

ADOPTATION OF INTERNET BANKING IN UAE: FACTORS UNDERLYING ADOPTION CHARACTERISTICS

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ABSTRACT

Technological development has provided tremendous benefits for many industries, including the banking business. The diffusion of internet banking has been witnessed in many countries worldwide. The United Arab Emirates (UAE) recently is one of the most significant economies in its region and in the global arena. Internet banking has been utilized for many years in UAE, and the number of internet banking adopters in UAE has increased steadily. The main focus of this paper was to identify the characteristics of UAE consumers and their attitudes toward the internet banking. Factor analysis suggested seven characteristics important for internet banking adoption, namely compatibility, difficulty, security, trust, third party concern, status, and human contact. Analysis of variance showed that adopters and non-adopters differed on their attitudes toward three factors of adoption: compatibility, trust and human contact. No significant differences were found between attitudes of adopters and non-adopters toward the issues of security, third party concern and status. An interesting finding was that human or physical contact and trust were the most important factors for non-adopters.

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KEYWORDS: Internet banking, adopters and non-adopters of Internet banking, United Arab Emirates

INTRODUCTION

Technology changes the way customers use products and services. Technology has improved service quality including convenience, speed and economy. Online banking has become an important part of banks' services to customers. Online transactions include checking balances, transferring money to a third party, ordering checks, and paying bills (Chou & Chou, 2000; Karjaluto, Mattila, & Pento, 2002).

Online banking has become a focus for research since many banks have launched online services. Previous studies examining online banking have provided tremendous benefits for both academics and practitioners. For academics, a key issue is adoption characteristics of consumers in developing countries. Knowing customers' perceptions toward internet banking will help bank managers and management understand their customers better enabling them to increase customers' satisfaction.

Many scholars have studied the diffusion innovation of internet banking. One pioneering scholar Rogers (1962) demonstrated the process and characteristics of diffusion innovation. Other studies (Gerrard & Cunningham, 2003) identified major diffusion process factors of online consumers. Some studies have expanded the scope of research to developed countries (Sathye, 1999; Karjaluto, Mattila, & Pento, 2002; Mattila, Karjaluto, & Pento, 2003; Pikkarainen, Pikkarainen, Karjaluto & Pahnla, 2004; Waite & Harrison, 2004; White & Nteli, 2004; Lassar, Manolis & Lassar, 2005), to advanced developing countries (Gerrard & Cunningham, 2003; Wang, Wang, Lin & Tang, 2003; Akinci, Aksoy & Atiligan, 2004;) and in developing countries (Gurau, 2002; Rotchanakitumnuai & Speece, 2003; Eriksson, Kerem & Nilsson, 2005; Wallsten, 2005).

The diffusion of internet banking has been witnessed in many countries worldwide. The United Arab Emirates (UAE) recently is one of the most significant economies in its region and the global arena. Internet banking has been adopted for many years in UAE. Furthermore, the number of internet banking adopters in UAE has been increased steadily. Whether the adoption characteristics in UAE are similar to other countries is interesting for both academics and practitioners.

This is the first known study to examine the adoption of online banking among UAE consumers. This study aims to explore the factors contributing to the adoption of online banking. The two specific objectives of the paper are to examine UAE consumer perceptions toward online banking and to identify factors that explain consumers' perceptions toward online banking

This study is presented in four main sections. The first section presents the diffusion process as adopted from previous studies. The second section described the research methodology, including the hypotheses testing. The results section presents statistical analysis. The fourth section discussed the implications of these findings as well as conclusions and recommendation for future research.

LITERATURE REVIEW

Rogers (1995) identified four elements of the diffusion process: innovation, communication channels, time, and the social system. According to his study, these four elements are identifiable in every diffusion research study. Rogers explained innovation as an idea, practice or object that was perceived as new by an individual or other unit of adoption. The perceived newness of the idea for the individual determined his or her reaction to it. In addition, the newness aspect of innovation may be expressed in terms of knowledge, persuasion, or a decision to adopt. Black, Lockett, Winklhofer, and Ennew (2001) noted that the perceived attribute of an innovation could affect the rate of adoption.

Rogers (1995) also explained that it should not be assumed that the diffusion and adoption of all innovation were necessarily desirable. Some innovation may be desirable for one adopter but undesirable for another potential adopter. This observation has been examined in many previous diffusion research studies. Studying characteristics of online banking adoption in Singapore, Gerrard and Cunningham (2003) found that online banking adopters and non-adopters had different perceptions of adoption characteristics such as social desirability.

One important research questions addressed by traditional diffusion studies was how perceived attributes of an innovation, such as its relative advantage, compatibility, complexity, trialability, and observability affected the rate of adoption (Rogers 1983). Previous studies show that these attributes were important for online banking adoption. Gerrard and Cunningham (2003) show that online banking adopters perceived the online service from the banks to be more convenient, less complex and more compatible. Waite and Harrison (2004) shows that expectations and perceptions of online retail banking information from consumers were high on relative advantage and complexity attributes such as convenience and ease of use. Waite and Harrison (2002) examine expectations of online information provided by bank websites and find that consumers ranked the relative advantage attributes (easy to use and be quick to download) the most important attributes.

Risk and security were considered one of the most important attributes in the adoption selection, and both of them can affect the adoption of online banking. Sathye (1999) examines the adoption of online banking among Australian consumers. This phenomenon was also found in Finland (Pikkarainen, Pikkarainen, Karjaluoto and Pahlila, 2004). White and Nteli (2004) studied internet banking in the UK with the finding that the security of a bank's website is significantly more important than other attributes and that security was still the number one issue in consumer's minds when considering internet banking. These

findings of the risk and security effect on the adoption of online banking were consistent with many previous studies (Rothwell & Gardiner, 1984; O'Connell, 1996; Cooper 1997, Daniel, 1999).

The extent to which reference groups or social influence effects the adoption of online banking is the focus for consumer behavior studies. In the consumer behavior literature reference groups or social influence frequently affect consumer behavior (Fishbein & Ajzen, 1975; Bogozzi, 2000). Rogers (1983) stated that all innovations carry some degree of uncertainty for the individual, who is typically unsure of a new idea's result and thus feels a need for social reinforcement of his or her attitudes toward the new idea. The individual wants to know that his or her thinking is on the right track in the opinion of his or her peers. A study found indicated that reference groups strongly affected the attitude and behavior of consumers toward online banking (Pento, 2002).

DATA AND METHODOLOGY

This study uses both qualitative and quantitative research methods. The qualitative method was used to gain insight into how consumers value the online banking. This technique allowed us to understand the perception of consumers toward internet banking and helped identify some latent variables that might affect the adoption of internet banking. This method helps identify possible factors not captured by previous studies. Because the research interest focused on working people who were more likely to adopt online banking, all the adopters interviewed for this study were working people. Two different focus groups, adopters and non-adopters, were interviewed.

Opinion from Adopters

The literature review suggests consumers acquire products and services because of compatibility. From the focus group interview, most people mentioned compatibility. They believed that online banking fit their lifestyle. The following were the statements they made about compatibility. "Online banking allowed me to do transactions at home", "Online banking was an innovative services and it fitted into my life style", "Using online banking made my life easy".

Ease of use was also a key success factor for online banking. People who were familiar with the internet and websites were more likely to indicate that online banking was not difficult for them. The respondents noted "I could perform my bank transactions on the web easily", "It was easy to conduct banking transactions online", "It was easy to follow the instructions on the web page", "Using internet banking was practical and was not complicated at all". People used online banking because of its convenience. Anytime, anyplace and anywhere have become important consumers. Convenience included saving time, fast, cheap, and availability. The comments from the interview were identified as follows: "It saved my time because I could check my bank account at home anytime", "I could check my bank transactions anytime online", "It was more convenient to do transactions at home than at the bank", "Online banking opened 24 hours".

Third party concern was the main issue for most people who used online bank services. From the consumer point of view, using online banking was with a risk although many banks already used advanced technology to protect their customer's crucial financial information. The comments were: "A third party may be able to access my financial details on the internet"; "My financial data might be passed on to other companies in the bank group"; and "I was afraid that hackers may be able to gain access to my accounts".

Interestingly people who already used online banking expressed concerned about security. The following were their comments: "I was worried about the security of an internet bank"; "I was afraid that someone would get my PIN number", "Although I was afraid of the security, I would take a risk".

Opinion from Non-adopters

Non-adopters had different opinions toward the issue of the difficulty associated with online banking. Most of non-adopters found that using internet banking was complicated although they already had experience using the internet and browsing websites. The following issues were noted: “Internet banking involved complex procedures”, “It was difficult to understand how to do transactions online”, “The web pages were confusing”, “It was difficult to do transactions online. I preferred to go to the bank instead”, “It was confused and frustrated to key many passwords and could not get it done properly”, “I had to spend a lot of effort to access to my account online”.

Most people did not use online banking because of trust. The trust issues included the ability of the bank to protect customer’s information, the technology used by the bank, and word of mouth. Noteworthy comments include: “I was curious about the bank’s ability to protect my financial information”, I did not trust the technology used by the bank”, “I did not need online banking because I did not trust the technology”, “I knew some people who used online banking and whom were stolen the information”.

Both adopters and non-adopters were concerned about the security of online banking. Using online banking was considered risky to some degree. Many non-adopters noted security issues with comments like: “I did not use online banking because of its security”, “Security was the major factor that influenced me not to use online banking”, “Internet banking was not 100% secure”, “I was worried about the security of my financial data”, “Using services at the bank is more secure than using services online”, “It was not safe to use online banking”. Similar to the security issue, most non-adopters were concerned about third party intrusions. They were afraid that a third party might create a risk for them. They felt that using online banking was not safe because a third party could hack their information. Comments included: “Someone might steal my financial data”, “Using online banking was not safe because someone could access my information”, “It was dangerous to use internet banking because I was aware of third party”, “I was worried about third party”, “I was not sure whether someone could access my information”.

Although human contact was not the important issue for adopters, non-adopters had a different opinion about this issue. People who did not use online services preferred to do their bank’s transactions at the bank. Physical contact was a preferable option for non-adopters. Non-adopters noted online banking lacked human contact that must be a norm for a bank’s business. Some comments were “Face to face interaction was a must for bank services”, “I would rather go to the bank because I could get help from the bank’s workers”, “I preferred to go to the bank instead of using online services”, “I could not get help when I used online services”. The second phase of the questionnaire was developed based on opinions toward online banking from both adopters and non-adopters from the qualitative method in the first phase. However, some questions identified from the literature review were used in the questionnaire. Forty-six questions regarding opinions toward online banking were developed. Some demographic questions such as age and income were included to fitting to the local environment. The pilot test for the questionnaire was used to identify any errors and was used to ensure the validity. In the final stage comments and suggestions from respondents were recorded and corrections made.

Sample

Forty-six questions about opinions toward online banking were used in the questionnaire. Because selecting criteria for respondents was crucial for the study, the questionnaires were sent to only working people who were more likely to be target consumers for online banking. The respondents were from both private and government sectors. About four hundred questionnaires were sent to the target samples and three hundred sixty five questionnaires were returned. However, because of some missing values, 330 observations were used for the analysis. Table 1 provides the profile of the respondents and their internet uses.

Table 1: Profile of Respondents and their Internet Uses

	Frequency	Percent
A. Gender		
Female	119	36.06
Male	211	63.93
Total	330	100.0
B. Age		
Below 20 years old	24	7.27
20-25	120	36.36
26-30	76	23.03
31-35	45	23.63
36-40	39	11.81
Above 40	26	7.87
Total	330	100.0
C. Marital Status		
Married	170	51.51
Not married	160	48.48
Total	330	100.0
Education		
High school	95	28.78
College degree	180	54.54
Master degree	49	14.84
Doctoral degree	6	1.81
Total	330	100.0
D. Household Income per Month		
Below 10,000	74	22.42
10,001-20,000	80	24.24
20,001-30,000	76	23.03
30,001-40,000	44	13.33
40,000-50,000	31	9.39
Above 50,000	25	7.57
Total	330	100.0
E. Have Computer at Home		
Yes	322	97.57
No	8	2.42
Total	330	100.0
F. Have Internet at Home		
Yes	314	95.15
No	16	4.84
Total	330	100.0
G. Have Computer at Work		
Yes	283	85.75
No	47	14.25
Total	330	100.0
H. Have Internet at Work		
Yes	277	83.93
No	53	16.06
Total	330	100.0
I. Number of Months Using Internet		
Less than 6 months	11	3.33
6-12 months	20	6.06
1-3 years	24	7.27
4-6 years	85	25.75
7 years or more	190	57.57
Total	330	100.0
J. Number of Hours a Week Using Internet		
Less than 1 hour	28	8.48
1-5 hours	90	27.27
6-10 hours	77	23.33
11-20 hours	67	20.30
21-40 hours	29	8.78
Over 40 hours	39	11.81
Total	330	100.0
K. Internet Access		
Home	105	31.81
Office	71	21.51
Both from home and office	132	40.00
Others (Mobile)	22	6.66
Total	330	100.0

The table shows the frequency and percentage distribution of the profiles of respondents in United Arab Emirate and their internet uses.

Factor Analysis

Cronbach's alpha was used to measure reliability and ensure the degree of consistency among questions. It showed a satisfactory reliability of 0.9095 for all forty six items. To assess the overall significance of

the correlation matrix Bartlett’s test of sphericity was measured. The Bartlett test shows that nonzero correlations existed at the significance level of 0.000. The Kaiser-Meyer-Olkin (KMO) was calculated for sampling adequacy (MSA). The result shows that the set of variables collectively met the necessary threshold of sampling adequacy. Thus, the variables met the fundamental requirements for factor analysis.

Factor analysis was performed and used in the analysis to identify adoption characteristics. Varimax rotation was used as an extraction method. The factor loading of .50 was used as a cut-off point for each item (Hair, Anderson, Tatham, & Black, 1998). Factor analysis suggested seven factors had an eigenvalue greater than 1. Cumulative variance of 49.08 percent was explained by the factors. The seven factors were compatibility, difficulty, security, trust, third party concerns, status and human contact. Table 2 summarizes the results for all the factors and their loadings.

Table 2: Characteristics of the Adoption

	F1	F2	F3	F4	F5	F6	F7
Compatibility							
1. Internet banking saves my time as compared to traditional banking	.574						
2. I like privacy	.609						
3. I am familiar with technology	.594						
4. Internet banking enables transactions to be conducted at home	.743						
5. Internet banking is compatible with my lifestyle	.729						
6. I like sourcing services on the internet	.661						
7. Internet banking provides convenience since it is available 24 hrs	.681						
Difficulty							
1. Internet banking web pages are confusing		.542					
2. Using traditional banking is more effective than using internet banking		.655					
3. Using Internet banking requires a lot of mental effort		.733					
4. Traditional banking is a difficult way to conduct banking transactions		.764					
5. Internet banking is a difficult way to conduct banking transactions		.620					
6. Using Internet banking can be complicated and frustrating		.609					
Security							
1. Internet banking is unsecured			.586				
2. Internet banking offers no receipt on payment			.784				
Trust							
1. Using an Internet banking is financially secure				.732			
2. I trust in the ability of an Internet bank to protect my privacy				.819			
3. I trust in technology an Internet bank is using				.721			
Third Party Concern							
1. Third party may track my bank usage patterns on the internet					.631		
2. Third party may be able to access my financial details on the internet					.732		
Status							
1. I use Internet banking to improve my social status						.688	
2. My decision to adopt Internet banking is influenced by my colleagues						.771	
Human Contact							
1. Absence of human element discourages internet banking usage							.677
2. Face to face interaction is important for bank service							.770
% variance	10.00	9.56	6.84	6.71	6.13	5.60	4.23
Cumulative variance	10.00	19.57	26.41	33.13	39.26	44.86	49.08

The table shows the characteristics of the adoption using Factor Analysis. Using factor analysis, the study found seven factors and it also shows that adopters and non adopters differed in their perception toward compatibility, trust and human contact factors. On these seven factors, the results show statistical significant differences on the adoption between adopters and non-adopters.

Internal Consistency

In the next step, internal consistency was examined by measuring item-to-total correlation (the correlation of the item to the summated scale score). Inter-item correlation within each summated scale score (the correlations among items) were also measured. The rule of thumb was that the scale was reliable when the internal consistency for the item-to-total correlation was above .50 and the inter-item correlation was above .30 (Hair, Anderson, Tatham, & Black, 1998). All correlations of the items to the summated scale scores were above .50 (at the .01 level) and all inter-item correlations within each summated score were above .30 (at the .01 level). Thus, the items used for each construct met the requirements of reliability.

Hypotheses Testing

Hypotheses were developed based on characteristics of online adoption identified by the factor analysis in the previous section. Relationships between characteristics of adoption and online banking were mixed. Many studies show that ease of use (Moutinho & Smith, 2000; Mattila, Karjaluoto & Pento, 2003; Wang, Wang, Lin & Tang, 2003), compatibility (Gurau, 2002), trust (Rotchanakitumnuai & Speece, 2003), reference group influence (Karjaluoto, Mattila & Pento, 2002) and computer experience (Wang, Wang, Lin & Tang, 2003) are positively related to online banking adoption. Some studies found that security (Liao & Cheung, 2002; Rotchanakitumnuai & Speece, 2003), third party concerns, and human contact (Gurau, 2002; Mattila, Karjaluoto & Pento, 2003) were negatively related to online banking adoption. Using Gerrard and Cunningham (2003) as a guideline, the following hypotheses were formulated:

H1: Adopters and non-adopters differed on the basis of their perceptions of Internet banking. Relative to non-adopters, adopters rated Internet banking as being more compatible (*H1a*), more trustworthy (*H1b*), secure (*H1c*) and more in line with status (*H1d*).

H2: Relative to non-adopters, adopters rated Internet banking as being less difficult (*H2a*), they are less concerned about third party issues (*H2b*), and require less human or physical contact (*H2c*). Table 3 provides a summary of hypotheses testing for this study.

Table 3: Summary of Hypotheses Testing

Hypotheses	Results
<i>H1a</i> : As compared to non-adopters, adopters rated Internet banking as being more compatibility	Supported
<i>H1b</i> : As compared to non-adopters, adopters rated Internet banking as being more trust.	Supported
<i>H1c</i> : As compared to non-adopters, adopters rated Internet banking as being more secure.	<i>Not Supported</i>
<i>H1d</i> : As compared to non-adopters, adopters rated Internet banking as being more in line with status	<i>Not Supported</i>
<i>H2a</i> : As compared to non-adopters, adopters rated Internet banking as being less difficult	<i>Not Supported</i>
<i>H2b</i> : As compared to non-adopters, adopters rated Internet banking as being less concerned about third party	<i>Not Supported</i>
<i>H2c</i> : As compared to non-adopters, adopters required less human contact	Supported

The results supported hypotheses 1a, 1b, and 2c. It show that there were no significant differences on four factors (secure, status, difficulty, and third party concern).

RESULTS

Analysis of variance (ANOVA) was used to test the hypotheses. Comparisons of the mean scores for each factor for both adopters and non-adopters of were tested. Table 4 presents the factors with their means and standard deviations.

Table 4: A Comparison of Adopters and Non-adopters on the Characteristics of Adoption

Adoption characteristics	All		Non Adopters		Adopters	
	Mean	std	Mean	Std	Mean	Std
Compatibility	3.74	.77	3.60	.81	3.80	.74
Difficulty	2.99	.80	3.04	.73	2.96	.83
Security	2.87	.90	2.98	.76	2.82	.95
Trust	3.39	.87	3.20	.88	3.49	.85
Third Party Concern	3.04	.78	3.03	.75	3.04	.80
Status	3.18	.81	3.13	.77	3.24	.82
Human Contact	3.30	.91	3.52	.99	3.24	.87

The table shows the comparisons of the means and standard deviation between adopters and non-adopters. *5 indicates strongly agree while **1 indicates strongly disagree on the likert scale.

Table 5 shows statistical significances on three factors between adopters and non-adopters. These factors were compatibility, trust and human contact. The result suggested that adopters felt that using online banking was more compatible with their life style than non-adopters. Also, adopters trusted online banking while non-adopters had a different perception about this issue. Non-adopters believed that human contact was an important attribute when they used a bank’s service, while human contact was not much of an issue among adopters. Among the three factors, compatibility, trust, and human contact, the result indicated that the most significant difference between adopters and non-adopters was in trust with a p value less than .01. Thus, from the statistical analysis, the results supported only hypotheses 1a (compatibility), 1b (trust), and 2c (human contact).

Table 5: Analysis of Variance (ANOVA)

Adoption characteristics		Sum of Square	df	Mean Square	F	Sig.
Compatibility	Between Groups	2.963	1	2.963	.4997	.026*
	Within Groups	172.005	328	.504		
	Total	181.598	329			
Difficulty	Between Groups	.505	1	.505	.785	.376
	Within Groups	211.140	328	.644		
	Total	211.645	329			
Security	Between Groups	1.830	1	1.830	2.260	.134
	Within Groups	265.516	328	.810		
	Total	267.346	329			
Trust	Between Groups	6.098	1	6.098	8.230	.004**
	Within Groups	243.035	328	.741		
	Total	249.133	329			
Third Party Concern	Between Groups	.004	1	.004	.007	.935
	Within Groups	205.194	328	.626		
	Total	205.198	329			
Status	Between Groups	.460	1	.460	.698	.404
	Within Groups	216.109	328	.659		
	Total	216.569	329			
Human Contact	Between Groups	5.587	1	5.587	6.719	.010*
	Within Groups	272.746	328	.832		
	Total	278.333	329			

The table shows the statistical significance using ANOVA analysis. ** indicate significance at p<0.01 and *significant at p<0.05. The ANOVA result shows that there were significant differences at the .01 level on trust.

Table 6 shows comparisons of means among factors between adopters and non-adopters. Each factor includes all items derived from the factor analysis. In general, adopters had high mean scores on compatibility, trust, third party concern and status factors, while non-adopters had high scores on difficulty, security and human contact factors.

IMPLICATIONS

The study found that there were differences between perception toward online banking of adopters and non-adopters on three basis, compatibility, trust and human contact. The implication for these findings are discussed below.

Both consumers and corporate consumers can receive benefits from online banking. The benefits to consumers are convenience, time saving and comfort that will encourage customers to increase their usages of bank services. Banks also benefits from online banking by reducing costs in accessing and using in the banking services (Gurau, 2002). This study shows that compatibility was an important attribute for the adoption of online banking, indicating that consumers in UAE preferred innovations for their lifestyle. Ease of use, convenience and twenty-four hour availability of services from online banking was favorable for UAE consumers.

Many previous studies as well as the current study find that trust is one of the most important attribute for the online banking adoption. Using a qualitative approach for their research in Thailand Rotchanakitumnuai and Speece (2003), show that non-adopters did not trust financial transactions made via online channels. The same study found that non-adopters had a negative attitude toward internet banking. Similar findings regarding trust were identified in this study for UAE non-adopters who perceived online banking as risky. Security, privacy and technology used for internet banking were the main issues of trust from non-adopters perception.

Table 6: Comparisons of the Mean Scores on the Characteristics

	Adopter Mean	Non-adopter Mean
Compatibility		
1. Internet banking saves my time as compared to traditional banking	3.80	3.59
2. I like privacy	4.01	4.00
3. I am familiar with technology	3.85	3.79
4. Internet banking enables transactions to be conducted at home	3.53	3.50
5. Internet banking is compatible with my lifestyle	3.77	3.38
6. I like sourcing services on the internet	3.85	3.43
7. Internet banking provides convenience since it is available 24 hrs	3.84	3.55
Difficulty		
1. Internet banking web pages are confusing	2.94	2.81
2. Using traditional banking is more effective than using internet banking	3.05	3.13
3. Using Internet banking requires a lot of mental effort	2.98	3.04
4. Traditional banking is a difficult way to conduct banking transactions	3.96	3.08
5. Internet banking is a difficult way to conduct banking transactions	2.88	3.09
6. Using Internet banking can be complicated and frustrating	2.98	3.15
Security		
1. Internet banking is unsecured	2.84	3.09
2. Internet banking offers no receipt on payment	2.99	3.13
Trust		
1. Using an Internet banking is financially secure	3.42	3.12
2. I trust in the ability of an Internet bank to protect my privacy	3.49	3.18
3. I trust in technology an Internet bank is using	3.56	3.30
Third Party Concern		
1. Third party may track my bank usage patterns on the internet	3.24	3.12
2. Third party may be able to access my financial details on the internet	3.24	3.18
Status		
1. I use Internet banking to improve my social status	3.36	3.10
2. My decision to adopt Internet banking is influenced by my colleagues	3.17	3.09
Human Contact		
1. Absence of human element discourages internet banking usage	3.16	3.38
2. Face to face interaction is important for bank service	3.30	3.67

The table shows the comparisons of mean scores on of the seven factors.

In service businesses, especially banks, human contact is a major element for consumers. However, there was a contrast on the perception of online banking use between adopters and non-adopters on the human contact issue. Adopters were more likely to require less or no human interaction when they performed transactions with the bank (Gurau, 2002). Conversely a lack of human contact or physical interaction prevented some consumers from using online banking services. It is the main barrier for online adoption found by Mattila, Karjaluoto & Pento (2003). Consumers who prefer face-to-face interaction are more likely not to adopt online banking, limiting the uses of online services. This study supported the findings of previous studies that adopters and non-adopters differ in their perception toward human contact.

In marketing there are two major segments, users and non-users. Different strategies are needed to attract customers from these two segments. For users or existing customers, normally a firm tries to keep its customers and grow its business with existing customers. Repeat buying or using more products and services are the strategy for the user segment. However the company also needs to persuade non-users to use its products or services. Awareness or product trials are sound strategies for the non-user segment.

To increase the number of online users, bank managers need a strategic plan to capture the non-adopter segment. This paper shows that compatibility was the main factor that non-adopters. Non-adopters felt that using online banking was not the way of their life, implying there was no benefit associated with the adoption of online banking.

Compared to adopters, this study indicates that non-adopters perceived fewer benefits than adopters on these following opinions: Internet banking saves my time as compared to traditional banking, Internet banking enables transactions to be conducted at home, Internet banking provides convenience since it is available twenty-four hours, I like privacy, I am familiar with technology, Internet banking is compatible with my lifestyle and I like sourcing services on the internet.

Banks need to communicate with non-adopters. The purpose of the communication to emphasize the benefits of using online banking such as time savings, convenience, anytime and anyplace availability. In addition, banks may use brochures or other media such as TV or radio to demonstrate that using online banking is a new lifestyle. These may include how to do bank transactions online and to source information and services. The instructions and information presented must demonstrate ease of use.

This study found that trust was also the main issue that non-adopters were concerned. Non-adopters had low scores on the following opinions: Using an Internet banking is financially secure, I trust in the ability of an Internet banking to protect my privacy and I trust in technology an Internet banking is using.

Banks should be aware of this issue because customers may not be interested in using services online if they feel insecure. Communication is the key to solve these problems. Banks need to emphasize the importance of security as their first priority task, and they need to build confidence and trust for customers who will use services online. The bank should communicate through the website, brochures or newsletters that using services online is safe. The bank website also informs customers about the bank's online security system. Banks should use the website to alert their customers about any potential frauds.

Another finding from this study was that non-adopters emphasized the importance of human contact when they do transactions at a bank. This finding was consistent with previous studies. In the non-adopter opinion, face-to-face interaction is a must. The following opinions were captured from non-adopters from this study: Absence of a human element discourages internet banking usage, and Face to face interaction is important for banking service.

Banks may need to have online help for customers who need assistance. Talking live with a bank employee online may add a human element to online services. Customers may feel that there is no difference between using services online and at the bank.

CONCLUSION

The purpose of this study was to identify characteristics of online banking adoption in UAE. The first step was to examine UAE consumers perceptions toward online banking. The study included both adopters who already used online banking and non-adopters who did not use online services. Comparisons of characteristics of the adoption of internet banking between adopters and non-adopters were investigated. The sample included 330 respondents including both adopters and non-adopters. The respondents were primarily young, educated, middle income class, and working people who were more likely to be target consumers for online banking.

To ensure the reliability and relevance of the questionnaire, both qualitative and quantitative methods were used. Qualitative methods included focus group interviews. Forty-four questions were developed based on qualitative method and evidence from previous studies. Modification of the questions were made to fit the local environment. The questions were tested through a pilot study. Factor analysis was used to identify the factors of adoption of online banking. The results indicated seven factors as follows: compatibility, difficulty, security, trust, third party concern, status and human contact. Several hypotheses were tested on the identified factors. The focus of the hypotheses were on the comparisons of perceptions of online banking between adopters and non-adopters. Analysis of variance (ANOVA) was used for hypotheses testing.

The primary finding of this study is that adopters and non-adopters differ on their perceptions of online banking adoption on three factors (compatibility, trust and human contact). Adopters had high mean scores on compatibility and trust, while non-adopters had a high mean score on human contact. These results led to statistical significant differences on these three factors, and the findings supported three hypotheses.

The limitation of this study is the sample selection. Because this study used non-random sampling the results may not be generalized for the UAE population. Repeated studies in different regions of UAE would be beneficial. This study did not emphasize demographic variables, which may play a key role for the adoption of internet banking. Observation and investigation of the effect of demographic variables on the adoption of online banking is also an opportunity for future research.

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