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A Theoretical Model for Internet Banking: Beyond Perceived Usefulness and Ease of Use

Shaza W. Ezzi
King Abdulaziz University, Jeddah, Saudi Arabia
Shazaezzi466@gmail.com

ABSTRACT

As with other types of electronic banking like ATM's, telephone banking, and electronic funds transfer, Internet banking like has evolved from consumers' needs to have greater access to banking services beyond most banks teller-staffed, normal operating hours. Additionally, Internet banking has grown rapidly from the recent and dramatic increases in e-commerce. Internet banking (IB) continues to dominate the landscape of electronic banking as consumers continue to use IB to complete routine banking transactions in addition to conducting on-line sales and purchasing. This study presents a theoretical model designed to help researchers and practitioners better understand the acceptance and adoption of Internet Banking. The proposed model may be particularly useful in developing nations where consumers are reluctant to use Internet Banking even when the services are available. However, a review of several studies that have investigated consumers' acceptance of Internet banking services from a variety of perspectives have not reached a clear consensus of the factors that contribute to overall consumer acceptance and adoption. Following the seminal information systems research of Davis, Bagozzi and Warshaw's [1] Technology Acceptance Model, the purpose in this paper is to introduce a theoretical model for understanding the acceptance and adoption of Internet banking services. Following an extensive review of the literature, the proposed Internet Banking Model is specified and introduced. The paper concludes with discussions of the managerial implications and avenues for future research.

Keywords: Internet banking, technology acceptance model (TAM), consumer behavior

INTRODUCTION

Spawned by the rapid development of Internet commerce, consumers' needs for Internet banking solutions have grown in recent years. The banking and financial sectors have adapted to meet these consumer needs by encouraging customers to use an array of electronic banking services. Consumers' banking needs have changed completely over the past three decades [2]. Thirty years ago, when a consumer needed money for purchases or to transact banking, he/she visited a secure deposit institution (bank) during weekday "banking hours," probably stood in line for a while, and had a human teller facilitate the transactions. But by the late1970's, banks launched networks of automated teller machines (ATM's) across their countries of operation, and around the globe [3; 4]. This was followed by telephone banking, cable television banking in the 1980s, and the progress of personal computer (PC) banking in the late 1990s [5; 6]. Visiting the local branch bank for routine business became the exception for many consumers, and some banks actually discouraged costly face-to-face interaction with bank tellers.

Though it first appeared in the 1980's, the growth of on-line banking did not make major inroads in financial centers across the globe until the late the 1990's and beyond when access to Internet browsers became more widespread [7]. The increase in Internet and electronic

commerce has stimulated the banking and e-business sectors to encourage customers to make purchases and conduct on-line banking [8; 9]. In the late 1990s, when electronic commerce (the buying and selling of goods and services through Internet browsers) began a rapid growth in volume and the number of transactions increased geometrically the use of Internet banking (IB) grew to meet the needs of both businesses and consumers alike [10; 11]. IB has created new ways of handling banking transactions for e-commerce related transactions especially facilitating the growth of online shopping [12]. The changes are driven in large part due to the aspect of virtual time (real time) where buyers and sellers conduct huge increases in Internet commerce unimpeded by typical brick and mortar operating hour constraints. As such, IB services grew from the necessity to satisfy consumers' real time purchasing wants and commercial entities striving to meet consumer needs.

However, a recent review of some academic and professional literature indicates a pattern of somewhat confusing usage with respect to many topical synonyms: on-line banking: electronic banking, Internet banking, e-banking, and PC banking. Electronic banking is the use of electronic means (e.g. ATM's, bank cards, Internet banking, telephone banking, and point-of-sale terminals) to transfer funds or complete financial transactions directly from one account to another, rather than by check or cash [13]. Ayadi [14] suggests that within the academic literature, and as used in this paper, electronic banking is an umbrella concept defined by distant, real-time access to banking services using any electronic means — Internet banking, on-line banking, PC banking and even using ATM's. A true precursor to Internet banking, PC banking describes banking between a computer user and an internal banking network. Internet banking (IB), a true synonym of on-line banking, is a term used to describe distant banking conducted using an Internet-based browser.

IB is best viewed as a self-service delivery channel that allows bank customers to access financial services and information necessary to complete routine, as well as some non-routine banking needs in the convenience of real time through web browser technology [15-17]. The self-service nature of IB could translate to lower-average transactions costs and provide real-time accessibility when compared to fixed-hours, normal teller-supported banking services. In managerial terms, Internet banking has the ability to support banks' mission of increasing services and building customer satisfaction through providing *virtual time* products and services, while realising the potential of reduced operating and administrative costs [18; 19]. Today consumers in most of the developed countries of North and South America, Europe, Australia, and in many parts of Asia can transact customer banking needs via PCs, and mobile devices such as hand-held tablets and Smart-phones.

Though banks offering IB service provide their customers many benefits, such as the convenience to execute banking transactions 24 hours a day or to save time, [16; 20] large groups of consumers who still refuse to use Internet banking services [21; 16; 11]. Consumer's use of IB requires acceptance of the technology [5; 22], which can be complicated because it involves changing behavior patterns. In addition, Internet technology in general and IB services in particular present technological learning challenges that could be difficult for some especially in developing countries where consumers may also be economically challenged [23]. Understanding the predicators of consumer's attitudes toward and adoption of Internet banking is paramount. Research arguments suggest that attitudes have a strong, direct and positive effect on consumers' feelings about and intentions to actually use new technologies or systems [see 24- 26]. Further, though this kind of research has been conducted rather extensively in developed countries, there remains a lack of understanding about consumers' behavior toward the adoption and intention to use IB services in developing countries [27].

Moreover, from a managerial point understanding the reasons for customers' resistance to accept the technology and adopt IB service could be useful for bank managers who are charged with formulating strategies aimed at increasing online banking use. The preceding research seems to indicate the need for a model to test hypotheses and answer research questions relative to consumers' attitudes toward and preferences for adopting IB services. The purpose of the current paper is to present a model for understanding consumers' acceptance and adoption of Internet banking services.

REVIEW OF THE LITERATURE

Brief History of Electronic Banking

Automated banking:

In 1939, Turkish-born, Luther Simjian patented the first automatic teller machine (ATM) the Bankmatic or Bankograph. However it was not until 1960 that 20 of Simjian's ATMs were introduced in New York, USA for what is now Citicorp. The venture was not commercially successful as Simjian wrote "The only people using the machines were prostitutes and gamblers who wanted to avoid face-to-face dealings with bank tellers." [Automated Teller Machines, 28, p.1]. Further, Simjian explained there were not enough of them [ATMs] to make the machines a worthwhile investment for the bank [29]. However, many researchers suggest that James Goodfellow (patent 1966) of Scotland holds the earliest commercially successful introduction for a modern ATM using a photostatic process with radioactive inked vouchers [29]. In 1969, John D White, an engineer with Docutel, is often credited with installing the first free-standing, magnetic-card reader ATM at Chemical Bank of New York [3; 4]. In 1978, during 5 days of a blizzard of snow that paralyzed New York City, Citi Bank saw a huge payoff on its $100 million ATM investment a year earlier, using the famous ad campaign slogan "The Citi Never Sleeps" [30].

- In recent years ATM installations have seen particularly rapid growth. For the period 1983 to 1995 ATM growth was 9.3 percent per year but the annual growth rate accelerated to 15.5 percent from 1996 to 2002. The rate of acceleration was due largely to the placement of ATMs in non-bank locations. Off-premise ATMs which accounted for about 26 percent in 1994, now account for 60 percent of total U.S. ATMs [4].

- By the early 2000's hundreds of thousands of ATM's were in operation worldwide signaling that the transition from fixed-hours banking at physical locations with live tellers to automated teller machines capable of a variety of banking uses was completed. However, ATM's were only the beginning of automated banking; the next revolution in banking would be driven by electronic commerce.

From ATM's to Smart Phone applications:

While ATM's answered the needs for "real time" 24/7 banking services like cash withdrawals, making deposits, and to some degree processing bill payments, a new level of commerce was emerging that would forever change to landscape of automated banking.

- English entrepreneur Michael Aldrich invented online shopping in 1979 using modified TV technology with a simple menu-driven human–computer interface that represented a new, universally-applicable, participative communication medium - the first since the invention of the telephone (Aldrich, 1982). During the 1980's, Aldrich designed, manufactured, sold, and maintained and supported many online shopping systems, using videotex technology [31]. The videotex systems that were installed mostly by large corporations in the UK also provided voice response and handprint processing. Videotex technology pre-dated the IBM PC, and Microsoft MS-DOS, and the Internet and the World Wide Web [32]. Later called e-commerce, Aldrich's definition of the new mass

communications medium was fundamentally different from the traditional in that it was "participative" (interactive and many-to-many), making the videotex technology a precursor to social networking on the Internet 25 years later [33]. Aldrich launched videotex technology as Redifon's Office Revolution, which allowed consumers and suppliers through on-line corporate systems to complete business transactions electronically in real-time [32]. However, the first World Wide Web server and browser, created by Tim Berners-Lee in 1990, did not open for commercial and consumer use until 1991 [34]. Thereafter, a subsequent flurry of technological Internet-based browser innovations emerged in 1994: the opening of an online pizza shop by Pizza Hut [32], Netscape's SSL v2 encryption standard for secure data transfer, and Intershop's first online shopping system, and the advent of online banking. Amazon.com launched its online shopping site in 1995 and eBay was also introduced in 1995 [34].

- From the late 1990's up to the present there has been a tremendous growth rate of on-line consumer commerce. Measured in terms of gross merchandise volume (GMV), Amazon and E-bay racked up 2013 sales volumes of 87.8 and 67.7 $billion, respectively. However, Chinese Internet giant Alibaba had 2013 GMV of 171 $billion, topping both US firms [35]. Thus, the concept of Internet banking has grown to fill the needs of consumers worldwide as they fulfill desires to conduct on-line commerce. As on-line consumer commerce has grown so has the level of technology to support increased sales and purchase activity, and access to banking operations to complete transactions. Today, users of on-line purchasing routinely use Smart phones and tablets in addition to PC's and laptop computers [36; 37]. Across the globe, as the rate of e-Business commerce transactions continues to escalate phenomenally, this continued growth is driving the need for mobile banking channels at a rapid rate. [38]. Additionally, the ubiquitous use of Smart phones and tablets has made consumers more familiar with mobile applications for banking services. The use of mobile banking is progressing from simple functionality like account balances and ATM locators to completing banking transactions like bill payments and account transfers. Mobile banking continues to gather momentum across the globe in developed countries, and developing countries due to the rising use of mobile technologies, e.g. tablets and Smart phones, and the constantly improving supply of mobile banking applications from banks, particularly in North America, Europe, and Australasia. [39] Channel strategy leaders at B2B and B2C firms are at the forefront of developing mobile technologies, where 94% of e-Business managers surveyed are either responsible for or involved in the planning of a mobile strategy [38]. Clearly the above trends coupled with increasing ATM operations costs, fewer transactions per ATM and the increased global Internet access, financial institution managers are faced with developing new offerings to meet consumers' needs in new markets for Internet-based services such as Internet banking.

Internet Banking

As stated earlier, electronic banking emerged from two main sources: consumers' desires to have greater banking access; and huge growth in various forms of electronic commerce — conducting banking and business transactions through electronic networks, without using written checks and other paper instruments. Internet banking, a form of electronic banking, focuses on providing banking products and services through web-based on-line browsers and bank portals. IB represents the newest and most rapidly growing banking technology in countries with developed economies. Many researchers have investigated the phenomenon of IB technology in these countries— such as USA, Canada, [40-42], Europe, United Kingdom, Finland [43-49], Australia [50-52]. However, IB is in its enfant stage in countries with

developing economies like Nigeria [53; 54]; Malaysia (55-57]; Egypt [58; 59]; Jordan [19]; in Gulf countries such as Oman [60]; UAE [61; 62]; Bahrain [63]; and Saudi Arabia [64-66].

Findings of some previous research in the developing nations has revealed that the success of electronic banking in general and Internet banking in particular may hinge not only on the amount or availability of banking services or government support but also by customers' acceptance of Internet technology [66; 25; 67]. Potential IB users may not use the system even when available, due to poor perceptions of IB and/or their levels of trust and confidence in using technology to solve their banking needs [68; 66]. In addition, users' of IB services need to have Internet access and necessary hardware — a PC or tablet or Smart phone. Further, computer self-efficacy is important model factor because low self-efficacy might hinder adoption of IB in economically disadvantaged areas of developing countries where computer skills and access to the Internet are suboptimal [55; 69].

Based on the previous discussion, and adopting from the well-researched Technology Acceptance Model [e.g. 1; 70; 15; 16; 64; 59; and ETAL], the purpose of this paper is to introduce a new model to provide a fuller understanding of the factors influencing the acceptance of Internet banking among individual users. This necessarily means expanding the model to include a greater number of factors in order to test hypotheses and answer research questions about consumers' perceptions, attitudes toward, and their intentions to use Internet banking services. The new model may be especially useful in evaluating consumers' preferences in developing countries, where IB services are still considered innovations. Thus, the objectives of this research can be summarized in the following 2 statements:

- To identify the key factors from extant research that may be influential in affecting the consumers' decisions to accept IB technology and adopt (use) IB services.
- To propose a research model, which includes identified factors that can be used to test and analyze hypotheses about customers' attitudes and behavioral intentions toward using IB services.

THE NEW MODEL: CONSUMER INTERNET BANKING MODEL (CIBM)

Technology Acceptance Model (TAM)

First introduced by Davis, Bagozzi and Warshaw [1], the technology acceptance model (TAM) was soon after tested by Davis [70]. Davis' [70] purpose was to explain the effect of how users' perceptions of system characteristics influence acceptance of information systems (IS) applications. TAM has roots and was adapted from the Theory of Reasoned Action (TRA) [71] to the field of IS. TAM suggests, 'Intention to use IS' is determined by 'Perceived Usefulness' of the system which influences 'Attitude.' 'Perceived usefulness' is suggested to be directly impacted by 'perceived ease of use.' 'Attitude' has been defined by Davis [72, p. 476] as "the degree of evaluative affect that an individual associates with using the target system in his/her job." In discussing TAM, Davis [70] clarified that an individual's attitude is a kind of perceived behavioral control, where a high degree of perceived control will influence behavior intention, resulting actual behavior [73].

Perceived Usefulness

TAM is for the most part based on two user perceptions — 'Perceived usefulness' (PU) and 'Perceived ease of use' (PEOU). In constructing one's attitude toward a certain type of information system(s) both perceptions are deemed relevant. A positive 'attitude' directly affects an individual's intention to use the information system(s) (IS), adoption. Thus, 'Attitude' toward using IS is the fundamental predictor of the user's acceptance behavior — intention to

use. Davis [70 p. 320] defined PU as "the degree to which a person believes that using a particular system would enhance his/her job performance". Accordingly, PU is a major factor that affects attitude toward acceptance of IS. For example, Yusoff, Muhammad, Pasah and Robert [74] found a positive relationship between students' usage of a new e-library and their perceived usefulness of the system. When applied to similar information systems, this finding could suggest that when students feel that a particular information system (IS) is perceived as useful, their resulting level of usage will be higher. In addition, Suki & Suki [75] examined the relationships between perceived usefulness (PU) and subscribers' attitudes toward and intentions to use 3G mobile services in Malaysia. These researchers found PU to have a positive effect on attitude toward and behavior intention to use 3G mobile services.

Perceived Ease of Use

Unlike PU, which is a measure of value, PEOU measures "perceived ease of use," where Davis [70, p.320] states "the degree to which a person believes that using a particular system would be free of effort". Thus, IS an application that is perceived to be easier to use than another is more likely to be accepted by users, as it will positively influence 'attitude' and subsequently 'intention to use.'

Many studies [e.g. 76-80] have demonstrated the validity of the TAM across a wide range of IS settings. The factors contributing to the acceptance and adoption (intent to use) IS are likely to vary across levels of technology, target users, and type of IS context [81]. TAM, with the previously discussed two main factors (PU and PEOU) which are considered to be fundamental to determining the acceptance (attitude toward) and adoption (intent to use) of types of IS may not fully explain the consumers' behaviour to adopt IB. The reason for this is because IB services are quite different than IS, and the characteristics of potential adopters are likely to vary more. IB enables customers from widely different backgrounds to perform banking transactions and financial activities in virtual space (real-time). Therefore, this study will present a new model (see Figure 1, CIBM) based on the original TAM model of [1] but adapted to reflect additional characteristics which may influence attitudes toward and adoption of IB services.

Consumer Internet Banking Model (CIBM) Factors

Perceived Privacy and Security

As with many applications where consumers are required to divulge personal information such as social security numbers, bank account numbers, account information like balances, and identifying transactions people of all walks of life tend to be concerned for their privacy and security. Researchers investigating Internet banking (IB) services have consciously noted the importance perceived privacy and security [82; 67; 83-85; 52; 86]. Individuals fear providing sensitive information such as financial details on the Internet, as a result of security and privacy defects and distrust of dealing less scrupulous service providers [51]. With respect to the attitude toward and adoption of IB many experts have acknowledged consumers' concerns regarding security, privacy, and trust [e.g. 87; 16; 7; 88-90]. However, in some instances users who have become experienced in the safeguards employed by many banks and commercial intuitions often cite feelings of security in conducting transactions on the Web as a major factor that reduces their concerns about the effective use of the Internet for making online purchases and other transactions [91].

Given the of paramount importance of security and privacy of paramount importance and because of paramount importance these factors may vary from person to person, using the factors of 'Perceived security' and 'Perceived privacy,' this study will use these factors to

determine how variation in these perceptions may influence individuals' attitudes toward and intentions to use IB services.

Trust

While IB services have been available for some time in the developed nations, the concept is relatively new as a banking delivery service in the developing countries [5; 92]. Trust, which can emanate from factors like perceived privacy and security, is another major factor in terms of electronic channels that may influence consumers' attitudes toward and intentions to engage in banking and financial services provided over the Internet.

Mayer et al., [93] and McKnight and Chervany [94] defined trust as the customers' confidence in quality and reliability of the services offered by an organization. Additionally, lack of trust has been recognized as one of the major obstacles to the adoption and use of IB [95; 21; 96; 67]. This means trust is needed more when customers process more sensitive personal information including financial information. Therefore, the establishment of trust and confidence plays a major role when providing financial services. Suh and Hn [81] found trust to have almost the same impact on attitude as 'perceived usefulness' (PU), which they found in their research to be the strongest variable of attitude prediction. The findings of Suh and Hn study showed that trust to be a very significant determinant of 'Intention to Use' IB in South Korea. Eriksson, Kerem, and Nilsson [24] made a similar conclusion while studying the meaning of trust with Estonian private customers. In addition, Reid and Levy [97] suggested that trust is a significant factor impacting both 'perceived usefulness' and 'perceived ease-of-use' of IB in Jamaica. Thus, 'Trust,' 'Perceived Security' and 'Perceived Privacy' are proposed as key factors in the new model of IB usage as presented in the current study.

Computer Self Efficacy

Self-Efficacy theory (SET) proposed by Bandura [98] is based on cognitive learning theory, and used to explain psychological changes achieved by different treatments. In the SET model, Bandura distinguished between two main concepts related to the self-efficacy — efficacy expectations and response outcome expectations. According to Bandura [98, p. 193] efficacy expectation is "the conviction that one can successfully execute the behavior required to produce the outcome." Further, Bandura [98, p. 193] described outcome expectancy as a "person's estimate that a given behavior will lead to certain outcomes." From the SET perspective, self-efficacy is the most important precondition for behavioral change — people would change their behaviour based on their confidence in their ability to perform that behavior, and the behaviour leading to a successful outcome.

In addition, Garlin and McGuiggan [99] argued that self-efficacy is more applicable to predict consumer behavior toward products or services that involve complex decision-making. For example, the use of new technology or a new product, instances where successful consumption would require skillful performance. In relation to the adoption of new technology, many studies found that computer self-efficacy has a strong influence on the behavioral intention to use Internet banking system that has been considered as new technology especially in developing countries [91; 100].

Lin [101] found that customer's desires to have the necessary skills and computer knowledge of the Internet channel, convenience, experience, perceived accessibility and self-efficacy are key factors that influence online consumer behavior. With respect to the importance of computer skills (self-efficacy), Chung and Paynter [102] found that lack of prior skill using Internet banking inhibited consumer adoption and usage. The findings showed that consumers who did not use the Internet channel did not feel a need to use it. Additionally, Karjaluoto,

Mattila, and Pento [49] and Lassar, Manolis, and Lassar [41], found that prior computer experience; prior technology experience, personal banking experience, user reference group, and computer attitudes can form consumer self-efficacy and strongly affect 'Attitude' and 'Intention to use' IB. These researchers' findings indicated that the intensity of Internet usage positively influences individuals' adoption of IB. This suggests that the more experienced in using computers and the Internet, the more likely consumers are to use IB.

While examining the impact of 'Computer Self Efficacy' on the behavioral intentions, Ariff, Min, Zakuan and Ishak [55] found high computer self-efficacy to be a positive factor in determining individuals' intentions to use the IB system. Other studies have also demonstrated that 'Computer Self-Efficacy' has strong influence on use of IB systems through their effect on 'perceived ease of use' and 'perceived usefulness' (e.g. 103-105]. Luarn and Lin [106] found that 'perceived ease of use' moderated perceived self-efficacy through observing both direct and indirect effects on intentions to adopt and use IB.

Responsiveness

Responsiveness, which is a measure of feedback time and accuracy of response, was identified as another factor influential to consumer's attitude and intention to use online services [107-110]. Responsiveness relates to the speed and effectiveness of the bank's web portal to provide information necessary for the customer to complete transactions in a timely manner. In other words, fast transaction completion and quick response to complaints have been described as responsiveness to serving customers' needs [111]. 'Responsiveness' is another factor in addition to the 'Self-Efficacy' that is related to cognitive learning theory which suggests that human behavior is based on how humans think about certain activities, events or other mental stimuli. The mental processes include a variety of activities ranging from gathering information, learning about the information, and on to problem solving using the information [112]. The point is that humans make choices that seem to make the most sense to them. Thus, much of decision making can be viewed as cognitive learning in that such decisions essentially involve finding courses of action to solve a myriad of consumption problems [112]. Accordingly, if a customer intended to use IB system and was unable to complete the transaction due to not being provided with a fast reliable response, he/she will perceive the effectiveness negatively, and this could be reason enough to reject further use of IB services. Further, responsiveness could be related to 'perceived usefulness' (PU) as customers who find the workings of Internet banking services to be responsive to processing their needs quickly and resolving their issues timely and efficiently are likely to see value in IB, or 'perceived usefulness' in on-line banking systems as well. Thus, in the CIBM (see Figure 1) a link between 'responsiveness' and 'perceived usefulness' is depicted.

In order to promote customers' positive perceptions of self-efficacy for using IB, bank managers should encourage customers to use the IB technology by providing friendly websites. Additionally, providing quick responses to customers' requests and frequently asked questions, and offering personalized assistance as needed to complete transactions in a timely manner would do much to enhance customers' self-efficacy, and lead potentially to positive IB service experiences. Because of the relationship between 'responsiveness' and 'perceived usefulness,' a factor which influences both 'attitude' toward and 'intention to use' IB services, 'responsiveness' is added as an important factor to the CIBM, see Figure 1.

Demographics

In much of the consumer behaviour research from various disciplines, including banking, the effects of customer demographic characteristics — such as age, level of education level, gender

and income level have investigated. With respect to research examining consumers' attitudes toward different banking technologies and individual adoption of new technology, some studies have investigated the effects of the customers' demographic characteristics such as age, education level, gender, and income level [e.g. 27; 113; 16; 66]. Alashban and Burney [112], for example, in their study about customer adoption of tele-banking technology in Saudi Arabia, found that, the level of income and education of Saudi consumer play a vital role in their adoption and usage of tele-banking technology. Similarly, Al-Somali, Gholami and Clegg [66] found that the level of education has a significant influence on Saudi consumers to use online banking. Age was found as an important factor that influence the usage of IB, Akinci, Aksoy, and Atilgan [114] found that mid-aged Turkey consumers are more likely than younger or older consumers to use Internet banking. In relation to the gender differences, Lichtenstin and Williamson [51] found that Male perceptions of IB convenience is associated with high levels of accessibility and Internet self-efficacy, while for women, 24/7 home access may be important. Based on this background, this study also will consider 'Age', 'Education', 'Gender', and 'Income' to have influence on the consumer attitude toward the intention to use the IB service. Thus, in the present study which is investigating consumers' attitudes toward different, sometimes new services, and how individuals adopt new technologies demographic factors may offer some explanations.

From the discussion above and based on the review of the literature surrounding the factors which could predict consumers' attitudes toward and their intentions to use IB services, the current study introduces a new model adapted in part from the TAM [1], the Consumer Internet Banking Model (CIBM) shown in Figure 1. This new model suggests 'Computer self-efficacy' will have a direct influence on the 'Perceived Ease of Use' factor. Also, that 'Trust', 'Perceived Privacy', 'Perceived Security' and 'Responsiveness' will influence consumers' attitudes toward IB services. Further, that 'Responsiveness' will also influence consumers' 'Perceived Usefulness.' In addition, the demographic factors, 'Age', 'Education', 'Gender' and 'Income' are expected to influence consumers' 'attitudes', which in turn influences their 'intentions to use' IB services. The following figure presents the proposed Consumer Internet Banking Model (CIBM)

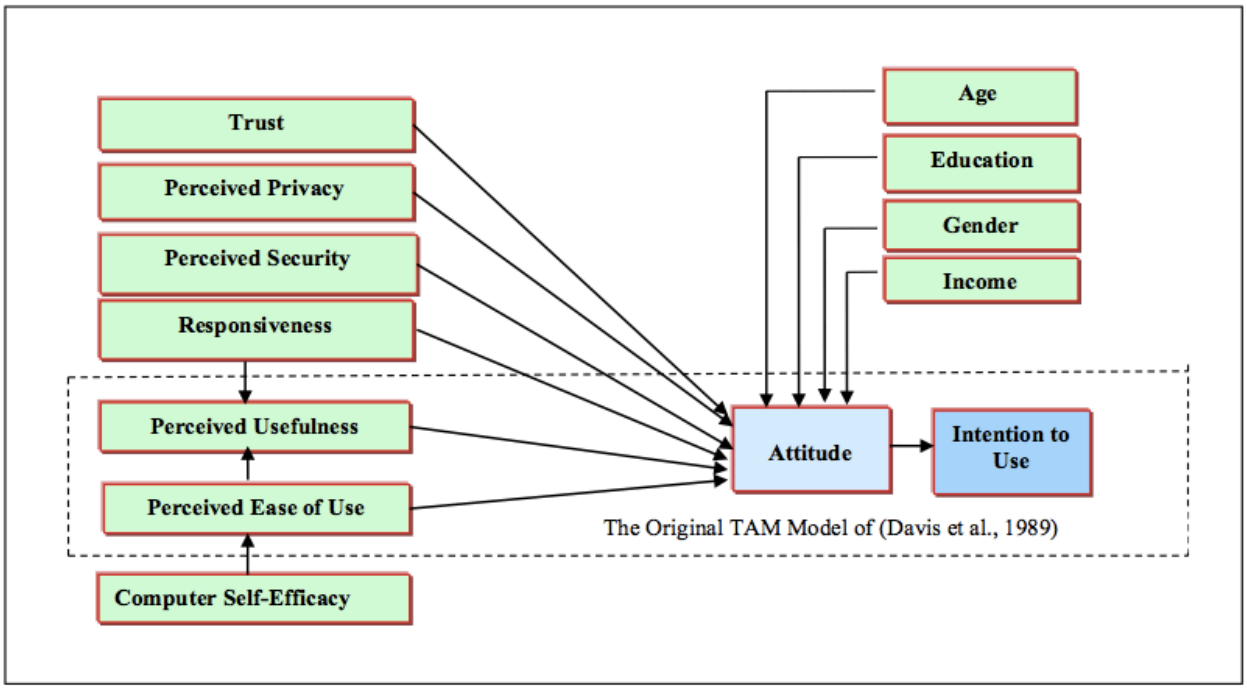

Figure 1: Consumer Internet Banking Model (CIBM)

MANAGERIAL IMPLICATIONS AND FUTURE RESEARCH

Managerial Implications

The goal of this paper was to review the extant literature to identify factors that can be used to test customers' attitudes toward and intentions to use Internet banking (IB) services. In the process a new research model is proposed which may help researchers and others predict how consumers' decide to adopt IB. In order to stay abreast of the recent market changes in the banking industry, banks must compete with others to attract customers; realizing customers are looking for the best banking services available. Rising trends in E-commerce should assure a steady flow of customers who will demand access to Internet and mobile banking services. Increasing the number of satisfied the IB users, is one way for bank managers to succeed. To attract and maintain customers, banks will have to invest in technologies and make key improvements that further the goals of mobile and Internet banking. Some changes will come in terms of hardware and software designed to improve channel accessibility. The hardware could involve banks increasing the effectiveness of on-line portals. In addition, banks and other business institutions will need to develop consumer-friendly software applications that customize mobile banking service channels stressing ease of use and perceived usefulness. Other improvements will be needed in the form of communications to assuage consumers who are reluctant to use IB services due to a lack of trust and because of suboptimal perceptions relative to privacy and security. While the prevalence of the use of mobile technology will certainly fuel the growth in E-commerce, and drive the need for mobile applications for Internet banking, consumers will have options from which to pick IB service providers. Thus, it is incumbent upon bank managers to bundle their firm's Internet and mobile banking services in ways to maximize addressing consumer wants and needs. Thus, understanding the key factors that influence consumers' attitudes toward and intentions to use IB systems is essential. This may be especially challenging for bank managers in the developing countries, where Internet and mobile banking services are still considered new innovations.

Future Research

As introduced in the present study, Consumer Internet Banking Model (CIBM) lays open many areas for research centered on understanding the behavioral motivations for consumers to adopt Internet banking services. Because of the personal importance of financial issues and disclosure, future research should investigate how trust, privacy and security factors affect consumers' attitudes toward and intentions to use IB services. Additionally, studies in the developing countries could focus on these factors influence computer self-efficacy and perceived responsiveness, factors which could be determinants of ease of use and perceived usefulness. Further, researchers could investigate contrasts of the CIBM factors in terms of developed versus developing nations. On a more regional scale, some researchers could explore differences between populations of consumers in similar regions of developed or developing countries. Future research will be needed in order to test hypotheses based on the factors identified in the CIBM with respect to specific issues regarding the acceptance of and intention to use the e-banking services overall and Internet banking in particular. Also, in future studies, the CIBM could be used to analyze consumer comparisons between different banking services, such as user preferences for Internet banking versus mobile banking. In summary, the framework of the Consumer Internet Banking Model (CIBM) presented has opened the research landscape to a wide range of opportunities.

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