including internet-based, retail consumer behavior. TAM has much strength; including its specific focus on information system (IS) use, its base in a theory of social psychology, the validity and reliability of its instruments. Online banking should have five keys to offer good service for customers, according to (Ainscough and Lucketts 1996) such as accessibility, availability, interactivity, dynamism, friendliness.

2.2 Theoretical Framework

Whereby, this diagram shows the two independent variables, the first one is, ease of use, which contain these factor (Accessibility, Availability, Friendliness), the second one is, usefulness which contain (interactivity, Dynamism). And the dependent variable (online banking adoption) according to (Davis, 1989; Ainscough and Lucketts, 1996). In general, in this framework, its consider these factors (accessibility, availability, interactivity, dynamism, friendliness) as an independent variable, because of those factors will be positively influenced the dependent variable which be as (online banking) to be conducting with the hypothesis to create the satisfaction and adoption of online banking users in the working environments.

2.3 Hypothesis

In this study, two hypotheses will be tested and therefore can be stated as follows:
H1A. There is a positive relationship between ease of use and online banking adoption.
H2A. There is a positive relationship between usefulness and online banking adoption.

3.0 Research Methodology

The purpose of this study to identify using technology acceptance model (TAM) as process to create satisfaction and adoption of online banking users in Jordan. In this research, making a questionnaire is used to measure and evaluate the level of technology acceptance model among the online bank users, because of questionnaire is one mechanism of data collection which is very famous among researches; also it’s easy for respondent to answer the questions because the data required is already in their minds. The sample is customers of online banking in Jordan. The questionnaire will be handed out directly to the sample and will be collected back after specific time that already determined to ensure the validity and accuracy as well as credibility of data.

With respect to study, the questionnaires that will be used in this research are coming from the previous research on technology acceptance model (TAM) related to (Ainscough and Lucketts, 1996). There is modification inside the questionnaires to fit the Jordanian perspective. I borrowed the questionnaires directly from the previous research on technology acceptance model (TAM) with some new questions; the questionnaire will be distributed to the online banking users. Five point scales ranging from strongly disagree to strongly agree to be used as a basis of questions to be as a feature of excellent online banking. The questionnaire consists of three pages; it is divided into three categories namely:

Category 1: Demographic this comprises 6 items with regards to the personal information of the responded.
Category 2: 26 items have been used to examine the independent variable (ease of use).
Category 3: 22 items have been used to examine the independent variable (usefulness).

A total of 100 questionnaires were distributed among 100 customers, who deal with two banks in Jordan. The sample contains 80 respondents, which were filled and returned completely, which was distributed randomly, and 20 were dropped due to incomplete answers. In sum, the response rate was 80%. The data available will be analysis using the SPSS which the
data gathering from the respondents using online banking in Jordan. Whereby, the respondents will be from a different level. The results will be in ratio or proportion.

3.1 Reliability Analysis
Reliability of measure indicates the consistency and stability with which the instrument is measuring the concept and helps to access the goodness of a measure. (Table 3.1) mentioned below the reliability analysis of the questionnaire with two independent variable. The reliability analysis was done on 80 respondents that they are using online banking in Jordan. All the questions were administrated and tested. The reliability of these 48 questions was measured using Cronbach’s coefficient alpha (Cronbach’s alpha) has been used to measure reliability among variables. Cronbach’s Alpha scale ranging from 0.00 to 1.00. The Alpha value for all items was .772. As a result has showed the questionnaire has a good reliability. In addition the Alpha value for (Table 3.2) which comprise 26 items and (Table 3.3) which comprise 22 items was .662 and .677 respectively. From (Table3.4), it shows the reliability analysis between each independent variable and dependent variable respectively. The analysis found that Alpha value of ease of use and usefulness are .6628, .6772 respectively. The analysis found that all two independent variables (ease of use, usefulness) considered as stable and acceptable since the Alpha value for them over the standard 0.60. In conclusion, the Cronbach’ alpha values are above acceptance value 0.60 indicated that all the constructs are deemed to have suitable reliability. In other words, the Alpha value for all items was .772, as a result has showed the questionnaire has a good reliability. That’s mean that the responses of the sample has confidence as well as to ensure reliable of questionnaire, furthermore, by the chosen wording of questionnaires was simple to avoid any ambiguous in this study.

3.2 Descriptive Analysis
Descriptive research is used to obtain information concerning the current status of the phenomena to describe variables or condition in a situation. It is used when the objective is to provide a systematic description that is a factual and accurate as possible or when the problem is well structured and there is no intention to investigate cause/effect relation. Descriptive analysis was done to examine the central tendency and dispersion. The mean and the standard deviation of the data have provided a good idea of how respondent have reacted to items in the questionnaire. From the answers of respondents, the mean and standard deviation for the independent variable of ease to use which it comprises(accessibility, availability and friendliness), with 26 items on five point Licker scale scores a minimum of 2.86,1.15, respectively, and a maximum of

3.3 Pearson Correlation Analysis
H1. There is a significant relationship between ease of use and online banking adoption.
(Table 3.5) shows the results of bivariate correlation between ease of use and online banking adoption. The results indicate that there is a significant result between ease of use and online banking adoption. Pearson correlation value for r=0.499 and significant at p<0.01. The correlation between independent variable and determinant of online banking adoption has a good value. This indicates that this IV is having a great significance further support the relationship between adoption of online banking among online customers and ease of use factor. Therefore, the H1 is accepted.

H2.There is a significant relationship between usefulness and online banking adoption.
From table (1.8), it shows the result of correlation between usefulness and online banking adoption. The result indicates that there is a significant relationship between usefulness and online banking adoption. Personal correlation value for r=0.45 at p<0.01. The correlation between independent variable and determinant of online banking adoption has a good value. This indicates that this IV is having a great significance further support the relationship between adoption of online banking among online customers and usefulness Therefore, H2 is accepted.

The results also indicate that there is a positive relationship between ease of use and usefulness with online banking adoption. It shows that, any increasing in these two factors (usefulness and ease of use) will also increase the bank online adoption.

3.4 Multiple Regression Analysis
Regression analysis (Table 3.6) is carried out to test the affect of independent variable to dependent variable. From the previous analyses, this paper has identified that the two independent variables have significant influence on the level of adoption of online banking; also each IV is also showing significance relationship with the DV based on the Pearson r and p value obtained from the correlation analyses. The result of multiple regression analysis is summarized in( Table 3.6). It is observed that all of the independent variables will give a significant affect to dependent variables, whereby R2 = 0.293, F=15.945, p<0.01. All two dependent variables show the significant effect to online banking adoption. Ease of use is significant at B=0.527, t=3.14 and p<0.01, from this result, this factor has strong significant with adoption of online banking. While usefulness is significant at B=0.32, t=2.18 and p<0.05, meaning to say, that this factor has a moderate significance with adoption of online banking. All two variables are perceived to give a positive effect to dependent variable. Meanwhile, the relationships between usefulness and ease to use, with regard to the adoption of online banking are considered as a strong.
participated in this study agree that ease of use has positively influence the adoption of online banking. In addition from the answers of respondents were participated in this study, which it explains in the descriptive table, the value of mean for the independent variable usefulness which comprises (dynamism and interactivity), with 22 items on five point Licker scores a minimum of 3.20 and a maximum of 3.61. In other words, the positive high mean value suggest that most respondent agree that usefulness has positively influence the adoption of online banking.

4.0 Research Summary

This study aims to measure the impact of online banking on customer management of banks and explain the advantages and disadvantages of using Online banking in the Jordan; this can be applied through determine the satisfaction of customer using online banking in Jordan that service quality has significant impact to their expectation. Also determine accessibility, availability, interactivity, dynamism, friendliness of online banking and how its affect the online banking in Jordan. Moreover; examine the relationship between ease of use and usefulness and online banking adoption in term of service quality, customer satisfaction and customer needs. The purpose of this study is focusing on the online banking environment in Jordan and what is expected of these banks by their customers. Furthermore, this study focus on the independent variable (accessibility, availability, interactivity, dynamism and friendliness), in addition service quality and technology acceptance model to examine the effect on online customer, who’s using online banking. There are satisfactions of the online banking services through three categories related to online banking: customer service quality, online system quality, and banking service product quality. Literature in services suggests that service quality has strong impact of satisfaction (Cronin, 2000). Results of this study invoke several actions that online banking can take to enhance service quality or improve tangible elements service quality to increase customer satisfaction, to attain higher levels of favorable outcomes and to reduce negative outcomes.

Since the Web site functions as an information system, the structure of online catalogues should be easy to follow and navigate. This finding is encouraging for online bank management, suggesting that customers may be willing to attempt to use the internet, given webpage contents more clear and simplify to make it easy to understand with user guide, and involve relatively few process stages to make it easy as well as reduce complicated for customers. For example the simplicity and smoothness of the whole transaction process is also of critical importance to ensure customer satisfaction on the Internet. This study seems to support the hypothesis, that there is positive relationship between the independent variables and the independent variables measured. The result supports the importance of using technology acceptance model and service quality among online banking in Jordan, to increase customer satisfaction and adoption. Again, this study argues that the banking industry with some insight into factors that will have positively affect customer acceptance of online banking technology and highlights areas of special consideration in the service quality with these new technologies will help banks to be more efficient and successfully in this industry. This study argues that customer and the features of the online banking site can help in creating online banking adoption among Jordanian bank customers.

4.1 Recommendations for Future Research

Based on the findings, the following recommendations are made, in order to improve online banking; banks may wish to examine the navigational functions and compatibility of Web site software and hardware. (Jun and Cai, 2001) note that improvements in these areas will enable banks to increase the speed of online systems responses to customers’ input. In order to manage expectations in these areas it may be necessary to inform users of the most desirable technical specifications. Alternatively, (Sathy, 1999) suggests that the problem could be handled by appropriate customer education. Understanding the impact of familiarity with the technology and user experience and competence would be of value in this context.

There are opportunities for further research in this area to make several extensions of this study. First, how service quality create e-loyalty or e-trust for the customers. Second, extended research to cover other neighbor’s countries to make it wider spread. Other viable prospects for further research, to measure the infrastructure of technology and see how the infrastructure can contribute in online bank industry to be successfully in term of, service quality and technology to present a good service for customers. In order, to increase the level of satisfaction and adoption for customers in this industry.

4.2 Conclusion

In this study two hypotheses have been found strong impact on the dependent variable. In conclusion, this research argues that the functions of online bank site in term of features and other service can help in creating online banking adoption among Jordanian bank customers. Satisfaction customer online service quality is one of the crucial determinants of the success of online banking Online banks must be always adaptability of rapid changes in technology to present a good service for customer in term of quality, availability, accessibility, interactivity and friendliness to meet customer needs and focus always on increase level of customer satisfaction.
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5.0 Tables

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<th>Variance</th>
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| Reliability Coefficients | 48 items |
### Table 3.1

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<td>9.7936</td>
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Reliability Coefficients: 26 items

- Alpha = .7725
- Standardized item alpha = .7805

### Table 3.2

<table>
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<th>Statistics for Scale</th>
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Reliability Coefficients: 22 items

- Alpha = .6772
- Standardized item alpha = .6854

### Table 3.3

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<thead>
<tr>
<th>Variables</th>
<th>Cronbach's Alpha</th>
<th>Cronbach's Alpha Based on Standardized Items</th>
<th>Number of Cases</th>
<th>Number of Items</th>
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<tr>
<td>Ease of use</td>
<td>.6628</td>
<td>.6553</td>
<td>80</td>
<td>26</td>
</tr>
<tr>
<td>usefulness</td>
<td>.6772</td>
<td>.6854</td>
<td>80</td>
<td>22</td>
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<tr>
<td>All variables</td>
<td>.7725</td>
<td>.7805</td>
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(Table 3.4)

<table>
<thead>
<tr>
<th></th>
<th>Online banking adoption</th>
<th>Ease of use</th>
<th>Usefulness</th>
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<td>Online</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ease of use</td>
<td>.499**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Usefulness</td>
<td>.450**</td>
<td>.552**</td>
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</table>

(Independence Variables)

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>t</th>
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<tbody>
<tr>
<td>Ease of use</td>
<td>0.527</td>
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<tr>
<td>Usefulness</td>
<td>0.320</td>
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</tr>
<tr>
<td>Sig</td>
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</tr>
<tr>
<td>R2</td>
<td>0.293</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>15.945**</td>
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**p<0.01
*p<0.05
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