Online Banking in Bangladesh
An Empirical Analysis

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Abstract

Advances in electronic banking technology have created novel ways of handling daily banking affairs, especially via the online banking channel. The acceptance of online banking services has been rapid in many parts of the world. In the leading e-banking countries the number of e-banking contracts has exceeded 50 percent. This study investigates into online banking acceptance in the light of the traditional technology acceptance model (TAM), which is leveraged into online environment. DBBL is inclined to investigate into the relation between perceived usefulness (PU), perceived ease of use (PEU), perceived enjoyment (PE), information on online banking, security and privacy and online banking use of DBBL consumers. The research was conducted with a survey sample (n=100). The findings of the study indicate that perceived ease of use, security and privacy and information on online banking on the Website were the main factors influencing online-banking acceptance.

Once the analysis of this study was put into effect, the researchers came across several impeccable findings that need to be dealt with proper care for improving customers' online usage. The findings are as follows: perceived ease of use, security and privacy and online information are significantly positively correlated with online banking uses of the customers. Therefore, DBBL should consider these factors when they look forward to increasing their online banking uses, which in turn would increase the organizational development. The regression outputs suggest that perceived ease of use and security and privacy are the most essential and crucial variables that could explain variation in online banking uses. This is why DBBL should improve and give proper attention to make sure the ease of use of online banking and ensure customers security and privacy.

Introduction

1.0 Background of the study

Since the mid-1990s, there has been a fundamental shift in banking delivery channels towards using self-service channels such as online banking services. During the past few years online banking acceptance has been rapid and currently 55 percent of the private banking customers in Finland have an online banking contract with their bank (**The Finnish Banker's Association, 2003**; **Nordea Oyj, 2003**). In general, Europe has been and still is the leader in online banking

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technology and usage (**Schneider, 2001**). By comparison, at the end of 2000, only about 20 percent of the US banks offered online banking services and only 20 percent of the US private banking customers equipped with an internet connection used online banking services (**Sheshunoff, 2000; Orr, 2001**). By the end of 2002, about 120 largest US banks offered online banking services (**Pyun** *et al.*, **2002**). Although in the recent years this number has grown rapidly, there is some evidence supporting the opposite fact that online banking acceptance is faced with problems (**Robinson, 2000),** for instance, found that half of the people that have tried online banking services will not become active users.

An interesting and notable difference between the US and the European banks is that the US banks are not allowed to have a vast bank branch network covering the whole country (**Pyun** *et al.***, 2002**). Thus, online banking services as well as ATMs have fostered competition among the banks in the USA.

Online banking in this study is defined as an internet portal, through which customers can use different kinds of banking services ranging from bill payment to making investments. Therefore, banks' Websites that offer only information on their pages without possibility to do any transactions are not qualified as online banking services. Dutch-Bangla Bank Ltd (DBBL) is one of the prominent banks among the commercial banks in Bangladesh. Now they want to explore the technological advances to deal with the customers.

1.1 Problem statement

In today's banking environment, the Thai banks are continuously looking for better use of technology by attempting to move low-value transactions away from the branch counter to ATM networks and to the internet and telephone banking (**Chudasri, 2002**). As a consequence, most commercial banks have launched websites to offer online services to the bank customers. They are beginning to use the internet as a new distribution channel in the belief that the future of service lies in electronic banking. This is facilitated by the Thai government's support for the economy by moving it towards electronic commerce as laid out in the Ninth National Economic and Social Development Plan (**Boonruang, 2000**). DBBL is an upcoming bank with huge potential. The bank has recently introduced internet banking in all its branches. The management now wants to decide whether the clients have accepted and understood online banking system or not. Keeping this objective in view, they have decided to go for a relational research on the online banking use of the existing customers (clients) of DBBL.
 In this study, the researchers wish to examine the relationship among Perceived usefulness (PU), Perceived ease of use (PEU), Perceived enjoyment (PE), information on online banking, security and privacy, and online banking use of the DBBL customers.

1.2 Purpose of the study

The purpose of this study is to increase our current understanding of the factors that influence online banking acceptance in the light of the technology acceptance model (TAM) (**Davis** *et al.***, 1989; Mathieson, 1991**; **Davis and Venkatesh, 1996**). More precisely, online banking

acceptance will be studied from the information systems acceptance point of view referring to the idea that customers are using bank's information system (online banking service) directly and hence more knowledge on the factors that affect information systems adoption is needed in order to understand better and to facilitate acceptance.

1.3 Limitations of the study

This paper presents an initial phase of a sustainable research program and as such has limited itself in terms of research design.

Firstly, non-probability sampling method is adopted for research, meaning that statistical inferences regarding the population may not be made accurately. **Secondly,** data collection was confined to only one branch in Dhaka city because of short time span of research. Therefore, a significant number of customers was overlooked whose belief could have been imperative for the study in the process. **Thirdly,** it was time consuming and was difficult to find out spontaneous respondents for the questionnaires. Therefore, the data collection procedure that was followed was often like an interview session. **Again,** there was limited secondary literature available on the topic that restricted the researchers to explore the sector related to it.

2.0 Literature review

Information technology adoption and actual usage of IS (Information System) in the workplace has been a central concern to many researchers and practitioners due to its importance in technology diffusion. In the last two decades, a number of studies have provided some theoretical frameworks for research in the acceptance of information technology and information system (IT/IS) (Ajzen, 1985, 1991; Davis, 1989; Davis *et al*., 1989; Mathieson, 1991; Moore, 1987; Taylor and Todd, 1995). Among them, the technology acceptance model (TAM) is believed to be most robust, parsimonious, and influential in explaining IT/IS adoption behavior (Davis, 1989; Davis *et al*., 1989; Igbaria *et al*., 1995; Mathieson, 1991). TAM was proposed by **Davis (1989).** It introduced two important constructs – perceived usefulness and perceived ease of use.

2.1 Perceived usefulness

Perceived usefulness is defined as the degree to which a person believes that using a particular system would enhance his or her job performance (**Davis, 1989**). As we commented above, the perception that the users will want to perform an activity "because it is perceived to be instrumental in achieving valued outcomes that are distinct from the activity itself, such as improved job performance, pay, or promotions" (**Davis *et al*., 1992**). In applying TAM to student use of the internet, **Anandarajan *et al.* (2000)** found that perceived usefulness was related to time spent on the internet. Perceived usefulness in the TAM model was originally referred to job related productivity, performance, and effectiveness (Davis, 1989). This is an important belief identified as providing diagnostic insight into how user attitude toward using and intention to use are influenced – perceived usefulness has a direct effect on intentions to use over and above its influence via attitude (Davis *et al*., 1989; Davis, 1993; Taylor and Todd, 1995). Incorporating the

concepts used in expectancy theory, Triandis (1980) proposed that an important factor of influencing behavior is the expected consequences of behavior. In the context of user acceptance, the concept of perceived usefulness is, therefore, expanded to include both near-term consequences and long-term consequences. Improvement in productivity, effectiveness, job performance or satisfaction is considered attributes of near-term consequence. Triandis' explanation for near-term consequence is equivalent to the perceived usefulness in TAM. Long-term consequence refers to consequential result in one's career prospects or social status. This definition of long-term consequence reflects the concept of image in Rogers' (1983) diffusion of innovations. Rogers argued that the desire to gain social status is a most important motivation for adopting an innovation. Decomposing usefulness explicitly into near-term and long-term provides more insightful information in understanding user perception of usefulness.

Along this stream of thought, Chau (1996) split the construct of perceived usefulness in his modified TAM model into two parts: perceived near-term usefulness and perceived long-term usefulness. He hypothesized that behavioral intention to use a particular technology is dependent on the above two variables as well as on perceived ease of use. The empirical findings supported his hypothesized relationships between perceived near-term and long-term usefulness, and intention to use. The relationship between perceived near-term and long-term usefulness and attitude to use was not investigated here in order to simplify the model.

2.2 Relationship between perceived usefulness and online banking use

Previous research has found that perceived usefulness has a strong and consistent relationship with computer usage. For example, Davis (1989) found that perceived usefulness was significantly correlated with both self-reported current usage and self-predicted future usage. Similarly, Igbaria *et al*. (1995) found that perceived usefulness has strong direct effects on system usage dimensions. Igbaria *et al*. (1994) and Adams *et al*. (1992) also confirmed that perceived usefulness is positively related to system usage. A probable reason is that individuals will use computers only if they perceive that such usage will help them to achieve the desired task performance.

Perceived usefulness represents the first motivational factor influencing microcomputer usage. The importance of perceived usefulness as an important motivating factor derives from the TRA model, which proposes that perceived usefulness affects microcomputer usage due to reinforcement values of outcomes. Adams *et al.* (1992) and Davis *et al.* (1989) report that user acceptance of computer systems is driven to a large extent by perceived usefulness. In addition, Davis (1989) found that perceived usefulness exhibited a stronger and more consistent relationship with usage than did other variables reported in the literature including various attitudes, satisfaction and perceptions measures. Other studies by Igbaria (1990), Thompson *et al.* (1991) and Robey (1979) suggest that perceived usefulness is positively associated with system usage.

Perceived usefulness influences web usage indirectly through attitude and directly through intent. TAM thus posits that perceived usefulness is influenced by perceived ease of use. A system that is difficult to use is less likely to be perceived as useful; in other words, between two systems offering identical functionality, a user will probably find the one that is easier to use more useful.

Davis (1993) noted that perceived ease of use might actually be a prime causal antecedent of perceived usefulness. Nevertheless, perceived usefulness is not hypothesized as having an impact on perceived ease of use. **Davis (1993)** states that making a system easier to use, all else held constant, and should make the system more useful. The converse does not hold, however. Furthermore, **Davis (1989)** stated his original TAM model where he found a stronger support of perceived ease of use construct with perceived usefulness rather than with intention to use. Again, from a causal perspective, the regression results suggest that ease of use may be an antecedent to usefulness, rather than a parallel, direct determinant of usage. These relationships have been examined and supported by many prior studies (**Davis, 1989, 1993; Davis *et al.*, 1989; Venkatesh and Davis, 1996, 2000**). However, as we commented above, there is a significant body of theoretical and empirical evidence regarding the importance of the role of intrinsic motives in web acceptance and use. Researchers have become increasingly aware of the relevance of the non-extrinsic motives of use such as intrinsically enjoyable experiences (i.e. flow) in understanding attitudes and behaviors. Next, we evaluate the role of flow affecting the web-based behaviors as a highly subjective variable among individuals, and, in turn, explaining and improving the users' experience of being in and returning to the web.

2.3 Perceived ease of use

The perceived ease of use refers to the degree to which an individual believes that using a particular system would be free of physical and mental efforts (**Davis 1989**). In TAM, similar to TRA, an individual's belief determines the attitude toward using the system and, in turn, the attitude develops the intention to use. Finally, this intention influences the decision of actual system usage. Especially, with the proliferation of the internet and e-commerce, researchers have adopted and adjusted TAM to demonstrate the empirical evidences of TAM in the new World Wide Web (WWW) context. Perceived ease of use refers to the degree to which the user expects the use of the system to be user friendly. Since effort is a finite resource that a person may allocate to various activities (Radner and Rothschild, 1975), it implies that all else being equal, an application perceived to be easier to use than another is more likely to be accepted by users. Past research has generally confirmed that perceived ease of use can influence computer usage directly (Davis, 1986; 1989). In general, if a system is easy to use, it requires less effort on the part of the users, thereby increasing the likelihood of adoption and usage. Conversely, systems that are complex or difficult to use are less likely to be adopted since it requires significant effort and interest on the part of the user. In the context of the Internet, the easy to use browsers have largely been responsible for the rapid growth in the number of Internet users.

2.4 Relationship between perceived ease of use and online banking use

Perceived ease of use has an inverse relationship with the perceived complexity of use of the technology, it affects perceived usefulness. **Morris and Dillon (1997)** found that TAM contributes to the prediction of individual usage of software in World Wide Web environment. In a similar study, **Suh and Han (2002)** addressed "trust" to investigate the acceptance of internet banking, and revealed that "trust", together with PU and PEU, is an important predictor of the attitude toward the internet banking system. Ease of use correlated positively with use of the internet for business activity. A more recent investigation suggested that the students' course web

site use tended to be greater when the site was viewed as being useful and easy to use (**Selim, 2003**).

Perceived ease of use is another major determinant of attitude toward use in the TAM model. This internal belief ties to an individual's assessment of the mental effort involved in using a system (Davis, 1989). Perceived usefulness and perceived ease of use are distinct but related constructs. Improvements in perceived ease of use may contribute to improved performance. Since improved performance defines perceived usefulness that is equivalent to near-term usefulness, perceived ease of use would have a direct, positive effect on perceived near-term usefulness. Davis (1989) once proposed to test the generality of the observed usefulness and ease of use tradeoff and to assess the impact of external interventions on these internal behavioral determinants. The empirical research findings are, however, mixed (Davis *et al*., 1989; Davis, 1993; Chau, 1996; Venkatesh, 1999). Ease of use correlated positively with use of the internet for business activity. A more recent investigation suggested that the students' course web site use tended to be greater when the site was viewed as being useful and easy to use (**Selim, 2003**).

 On the other hand, quite a few empirical studies confirmed the effect of ease of use on attitude toward use (Al-Gahtani and King, 1999; Lu and Gustafsen, 1994; Moore and Benbasat, 1991; Venkatesh and Davis, 1996). Venkatesh (2000) believes that for any emerging IT/IS, perceived ease of use is an important determinant of users' intention of acceptance and usage behavior. Even though Chau (1996) excluded the original construct of perceived ease of use in his modified TAM model, he also admitted that in the exploratory state of technology use, ease of use plays an important role. This point was also supported by a recent survey done in Europe. A mail survey by Embedded Solutions among 800 professionals in England in 1999 found ease of use among the top five factors in order of significance for determining use of wireless handheld devices (Clarke, 2000).

2.5 Perceived enjoyment

Davis *et al*. (1992) theorized that perceived enjoyment directly influenced computer-usage intention (i.e. a word processing program). Also, **Igbaria *et al*. (1996)** studied the effect of perceived fun-enjoyment. In this study, support was found for a positive relationship between perceived fun-enjoyment and system usage among managers and professionals who either had a microcomputer on their desk or had easy access to one in the daily performance of their job. Perceived enjoyment may be defined as the extent to which the activity of using the computer is perceived to be enjoyable in its own right, apart from any performance consequences that may be anticipated (Carroll and Thomas, 1988; Deci, 1971; Malone, 1981a). Hence, individuals who experience immediate pleasure and joy from using the computer will be more likely to use it more extensively than others. This notion is supported by Triandis (1971, 1980) who posited that affect – "the feeling of joy, elation, pleasure or depression, disgust, displeasure and hate associated by an individual with a particular act" – has an impact on behavior. Furthermore, research on the role of enjoyment in workplace computing (Webster, 1989; Webster and Martocchio, 1992) and computer games (Holbrook et al., 1984; Malone, 1981, 1981) have suggested the importance of enjoyment on usage intentions and behaviors. In a similar vein, Davis et al. (1992) found that perceived enjoyment has significant effects on intention to use a word processing program. By

extending these results to the context of the Internet, we can therefore assume that perceived enjoyment will have a positive effect on usage activities such as messaging, browsing, downloading and purchasing.

2.6 Relationship between perceived enjoyment and online banking use

Perceived enjoyment associated by individuals with a particular act, could thus have a major impact on an individuals' response to the web, their attitudes and behaviors. However, although regarding previous research perceived enjoyment could occur during goal-directed activities, experiential users are specifically moved by an intrinsic motive (e.g. feeling pleasure and enjoyment from the activity itself) (**Bloch *et al.*, 1986**). The use of microcomputers may also be motivated by intrinsic psychological rewards.

Again, perceived enjoyment and fun represent an intrinsic motivation for microcomputer usage. Individuals who experience pleasure and joy from using the machine and perceive any activity involving use of microcomputers as inherently enjoyable, apart from any anticipated improvement in performance, are likely to use it more extensively than others (Davis, 1992; Malone, 1981). Davis et al. (1989) found that while perceived usefulness emerged as the major determinant of computer acceptance in the workplace, enjoyment had a significant effect beyond perceived usefulness.

Hofstede's (1980) cultural dimension of uncertainty avoidance relates to the extent to which people are threatened by uncertainty or unstructured situations. Since playfulness involves creativity as well as unstructured experimentation with computer-based tasks, it could be argued that customers from moderate to high uncertainty avoidance cultures such as Nigeria would not be motivated to perceive using the computer as enjoyment.

2.7 Amount of information on online banking

The amount of information consumers have about online banking has been identified as a major factor impacting the adoption. According to **Sathye (1999)** while the use of online banking services is fairly new experience to many people, low awareness of online banking is a major factor in causing people not to adopt online banking. In an empirical study of Australian consumers, **Sathye (1999)** found that the consumers were unaware of the possibilities, advantages/disadvantages involved with online banking.

2.8 Security and privacy

The importance of security and privacy to the acceptance of online banking has been noted in many banking studies (**Roboff and Charles, 1998; Sathye, 1999; Hamlet and Strube, 2000; Tan and Teo, 2000; Polatoglu and Ekin, 2001; Black *et al.*, 2002**; **Giglio, 2002; Howcroft *et al.*, 2002**). To be more precise, privacy and security were found to be significant obstacles to the adoption of online banking in Australia (**Sathye, 1999**). **Roboff and Charles (1998)** found that people have a weak understanding of online banking security risks although they are aware of the risks. Furthermore, they found that the consumers often rely that their bank is more concerned about privacy issues and their protect. Finally they argue that although consumers' confidence on

their bank was strong, their confidence in technology was weak (**Howcroft** *et al.***, 2002**). As the amount of products and services offered via the internet grows rapidly, the consumers are more and more concerned about security and privacy issues. Generally speaking, many consumers are unwilling to give private information over the telephone or the internet, for example credit card information (**Hoffman and Novak, 1998**). According to many studies (**Westin and Maurici, 1998**; **Cranor** *et al.***, 1999**) privacy issues have proven important barriers to the use of online services. Basically, the consumers are not willing to accept that they do not have full control over their own behaviour. They want to master their own acts and to know the causes and consequences of their own and others' acts (**Baronas and Louis, 1988**). The users want to control what kind of data is collected, for what purposes, how long data is recorded for, how and for what purposes their data is processed (**Kobsa, 2001; Kobsa, 2002**). Gathering and recording user data without consumers' awareness concerns them (**DePallo, 2000**).

As trust, security, and privacy are multidimensional constructs and need further explanation, in this article we concentrate only on the aspects the consumers are most concerned about. We are interested in the level of confidence in the technology and online banking service provider.

3.0 Research questions

This study investigates the following questions:
1) Is there any significant relationship between perceived usefulness and online banking use in the context of DBBL?
2) Is there any significant relationship between perceived ease of use and online banking use in the context of DBBL?
3) Is there any significant relationship between perceived enjoyment and online banking use in the context of DBBL?
4) Is there any significant relationship between information of online banking and online banking use in the context of DBBL?
5) Is there any significant relationship between security and privacy and online banking use in the context of DBBL?

4.0 Research hypotheses

On the basis of these above stated relationships and findings, we expect to derive the research hypotheses as stated below:
1) There is a significant relationship between perceived usefulness and online banking use in the context of DBBL.
2) There is a significant relationship between perceived ease of use and online banking use in the context of DBBL.
3) There is a significant relationship between perceived enjoyment and online banking use in the context of DBBL.
4) There is a significant relationship between information of online banking and online banking use in context of DBBL.

5) There is a significant relationship between share and privacy and online banking use in context of DBBL.

5.0 Conceptual framework

A conceptual framework providing relationship between perceived usefulness, perceived ease of use, perceived enjoyment, information on online banking, security and privacy and online banking use in the context of DBBL is presented below
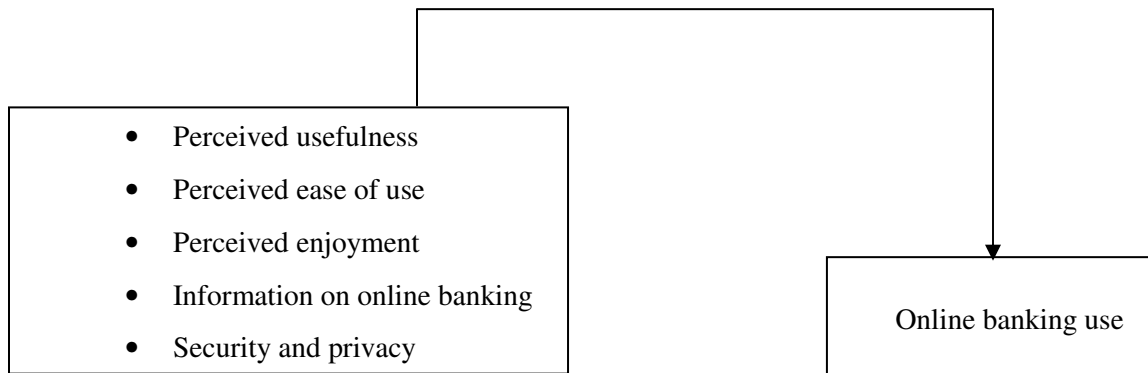

- Perceived usefulness
- Perceived ease of use
- Perceived enjoyment
- Information on online banking
- Security and privacy

Online banking use

Figure1: Conceptual framework

6.0 Research methodology

6.1 Research design

The above shown conceptual framework (Figure 1) shows the relationship among these variables. The independent variables for this study are perceived usefulness, perceived ease of use, perceived enjoyment, information on online banking and security and privacy. The dependent variable is online banking use. The research questions and hypotheses provide sufficient support for the conceptual framework. Hence, the researcher has adopted a co- relational study.

The rationale behind choosing a co- relational study is justified since the focus is on establishing a relationship among the variables. According to Cooper and Schindler (2003), research that studies the relationship between two or more variables is referred to as a co- relational study. The researcher will use structured questionnaires for the survey to collect data from the customers who will play the role of respondents.

6.2 Sampling method

The study was conducted on 100 customers of DBBL who frequently visit the bank during peak hours. Systematic sampling was used by selecting every 9th customer for the survey. The customers will only be the accountholders who was considered in the sampling frame.

6.3 Data collection

The data was collected by providing structured questionnaires. The customers were requested to fill up the questionnaire. The customers were contacted and the questionnaire will be provided to them or personal assistance was provided by interviewing them.

The previous researcher Hsu, Lu & Hsu (2006) adopted an online survey but in this part of the world it is difficult to persuade online users to fill up a questionnaire.

6.4 Data analysis

SPSS (Statistical package for social science) was used for data analysis. In the previous research by Hsu, Lu & Hsu (2006), factor analysis was implemented. But due to lack of technical and statistical knowledge, correlation and regression analysis will be ideal.

Correlation matrix was prepared for assessing the relationship among the variables. In the correlation matrix, significant positive and negative relationships will be taken for interpretation and justifying the hypothesized relationships. The stepwise regression analysis was pursued for investigating to what extent the independent variables explain the dependent variable.

6.5 Measurement instrument and reliability

The questionnaire (shown in Appendix) consisted of questions that were related to background, possible factors affecting acceptance of online banking and use of online banking services. Likert five point scales ranging from "strongly agree" to strongly disagree" were used as a basis of questions. This scale has been used in previous TAM related research (**Igbaria** *et al.***, 1995**; **Teo** *et al.***, 1999**). The questionnaire was developed and tested with a focus group consisting of professionals from the banking sector. The focus group finally verified that the hypotheses we developed might be affective factors explaining online banking acceptance. Based on this information, the questionnaire was modified and finalized.

On the basis of previous studies on computer and information systems acceptance, the use of the information system was chosen to be the indicator for success (**Davis** *et al.*, **1989**; **Davis, 1993; Al-Gahtani, 2001**). The use of online banking services was chosen as the dependent variable in the model. This is in line with other studies, in which actual usage has been selected as the measure of use (**Legris** *et al.*, **2003**).

7.0 Results

7.1 Reliability Coefficient and Descriptive Statistics

The reliability coefficients, means and standard deviations of all the constructs in the current study are displayed in Table 1 The coefficient alphas for the different constructs were computed using the reliability procedure in SPSS. Nunnally (1978) suggested that for early stages of any research the reliability of .50-.60 is sufficient. The reliabilities of all the constructs in this study are found to be above the standard set by Nunnally (1978).

Table 1- Reliability Coefficient and Descriptive Statistics of perceived usefulness, perceived ease of use, perceived enjoyment, security and privacy, online information and online banking use

Scale	Number of Items	Alpha	Mean	Std.Deviation
perceived usefulness	6	.81	3.5450	.63469
perceived ease of use	6	.77	3.4250	.57510
perceived enjoyment	5	.59	3.5720	.54533
Security and privacy	6	.72	3.4733	.58350
banking information	2	.50	3.4600	.74766
online banking use	4	.68	3.4600	.62736

Note: n = 100

Mean scores have been computed by equally weighting the mean scores of all the items. On a five-point scale, the mean score for perceived usefulness is 3.54 (SD = .63) which indicates the perceived usefulness of customers is on the higher side on the scale. However, since the SD is moderately high, there has been a limited difference of opinion among the customers. The mean score for perceived ease of use is 3.42 (SD =. 57) which is higher than average and the perceived ease of use is well appreciated by the customers. The mean score for perceived enjoyment is 3.57 (SD = .54) which is higher than average on the scale. The mean score for security and privacy is 3.47 (SD = .58) which is higher on the scale. The mean scores of online information of DBBL is 3.46 (SD = .74) indicating that customer's perception is moderately high. The mean scores of online banking use of DBBL is 3.46 (SD = .62).

7.2 Correlation analysis

A correlation analysis was conducted on all the variables to explore the relationship among the variables. The bivariate correlation procedure was subject to a two tailed of statistical significance at two different levels: highly significant (p<.01) and significant.

Table2- Correlation Matrix for perceived usefulness, perceived ease of use, perceived enjoyment, security and privacy, online information and online banking use

		Perceived usefulness	Perceived ease of use	Perceived Enjoyment	Security and privacy	Online information	Online Banking use
Perceived usefulness	Pearson Correlation	1	.617(**)	.558(**)	.503(**)	.334(**)	.701(**)
	Sig. (2-tailed)	.	.000	.000	.000	.001	.000
	N	100	100	100	100	100	100
Perceived ease of use	Pearson Correlation	.617(**)	1	.344(**)	.373(**)	.320(**)	.731(**)
	Sig. (2-tailed)	.000	.	.000	.000	.001	.000
	N	100	100	100	100	100	100
Perceived Enjoyment	Pearson Correlation	.558(**)	.344(**)	1	.740(**)	.718(**)	.382(**)

Cont. Table

		Perceived usefulness	Perceived ease of use	Perceived Enjoyment	Security and privacy	Online information	Online Banking use
	Sig. (2-tailed)	.000	.000	.	.000	.000	.000
	N	100	100	100	100	100	100
Security and privacy	Pearson Correlation	.503(**)	.373(**)	.740(**)	1	.576(**)	.396(**)
	Sig. (2-tailed)	.000	.000	.000	.	.000	.000
	N	100	100	100	100	100	100
Online information	Pearson Correlation	.334(**)	.320(**)	.718(**)	.576(**)	1	.398(**)
	Sig. (2-tailed)	.001	.001	.000	.000	.	.000
	N	100	100	100	100	100	100
Online Banking use	Pearson Correlation	.701(**)	.731(**)	.382(**)	.396(**)	.398(**)	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.
	N	100	100	100	100	100	100

Note: *p < .05, **p < .01.

The result of correlation analysis for all the variables is shown in Table 2. It examines the relationship among perceived usefulness, perceived ease of use, perceived enjoyment, security and privacy, online information and online banking use.

The variable, weakly and significantly correlated with online banking use, was perceived usefulness (r =.701, p< .01). Perceived ease of use was found to be significantly and strongly positively correlated with online banking use (r = 731, p< .01). Again, perceived enjoyment was significantly positively related with online banking use (r = 382, p < .01) but the relationship was weak. The variable significantly and moderately positively correlated with security and privacy was online banking use (r = .396, p< .01).. There was significant moderate positive relationship between online information and online banking use (r = .398, p< .01).

7.3 Regression analysis

Both stepwise and entered regression were conducted to asses the relationship between the study variables.

Stepwise regression

A stepwise regression analysis was performed to identify the impact of perceived usefulness, perceived ease of use, perceived enjoyment, security and privacy, online information and online banking use.

Table 3 Stepwise regression on online banking use

Variables	B	SE B	β	R2	ΔR
Step 1				.560	
Security and privacy	.793	.072	.793***		
Step 2				.60	0.04
Security and privacy	.426	.063	.654***		
Online information	.286	.050	.189***		
Step 3				.62	0.02
Security and privacy	.317	.071	.539***		
Online information	.296	.048	.173***		
Perceived ease of use	.250	.086	.180**		

Table 3 depicts that in DBBL security and privacy, online information and perceived ease of use have been significantly related and found to be significant in explaining online banking use. The predictor variables which were statistically significantly related together explained 62 % of the variate in online banking use where security and privacy, online information and perceived ease of use explained about 56% (step 1), 4 %(step 2) and 2 %(step 3) of online banking use respectively.

From the above regression models of stepwise regression, step 3 was found to be the most representative one. Three out of five predictors explained variation in online banking use. Here, β was the highest for security and privacy which was found to be 53.9 % (p<.001) and signifies for an additional 1 unit change in customer participation, there will be .539 unit of change in online banking use, keeping all the other predictors constant.

Perceived ease of use had β of 18 % (p<.001) which signifies for every 1 unit change in perceived ease of use, there will be .180 unit change in online banking use, keeping all the other predictors constant. Then the β of online information was found to be 4 % (p<.01) ..

8.0 Assessment of the hypotheses

Hypothesis 1
There is a significant relationship between perceived usefulness and online banking use in DBBL which was found to be strong and positive (r =.701, p< .01). Therefore, the result we derived from correlation analysis satisfies hypothesis 1.

But, in stepwise regression, perceived usefulness was omitted which results in partial support for hypothesis 1.

Hypothesis 2
There is a significant relationship between perceived ease of use and online banking use in DBBL which was found to be highly positive (r = 731, p< .01). So the result we derived from correlation analysis satisfies hypothesis 2.

The result of stepwise regression indicates that perceived ease of use (p<.01) was found to be statistically significantly related with the dependent variable online banking use in DBBL.

The β was found to be (.04) (p< .01) which indicates additional 1 unit of change in perceived ease of use would cause .04 unit of change in online banking use. Therefore, perceived ease of use has some significant relationship with the change of online banking use.

Therefore, the result of stepwise regression analysis provided support for hypothesis 2.

Hypothesis 3
There is a significant relationship between perceived enjoyment and online banking use in DBBL which was found to be moderately positive (r = 382, p < .01). Therefore, the result we derived from correlation analysis satisfies hypothesis 3.

The result of stepwise regression indicates that it was omitted from the step and it was not statistically significantly related with the dependent variable online banking use in DBBL. Therefore, the result of stepwise regression analysis provided partial support for hypothesis 3.

Hypothesis 4
There is a significant relationship between security and privacy in DBBL which was found to be moderately positive (r = .396, p< .01). Therefore, the result we derived from correlation analysis satisfies hypothesis 4.

The result of stepwise regression indicates that security and privacy (p<.001) was found to be statistically significantly related with the dependent variable online banking use in DBBL.

The β was found to be (.539) (p< .001) which indicates 1 unit of change in security and privacy would cause .539 unit of change in online banking use. Therefore, security and privacy has the best significant relationship with the change of online banking use of the customers. Therefore, the result of stepwise regression analysis provided support for hypothesis 4.

Hypothesis 5
There is a significant relationship between online information and online banking use in DBBL which was found to be moderately positive (r = .398, p< .01). Therefore, the result we derived from correlation analysis satisfies hypothesis 5.

 The result of stepwise regression indicates that online banking information (p<.001) was found to be statistically significantly related with the dependent variable online banking use in DBBL.

The β was found to be (.173) (p< .001) which indicates 1 unit of change in online information would cause .173 unit of change in online banking use. Therefore, online information has a significant relationship with the change of online banking use of the customers. Therefore, the result of stepwise regression analysis provided support for hypothesis 5.

9.0 Significance of the study

This study boasted of certain number of managerial significance. They were as follows:

First, we examined the relationship among the variables at the individual customer level of analysis rather than at the organizational level.

Secondly, this study emphasized the role of employee support in the service management process and identifies its direct and indirect effects that has been a negligible issue as far as attention on efforts in the services was concerned.

10.0 Recommendation

Once the analysis of this study was put into effect, I have come across several impeccable findings that need to be dealt with proper care for improving customers' online usage. The findings are as follows:

Perceived ease of use, security and privacy and online information are significantly positively correlated with online banking uses of the customers. Therefore, DBBL should consider these factors when they are looking forward to increasing their online banking uses, which in turn would increase the organizational development.

The regression outputs suggest that perceived ease of use and security and privacy are the most essential and crucial variables that could explain variation in online banking uses. This is why DBBL should improve and give proper attention to make sure the ease of use of online banking and ensure customers security and privacy.

11.0 Conclusion

With a view to maintaining a standard online banking usage of the customers, the role that online banking uses play is invaluable. These days, the quality of service has been the decisive factor in companies' wealthy position.

Therefore, it is hoped that in near future, DBBL will be able to ensure the online banking use of its customers in better development of the organization and enable itself to hold a lion's share of market in the banking sector.

References

Adams, D.A., Nelson, R.R., Todd, P.A. (1992). Perceived usefulness, ease of use, and usage of information technology: a replication. MIS Quarterly, *16*, 227-47.

Adams, D.A., Nelson, R.R., Todd, P.A. (1992). Perceived usefulness, ease of use, and usage of information technology: a replication. MIS Quarterly, *16*, 227-47.

Agarwal, R., Karahanna, E. (2000). Time flies when you're having fun: cognitive absorption and beliefs about information technology usage, MIS Quarterly, *24* (4), 665-94.

Agarwal, R., Prasad, J. (1998). A conceptual and operational definition of personal innovativeness in the domain of information technology, Information Systems Research, *9*(2), 204-15.

Annual Report **2003 Nordea** Bank Finland Opens new window; **Nordea** Pankki Suomi **Oyj** - .   .   . . Osavuosikatsaus tammi-kesäkuu **2003** opens new window 10 Aug 2010 **...** Harris et al. Macromolécules 2002 35:3772-3774. [+25] [-25]... Jeffrey Pyun et al., "Synthesis of Nanocomposite Organic/Inorganic Hybrid

22 Aug 2008 **...** Altar by Henry Moore (1987) in St. Stephen Walbrook Church (Wren's project). London

Carroll, J.M., Thomas, J.C. (1988), Fun, *SIGCHI Bulletin*, *19*, 21-4.

Cheong J., Park M. (2005). Mobile internet acceptance in Korea. *Internet research*.15 *(2),* 125-140

Cronbach LJ. (1951).Coefficient alpha and the internal structure of tests. Psychometrika; 16, 294–334

Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology, *MIS Quarterly*, *13* (3), 319-40.

Davis, F.D., Bagozzi, R.P., Warshaw, P.R. (1989). User acceptance of computer technology: a comparison of two theoretical models. *Management Science,35(8),982-1003*

Davis, F.D., Bagozzi, R.P., Warshaw, P.R. (1992). Extrinsic and intrinsic motivation to user computer in the work place. Journals of Applied Social Psychology, 22(14), 1111-32

Dommeyer,CJ.,Gross B.L. (2003) What consumers know and what they do: an investigation of consumer knowledge, awareness and use of privacy protection strategy.Jouenal of interactive marketing,17(2),34-51

Fishbein,M..,Ajzen,I.(1975), Belief, Attitude,Intention,Behavior: An Introduction to Theory and Research, Addsion-Wesley,Reading,MA.

Hendrick,(C.(1988) Role and gender in relationship.Handbook of Personal Relationship,Jhon wiley & Sons,Newyork,NY.

Hepatotoxicity of psychotropic drugs. Khaled Selim,; Neil Kaplowitz M.D

Haffman, D.I., Novak T.P. (1996). Marketing in hypermedia computer-mediated environments: conceptual foundation. Journal of Marketing, 60,50-68.

Sheshunoff Information Services, Inc. Publicly Traded Banking Database. (c) 2000 American Banker (Part 2 of 2) EPS, Fully Diluted Rank% Change 30-Sep-00 **...**

Sakoolkan Boonruang, Andrew Greenwell, and M. G. Moharam. Applied Optics, Vol. 45, Issue 22, pp. ... Microwave Theory Tech. 48, 553-561 (2000).

Seong Soo Yoon, Ji Hyun Kim, Shin Ho Rhee, Kyo Suh, Han Joong Kim. .... Kyo Suh. 2002.Development of Rural Information Support System with Classification of ...

Suh, B. & Han, I. 2002. Effect of trust on customer acceptance of Internet Banking. Electronic Commerce Research and Applications, 1, 247-263

Showing results for Al-*Qahtani* & king 1999. Search instead for Al-*Gahtani* & king 1999

Demonstrator job ENT Deprtment. 1999. King Saud University ..... Sumeet M Anand, Khalid Al-Qahtani, Michael P Hier, Martin J Black

Free article about 'Sheshunoff Information closes production plant. ... Austin Business Journal articles > October 2000 articles.

22 Feb 2006 **...** Rines, J. E. B., Boonruang, P. and Theriot, E. C. (2000), Chaetoceros phuketensissp. nov. (Bacillariophyceae): a new species from the **...**

11 Fourth, the programs are easy to use, a factor that is important in technology adoption (Mathieson 1991).

Fishbein and Ajzen (1980); Taylor and Todd, 1995 and Taylor and Todd, 1996;   Riemenschneider et ....al. (2002).

20 Jul 2010**...** et al. 6420459, Flame-retarding thermosetting compositions, July, 2002, Hrold **...** Pyun et al., "Composition, Method Of Making The Same,

Pyun et al., 2002. Packet loss resilience for video stream over the internet. IEEE Transactions on Comsumer Electronics. v48 i2. Rane et al., 2002.

Pages Result About nangi chudasi ladki 0on Petrochemicaloiljobs.com. **...** logging, cementing, ...filtration unit for clients from **2002**.

12 Mar 2010 ... Chudasi Jawani ||||| Explosion Seduction the Series. ... Powered by phpBB © 2000, 2002, 2005, 2007 phpBB Group wow guide.

Cdr.Boonruang Kerdaroondej RTN. Ph.D. **...** Oct 2000 – Oct 2004 Chief of Verifying & Analysis Department, Chief of Vocational Training Center,

Taylor, S., & Todd, P. (1995). An integrated model of waste management behavior: A test of household recycling and composting intentions.

Triandis (1980) suggests that habit can have both a direct and interactive effect on behavior.

Triandis (1980) referred to feelings of joy, pleasure, disgust, or displeasure associated with a particu- lar act.

Rogers, E. M. (1983). Diffusion of innovations (3rd ed.). New York: Free Press. Rogers, E. M. (1986). Communication technology:

Thompson et al. E.. Annals of Internal Medicine. ...... J. 1979a. a review of studies of the relation between perceived vulnerability to HIV

Radner and Rothschild (1975) present a model in which a manager is in charge c, ... In terms of the Radner and Rothschild (1975) framework

27 Lu, H.P. and Gustafson, D.H. (1994). 'An empirical study of perceived usefulness and ease of use on computerized support system use over time'.

This study uses Moore and Benbasat's (1991) perceived characteristics of .... Moore and Benbasat (1991) identify eight PCI factors that influence the ...

Specifically we focus on the relative advantage and compatibility scales ... developed by Moore and Benbasat (1991). second, using relative advantage

10 Mar 2000 **...** A critique of that document is in Clarke (2000b). ... Clarke R. (2000b) 'Submission to the Commonwealth Attorney-General

The requirements of a Privacy-sensitive PKI are listed in Clarke (1998).

Asphalt laying woman. 1959. Still life with Water-malon. 1981. Asphalt laying woman. 1961. Leningrad street. 1958. Construction of Hydro-electric power .

Malon was in Lugano from January 1876 to October 1876. ... dopo la comune: I casi italiano e spagnolo (Milan: Franco Angeli Editore, 1981), esp. 199-229. ...

Michael G. Morris, Andrew Dillon: How User Perceptions Influence Software Use. **...** The New .   *Review of Hypermedia and Multimedia 3*: 91-106 (**1997**)

Nunnally JC. Psychometric theory. New York: McGraw-Gill; 1978.

Venkatesh, V. and Davis, F.D. "A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies," *Management Science* (46:2),