Internet Banking Adoption in Jordan: A Behavioral Approach

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Abstract

Day after day, many enterprises make use of the Internet and cyber space to reach out to customers everywhere at any time. The banking industry, like other industries, is using the Internet channel to protect its current position against other virtual players who may provide more convenience and lower priced services. Internet banking (IB) is meant to provide 24/7 service for banking customers, yet the electronic channel comes with challenges as well as gains for both bankers and customers. This study aims to identify the important determinants of online behavior, particularly with respect to Internet banking and the technology acceptance research. The different technology acceptance models are discussed thoroughly in the literature review to explain the stages and the foundations that led to the formation of the Unified Theory of Acceptance and Use of Technology (UTAUT). This work aims at investigating the viability of the aggregated technology acceptance model, the UTAUT, in a non-industrial country (Jordan). The research also permits an extension to the model by addressing the impact of web presence on the online behavior, namely website quality perceptions. The contribution of this work lies in several areas of implementation and empirical analyses. This research extended the UTAUT model to account for the online behavior. The extension comprised decomposing the technical sources dimension of the facilitating condition construct of the UTAUT and replacing it with the website design quality structure variable. The current work validates the UTAUT measures as developed by its authors, in addition to supporting the interrelationships among the key constructs in technology acceptance research. The proposed extension to the UTAUT model attempts to capture the impact of website quality perceptions on key constructs, namely performance expectance, effort expectancy and usage behavior. A restrict research methodology was used to test both original and developed hypotheses, the results show that website quality structure does impact usage behavior indirectly, through performance expectancy and effort expectancy. Discussion, conclusion, and further research area are provided based on the results of the research.

Keywords: internet banking adoption, Unified Theory of Acceptance and Use of Technology (UTAUT), online banking, Jordan

1. Introduction

Day after day, many enterprises make use of the Internet and cyber space to reach out to customers everywhere at any time. The banking industry, like other industries, is using the Internet channel to protect its current position against other virtual players who may provide more convenience and lower priced services. Internet banking (IB) is meant to provide 24/7 service for banking customers, yet the electronic channel comes with challenges as well as gains for both bankers and customers. So it is important to understand what are the important determinants of online behavior in respect of Internet banking and the technology acceptance models?

Acceptance of technology and consumer adoption is a topic that has been widely researched in the past three decades. Previous studies have contributed to establishing a variety of theories. Researchers in psychology, sociology, and information technology have all contributed various models to explain the behavior of acceptance, adoption, and usage of technologies. A significant body of research has its foundation in the Technology Acceptance Model (TAM), a model originally conceived by Fred Davis in 1986. TAM is an intention based model derived from the Theory of Reasoned Action (TRA), but tailored to meet the broad needs of information technology research (Davis et al., 1989).TAM has evolved through the years and many researchers have tested the addition of new variables to the model in an attempt to increase its explanatory power. Venkatesh along with Davis and other researchers (2003) integrated TAM with seven other dominant models in the field of technology

acceptance and introduced the Unified Theory of Acceptance and Use of Technology (UTAUT). The eight models were: Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980), Theory of Planned Behavior (TPB) (Ajzen, 1985) and its extension the Decomposed Theory of Planned Behavior (DTPB) (Taylor & Todd, 1995), Technology Acceptance Model (TAM) (Davis, 1986), a combined TAM and DTPB version, the Diffusion of Innovation Theory (DOI) (Rogers, 1983; 2003), the Social Cognitive Theory (SCT) (Bandura, 1986).The Motivational Model (Ryan & Deci, 2000), and the Model of PC utilization (MPCU) (Thompson et al., 1991).

Although the notion of technology acceptance is universal, the models established to explain such behavior were developed and tested in the industrial world. There is a certain reservation in terms of how viable such models would be when applied to non-industrial countries. Therefore, it is important to examine technology acceptance models in non-industrial countries (such as Jordan), especially in this era of advanced technology.

Jordan is a useful example of a non-industrial country for this study for reasons pertaining to recent efforts at the government level to turn the Kingdom into an Internet and IT hub and encourage foreign investments in high technology development projects. In this context, numerous IT training projects, workshops, and conferences have been employed to promote IT in all sectors since the year 2000. High quality service and information access has been secured to the public at home, work and schools following a deal signed between the government and Microsoft Corporation aimed at bringing the head of state's IT vision to life. Appropriate infrastructure has been provided to improve electronic trade and information technology in the Kingdom (European Commission report, 2000).Jordan is a small country with few natural resources; its economy depends mainly on services; Jordan has played and continues to play a pivotal role in the Middle East. The country's significance results partly from its strategic location at the crossroads of what most Christians, Jews and Muslims call the Holy Land (BBC, 2008). Its political and economic stability and good business infrastructure have made it a gateway for companies to consider as they look to do business in the Middle East and Africa (Susser, 2000).

2. Literature Review

While there is a rich literature on online banking and financial services and their adoption, the researchers are only interested in those studies that investigated consumers' usage or adoption of Internet Banking (IB) within a framework consistent with the afore mentioned eight behavioral models, which were integrated into the UTAUT.

2.1 Theory of Reasoned Action (TRA)

The earliest model used to explain technology acceptance was developed in the social psychology field. The work can be traced back to the period 1918-1970 when scientists were trying to explain individuals' behavior through the impact of attitude. Their contributions ended with contradictory explanations regarding behavior and attitude. Attitude has either a direct or an indirect effect on behavior and attitude is either multidimensional factor or a unidimensional one. The work of Fishbein & Ajzen is a result of a research program that began in the late 1950s. Their work dealt with prediction of behavior in laboratory and applied settings. Their approach served as integration of diverse theories and lines of research about attitudes, for example learning theories, expectancy-value theories, balance theory, theory of cognitive dissonance, and theories of attribution. They aimed at developing a theory that could predict, explain, and influence human behavior (Ajzen & Fishbein, 1980). They introduced the theory of reasoned action in 1967, but over the years the theory has been refined, developed, and tested.

TRA is based on the assumption that individuals are rational and will make systematic use of the information available to them to take action. Individuals consider the implications of their actions before they decide to engage or not engage in a given behavior (Ajzen & Fishbein, 1980). The theory looks at behavioral intentions, rather than attitude, as the main predictor of behavior. An individual's intention to perform behavior is a combination of *Attitude towards performance of the behavior, and Subjective norms*. However, Ajzen (1985) noted that the theory was limited by what they call correspondence. In order for the theory to predict specific behavior, attitude and intention must agree on action, target, context, time frame and specificity (Sheppared et al., 1988).The greatest limitation of the theory stems from the assumption that behavior is under volitional control. That is, the theory only applies to behavior that is consciously thought out beforehand. Irrational decisions, habitual actions or any behavior that is not consciously considered cannot be explained by this theory.

2.2 Theory of Planned Behavior (TPB)

Because of the limitations of the theory of reasoned action, Ajzen (1985) proposed the theory of planned behavior. The theory of planned behavior is an extension of the theory of reasoned action, and as in the original theory of reasoned action, the central factor of the theory of planned behavior is the individual's intention to perform a given behavior. The theory of planned behavior addresses the issue of behaviors that occur without a

person's volitional control. In fact, the theory of planned behavior differs from the theory of reasoned action in its addition of the perceived behavioral control (PBC) component that accounts for situations where an individual has less than complete control over the behavior. This can vary across situations and actions (Ajzen, 1991).

Nevertheless, for accurate prediction, several conditions have to be met. First, the measures of intention and PBC must correspond to or be compatible with the behavior that is to be predicted, and the specified context must be the same as that in which the behavior of interest is to occur. The second condition for accurate behavioral prediction is that intentions and PBC must remain stable in the interval between their assessment and observation of behavior, as intervening events may produce changes in intentions or perception of behavioral control. The third requirement for predictive validity has to do with accuracy of behavioral control; prediction of behavior from perceived behavioral control should improve to the extent that perception of behavioral control realistically reflects actual control (Ajzen, 1991). In order to explain and predict behavior, TPB deals with the antecedents of attitude, subjective norms and perceived behavioral control. The theory of planned behavior postulates that behavior is a function of salient beliefs relevant to that behavior. These salient beliefs are considered as the prevailing determinants of a person's intentions and actions.

Models such as TRA and TPB are not without criticism. For example, Eagly & Chaiken (1993) acknowledged evidence of other variables such as habit, perceived moral obligation and self-identity, that may predict intentions and behavior in the context of TRA model, yet the TPB did not address such variables. The TPB as a replacement for the volitional control limitation of TRA suggests behaviors are deliberate and planned, yet the TPB does not show how do people plan and how does planning mechanism relate to TPB.

Taylor & Todd (1995) criticized TRA and TPB stating that the models require individuals to be motivated to perform a certain behavior; this assumption may be problematic when studying consumer adoption behavior, in addition to the assumption of an identical belief structure among respondents when it comes to performing a behavior. Furthermore, TPB introduced one variable (PBC) as an answer to all non-controllable elements of the behavior. Beliefs behind the (PBC) were aggregated to create a measure for it. This aggregation has been criticized for not identifying specific factors that might predict behavior and for the biases it may create. Taylor & Todd (1995) introduce decomposed TPB to provide a better understanding of behavior. Next theory provides a discussion of their work.

2.3 Decomposed Theory of Planned Behavior (DTPB)

The decomposition of TPB is discussed through two types of effort presented by two separate studies. Genuine contribution is evident in the work presented by Taylor &Todd (1995) and more recently by Pavlou & Fygenson (2006).

2.3.1 Taylor & Todd Work on DTPB

As an extension to theory of planned behavior, which is an improvement on the theory of reasoned action, Taylor & Todd (1995) proposed decomposing the constructs of TPB into detailed components. The decomposed theory of planned behavior (DTPB) expands the TPB by including constructs from the diffusions of innovations (DOI) perspective (Rogers, 1983). In their study, Taylor & Todd (1995) aimed at examining the appropriateness of TRA, TPB and DTPB as models to predict consumer behavior. Using the structural equation model, the results proved that pure TRA and TPB are capable of predicting behavior, but the decomposed version is better at explaining this behavior. They recommend the use of DTPB as a tool to affect certain aspects of behavior that managers might need to change through systems design and marketing implementation strategies. In their decomposition effort, Taylor & Todd depended on previous research that established a consistent relation among the three characteristics of innovation (relative advantage, compatibility, and complexity) and adoption decisions in general and IT usage specifically (Moore & Benbasat, 1993, cited in Taylor & Todd, 1995). For analysis purposes, they combined the relative advantage and compatibility based on similar treatments found in other research (e.g., Moore & Benbasat, 1991). A study of a crossover effect between decomposed beliefs was carried as well and the results showed that relative advantage and compatibility affected PBC, normative influences affected attitude, and facilitating conditions influenced subjective norms.

2.3.2 Pavlou & Fygenson Work on DTPB

Pavlou & Fygenson (2006) extended Ajzens' theory of planned behavior to predict the process of e-commerce adoption. Their methodology followed a longitudinal study with a group of e-shoppers. In addition, TPB was used to predict two inter-related behaviors of e-commerce adoption (getting information and purchasing). In their decomposition of TPB, they used the formative structure to decompose PBC which implies that PBC is viewed

as a second–order factor formed by the first-order dimensions of self-efficacy (SE) and controllability. In this order a parsimonious view of PBC is maintained.

A different set of antecedents were used to explain the main constructs in TPB; Trust was proposed as an attitudinal belief for the behaviors of getting information and purchasing. Trust was also placed as a control belief for both behaviors, while product -value was added only in the purchasing model as an attitudinal belief. TAM beliefs of perceived usefulness (PU) and perceived ease of use (PEOU) were placed as attitudinal beliefs while PEOU was hypothesized to effect controllability and self-efficacy for both behaviors. PBC was decomposed, as mentioned before, for controllability and self-efficacy. The controllability set of antecedents for the two behaviors were different; for getting information, the set included (download delay, time resources and website navigation). For the purchasing behaviors, the set included (monetary resources, product diagnosticity and information protection). As for self-efficacy, both behaviors included a belief around getting information skills and purchasing skills. The model also included control variables of past experience, habit, web vendor reputation, product price and demographics.

While Taloy's & Todd extension approach compared DTPB and its origins to TAM to assess the explaining power of the three models, Pavlou & Fygenson approach adds a new dimension to TPB as a measuring tool for two related behaviors. Although the two studies had different approaches, both still considered powerful extensions of TPB.

2.4 Technology Acceptance Model (TAM)

In 1986, Davis introduced the technology acceptance model which described an individuals' acceptance of information technology. The goal of TAM is to provide an explanation of the determinants of computer acceptance among users. TAM replaced TRA's attitude beliefs with the two technology acceptance measures: Perceived usefulness (PU) referring to the degree to which a person believes that using a particular system would enhance his/her job performance; and Perceived ease of use (PEOU) referring to the degree to which a person believes that using a particular system would be effort free (Davis, 1989). TAM does not include TRA's subjective norms (SN) as a determinant of Behavioral Intentions (BI).TAM posits that PU is influenced by PEOU because, other things being equal, the easier a technology to use, the more useful it can be. Consistent with TRA, TAM suggests that the effect of external variables on intentions is mediated by PEOU and PU. TAM has evolved beyond its original form during the past years. According to a meta-analysis carried out by Lee et al. (2003), TAM evolvement (1986-2003) can be divided into four periods: introduction, validation, extension and elaboration. Many TAM-based researches can be found in different fields and over different times. Still, TAM faced a major limitation in the measurement of the independent variable, usage or behavior, through relying on self-reporting by respondents and assuming that self-reported usage reflects actual usage, as well as the type of respondents or the sample choice (Legris et al. 2003) and the inconsistency in the relationship among constructs (Sun & Zhang, 2006). This led to the extension of the Technology Acceptance Model, known as (TAM2). Venkatesh and Davis (2000) extended the original TAM model to explain perceived usefulness and usage intentions in terms of social influence and cognitive instrumental processes. The extension included additional key determinants of perceived usefulness and usage intention constructs which are meant to explain the changes in technology acceptance over time as individuals gain experience in using the targeted technology. The new model incorporates additional theoretical constructs covering social influence processes (subjective norm, voluntariness and image) and cognitive instrumental processes (job relevance, output quality, result demonstrability and perceived ease of use).The new model was tested and widely adopted by other disciplines. However, research has shown that the influence of some factors on intention to use IS varies at different stages in the IS implementation process. This turned the eyes to an older theory known as the Diffusion of innovations Theory.

2.5 Diffusion of Innovations Theory (DOI)

Rogers (1983) introduced his diffusion of innovations theory (DOI) stating the different stages of adoption, and correspondingly the different types of adopters according to the different characteristics of the technology (innovation). Based on this theory, diffusion is a process in which an innovation is communicated through certain channels over time among members of a social system. An innovation is an idea, practice or object that is perceived as new by an individual or other unit of adoption (the words innovation and technology are used as synonyms). Diffusion is also a special type of communication concerned with the spread of messages that are perceived as new ideas. Communication is a process in which participants create and share information with one another in order to reach a mutual understanding. New ideas possess a degree of uncertainty and thus are perceived as risky. An individual can reduce such uncertainty by obtaining information. Hence, information is a

difference in matter-energy that affects uncertainty in a situation where a choice exists among a set of alternatives. From the previous definition of diffusion, four elements of diffusion can be detected: (1) innovation (2) communication channels (3) time and (4) social system (Rogers, 2003).The purpose of the diffusion of innovations theory is "to provide individuals from any discipline interested in the diffusion of an innovation with a conceptual paradigm for understanding the process of diffusion and social change" (Brown, 1999). Diffusion of innovations theory provides well developed concepts and a large body of empirical results applicable to the study of technology evaluation, adoption and implementation, as well as tools, both quantitative and qualitative, for assessing the likely rate of diffusion of a technology. Additionally, DOI identifies numerous factors that facilitate or hinder technology adoption and implementation (Fichman, 1992). These factors include the innovation–decision process, attributions of the innovation and innovators' characteristics. It also helps in predicting the likelihood rate of adoption of an innovation. Nevertheless, it has been argued that the theory does not provide evidence on how attitude evolves into accept / reject decisions, and how innovation characteristics fit into this process (Karahanna et al., 1999; Chen et al., 2002). Although TAM and DOI originated in different disciplines, the two theories have obvious similarities. As reported in studies everywhere, the relative advantage attribute of innovations is often considered to be the PU construct in TAM, and the complexity attribute is similar to PEOU concept in TAM. This suggests that TAM and DOI reconfirm and often complement each other (Chen et al., 2002). Yet other theories found in DOI a way to implement changes or make new ideas acceptable among individuals. This new way is known as the social cognitive theory (SCT).

2.6 The Social Cognitive Theory (SCT)

The social cognitive theory (SCT) stemmed from the social learning theory (SLT) which was launched in 1941 by Miller and Dollard's publication of Social Learning and Imitation when they introduced the principle of learning through "Models". Currently, subsets of theories based on SLT with emphasis on cognitive variables assert that human cognation mediates between stimulus and response, placing individual control over behavioral responses to stimuli. Although there are several versions of SLT, they all share three basic tenets: Response consequence such as reward / punishment influences an individual's behavior, observational learning (vicarious learning) whereby humans can learn by observing others, in addition to learning by personally participating in an act, and entification: individuals likely to model behavior observed by others they identify with or are emotionally attached to. Social cognitive theory encompasses a large set of factors that operate as regulators and motivators of established cognitive, social, and behavioral skills. Among the key factors are: Reciprocal Determinism, Vicarious Capacity, Forethought, Self-Regulatory Capability, and Self-Reflective Capability. SCT is considered a valid model of individual behavior, widely accepted and empirically validated (Igbaria & Iivari, 1995; Compeau & Higgins, 1995). Of specific interest is the role of self-efficacy judgment in inducing or deterring certain behaviors. This factor has been researched along with other factors in the IS / IT domain to explain individuals' acceptance or adoption of various technologies. Based on this theory, a new promising model evolved, this new model make ties with Davis' technology acceptance model and self-determination theory (SDT) and known as the motivational model.

2.7 The Motivational Model

Motivation research has yielded many theories. Self-Determination Theory (SDT) by Deci & Ryan (1985) posits that self-determination is a human quality that involves the experience of choice, having choices and making choices. Deci et al. (1991) differentiate between the tenet of SDT and other theories claiming that SDT distinguishes between self-determined and controlled types of intentional regulation. In 2000, Vallerand expanded Self-Determination Theory into the Hierarchical Model of Motivation. This model defined motivation along the same SDT continuum, but posited that motivation operated at three levels: global (personal) level, the contextual (domain) level, and the situational (state) level. The motivation model posits that motivation must be considered from multidimensional perspectives (IM = Intrinsic Motivation, EM = Extrinsic Motivation, AM = Amotivation).

Many researchers found that the motivational model can be linked to technology acceptance. For instant, Igbaria et al. (1996) integrated and examined the relative influence of the three motivators, perceived usefulness, perceived playfulness or fun and social pressures, on an individual's decisions to use microcomputers. Their conceptual model was based on the motivational model; the findings confirmed previous results regarding the key motivating role of PU in promoting technology usage. The results also indicated the incentive properties of anticipated enjoyment and normative social pressures in stimulating usage. Additionally, results indicated moderate to strong support for the proposed linkages among the model variables. In a successive study, Venkatsh, Speier, and Moris (2002), reanalyzed the data from both earlier studies (Venkatesh, 1999; Venkatesh & Speier, 1999) to develop an integrated model of technology acceptance. The integration aimed at extending

the knowledge by integrating core concepts of technology acceptance and motivational models and examining them longitudinally; understanding the role of pre-training and training interventions, "user acceptance enablers" (UAEs) as termed by authors, in the context of the integrated model; and, empirically testing the new model to compare its explanatory power with existing models. The authors, building on previous research, built their research model based on the motivational model but the IS domain has yet another theory to explain technology acceptance: the Model of PC Utilization.

2.8 The Model of PC Utilization (MPCU)

Inspired by the lack of consensus or synthesis among different disciplines in describing the relationship of attitude, values, and other acquired behavioral dispositions to act or behave, Triandis (1979) presented a framework to describe how behavior occurs and what variables induce human behavior. The framework included variables that are general and abstract enough to be relevant to any investigation in any culture. According to Triandis, behavior has many actual consequences and only some of them are perceived by the individual. He distinguished between perceived consequences and actual consequences. The first are those anticipated by the individual and the second are those that occur after the behavior has taken place and are interpreted by the individual as desirable or undesirable depending on the total evaluation of the situation. Based on Triandis' framework, Thompson et al. (1991) conducted an initial test of a model of personal computer (PC) utilization using a subset of Triandis' framework. In their model, the authors implied that utilization of a PC would be influenced by individuals' feelings (affect) toward using PCs, social norms, habits, the expected consequences, and the facilitating conditions. They examined the direct effects of social factors, affect, perceived consequences, and facilitating conditions on behavior. Later in 1994 Thompson et al. extended their work of 1991 by considering the role of experience with personal computer usage. Experience was modeled with direct, indirect, and moderating influences. The limitations acknowledged in the previous study were rectified in the latter, and gradually other researchers examined the model and modified it when needed. The Model of PC Utilization is only a subset of Triandis' model of value, attitude and behavior, that is, behavior is determined by peoples' beliefs, affect toward the object (cognitive and affective components of attitude), by what people think they should do (social norms), and by the expected consequences of the behavior. Facilitating conditions and habit are also good predictors of behavior. The MPCU is best used to understand and explain computer usage behavior in a voluntary environment.

2.9 The Unified Theory of Acceptance and Use of Technology (UTAUT)

Venkatesh et al. (2003) reviewed and compared the eight dominant models that have been used to explain technology acceptance behavior. These models included TRA, TPB, TAM, combined TAM - TPB, DOI, SCT, MM, and MPCU (discussed above). Upon review, the authors reported five limitations of prior model tests and comparisons and addressed them in their work. They concluded: the technologies studied were simple and individual-oriented as opposed to complex and sophisticated organizational technology, most participants in these studies were students except for few studies, time of measurement was general and in most studies well after acceptance or rejection of the usage decisions so individuals' reactions were retrospective, the nature of measurement was in general cross-sectional, and most of the studies were conducted in voluntary usage contexts making it rather difficult to generalize results to mandatory settings. The authors then empirically compared the eight models in longitudinal field studies conducted in four different organizations among individuals that were introduced to a new technology in the workplace. The measurement was carried out at three different points in time: post training, one month after implementation and three months after implementation; while actual usage behavior was measured over the six-month post-training period. The data was divided into two samples for the eight models according to the mandatory and voluntary settings. The authors also studied the effect of some moderating variables that have been reported in previous researches to effect the usage decision. These were experience, voluntariness, age, and gender. Results showed that, with exception to MM and SCT, the predictive validity of the models increased after including the moderators. The authors then examined commonalities among models and found seven constructs to be significant direct determinants of intention or usage in one or more of the individual models. They hypothesized that four of them play a significant role as direct determinants of user acceptance and usage behavior and after filtering the variables the authors presented the new theory of all eight theories, the unified theory of acceptance and use of technology as shown in Figure 1.
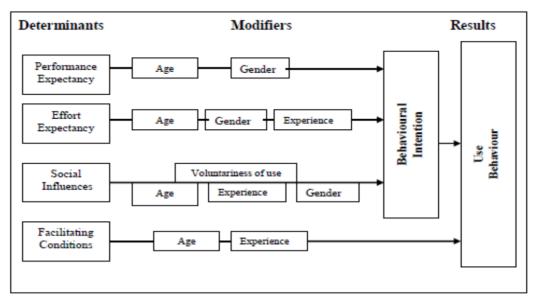
Figure 1. The unified theory of acceptance and use of technology

Source: Venkatesh et al. (2003)

The constructs in the model were defined and related to similar variables in the eight models as follows:

Performance Expectancy (PE) is the degree to which an individual believes that using the system will help him/her attain gains in job performance. The constructs in the other models that pertain to performance expectancy are: perceived usefulness (TAM, and combined TAM-TPB), extrinsic motivation (MM), job-fit (MPCU), relative advantage (DOI), and outcome expectancy (SCT). This construct, within each individual model, was the strongest predictor of intention and remained significant at all points of measurement in both voluntary and mandatory settings.

Effort Expectancy (EE) is the degree of ease associated with the use of system. The constructs in the other models that capture the same concept are: perceived ease of use (TAM), and complexity (DOI and MPCU). The construct in each individual model was significant in both voluntary and mandatory settings, and as expected from the literature it was significant only during the post training measurement.

Social Influence (SI) is the degree to which an individual perceives that important others believe he/she should use the new system. Similar constructs are represented in existing models: subjective norms (TRA, TAM2, TPB/DTPB, and combined TAM-TPB), social factors (MPCU), and image (DOI). The comparison between models found that this construct behaved similarly; it is insignificant in voluntary contexts and becomes significant when use is mandatory. The literature explained that in mandatory contexts the effect is attributed to compliance and appears to be important only in the early stages of individual experience and when rewards/ punishment are applicable; in contrast, social influence in voluntary contexts operates by influencing perceptions about the technology (what is known as internalization and identification).

Facilitating Conditions (FC) is the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system. This definition captures three different constructs in existing models: perceived behavioral control (TPB/DTPB and combined TAM-TPB), facilitating conditions (MPCU), and compatibility (DOI). The comparison between models revealed that the relationship between intention and this construct in each model is similar in both voluntary and mandatory settings in the first training period but such influence disappears in the second period (one month after implementation). Based on the literature, when both performance expectancy and effort expectancy constructs are present, facilitating conditions become insignificant; and consistent with TPB/DTPB facilitating conditions are also direct antecedents of usage (an attribute found also in MPUC). This effect is expected to increase with experience with technology as users find multiple avenues for help and support.

The UTAUT model development took into consideration the impact of moderators in improving the explanation power of the model. In this paper the impact of moderators is not presented. However, the experience variable which was treated as a moderator in the original UTAT is being treated as an antecedent to all construct in the

proposed model. Previous research supports such proposition: Novak et al., 2000; Ghani & Deshpande, 1994, cited in Lassar et al, 2005 shown that expertise and proficiency among respondents influence the use of technology. Experience was also reported to have an impact on perceived usefulness (Compeau & Higgins, 1995; Taylor & Todd, 1995; Johnson & Marakas, 2000). Users' prior general computer experience affects their perceptions of ease of use (Gruiting & Ndubisi, 2006). Agrawal & Prasad (1999) found positive relationship between similar system experience and PEOU.

The accumulated UTAUT model was able to account for 70 percent of the variance in usage intention, which is considered a measure improvement over any of the original models where the maximum was around 40 percent. However, UTAUT authors acknowledged a limitation of content validity due to measurement procedures and recommended that future research should be targeted at more fully developing and validating appropriate scales for each of the constructs with emphasis on content validity and revalidating or extending UTAUT with the new measures (Venkatesh et al., 2003). A test for the invariance of the new measurement scale of the UTAUT instrument was carried out by Li & Kishore (2006).The authors recommended caution in interpreting the findings since the instrument pertaining to the UTAUT constructs has invariant true scores across most subgroups in the context of acceptance of online community Web log systems. They also pointed out the need for more invariant studies about the UTAUT constructs (Li & Kishore, 2006). Wang & Yang (2005) extended the UTAUT to fit with their study, online stocking in the financial market, by adding the personal trait construct to the model. They treated this extension in two ways by exploring the role personal traits play in the UTAUT model as indirect or intervening. Authors recommended that future research may reconsider the moderators in the original UTAUT to supplement the model. Carlsson et al. (2006) adopted UTAUT to explain mobile advanced services and device adoption on an individual level and mass use context. The authors acknowledge that the results obtained do not support in all cases the original UTAUT hypotheses. Thus, their earlier reservation on the use of the UTAUT for explaining both behaviors of intention/ usage of mobile devices and mobile services in an asynchronous manner was fairly justified. The authors argued the need for modification or extension of the model used to account for the differences in the adoption behavior of mobile devices and services. Knutsen (2005) used a subset of the UTAUT to explore the relationship among expectations related to performance of a new mobile service, efforts needed to utilize new mobile services, and how these constructs affect attitudes toward new mobile services. The research design consisted of performance expectancy (PE) and effort expectancy (EE), age as an antecedent to the UTAUT constructs, and attitude as a subsequent of the two constructs of UTAUT. Also, effort expectancy was hypothesized to affect performance expectancy. The empirical results significantly verified the relationship between PE-EE and attitude as well as between EE-PE. Results also suggested that PE and EE are strong determinants of attitude toward new mobile services. Increased age was found to be connected to lower levels of anticipated ease with new mobile services. However, age appeared to have a positive effect on PE indicating that older individuals have higher expectations towards new mobile services.

The UTAUT was formulated by leading researchers in the technology acceptance domain. The model was formulated based on conceptual similarities among eight dominant models in the field. According to its authors, the UTAUT is a definitive model that synthesized what is known and advances cumulative theory while retaining a parsimonious structure. Although published studies adopting this model are still limited compared with TAM and other technology acceptance models, this does not undervalue the power of this model.

3. Conceptual Framework and Study Hypotheses

Having presented the models frequently used to explain intentions and behaviors in relation to the adoption of new technologies, there are challenges. Although TRA, TPB and TAM are the models most used for explaining technology acceptance, their explanatory power in terms of behavioral intentions ranges from only 30-40%. The integrated model of UTAUT presented later by Venkatesh et al. has an explanatory powerful of 70% (Venkatesh et al., 2003) and it combines in one model all the previously tested and proven variables that have been used in explaining acceptance behavior. However, although many models have been applied to investigate Internet banking behavior, very few have adopted the UTAUT model.

Based on the UTAUT authors recommendations, this study proposes an extension to the UTAUT model, the integration of the website quality construct that complements the online behavior, specifically internet banking usage.

Taking into consideration the pervasiveness of the Internet in all business domains and the importance of this channel for all who wish to reap the promised benefits from the Internet, it becomes highly important to design

the access gate (the virtual shop front), in other words, the websites, as efficiently as possible to yield the returns desired.

From literature review on website quality, a number of conclusions can be drawn with regard to the importance of the website quality, the dimensions investigated, and the resemblance that can be noted among these dimensions.

As indicated by the work of Floh & Treiblmaire (2006), website quality, with dimensions of design, structure and content, is an important factor for achieving customer satisfaction. However, information quality of content, accuracy, format, system quality, perceived effectiveness and social influences have different weights in achieving website satisfaction. Information quality and perceived effectiveness are important factors when assessing website satisfaction and social influence is important for the community satisfaction assessment while system quality is important for search engine websites (Schaupp et al., 2006).

On the other hand, website quality dimensions: technical quality, specific content quality, general content quality and appearance quality can be utilized to assess the website quality on an aggregated level (Aladwani & Palvia, 2000). Furthermore, the four dimensions are also significant predictors of consumers' attitudes, which can influence intentions to purchase from online channels (Aladwani, 2006).

Alternatively, the e-service dimensions of trust, reliability, responsiveness and website design are significant factors in predicting overall service quality and customer satisfaction which leads to a behavioral intention of purchase in the online context (Lee & Lin 2005). However, e-service quality dimensions of reliability, assurance, and responsiveness have an impact on the decision to use e-banking services which represents a form of online behavior (Gan et al., 2006). Because e-service quality is considered a multi-dimensional construct that includes partial quality judgment with regard to service categories in a bank's portal, factors such as reliability, function or design, responsiveness and process strongly affect consumer satisfaction with reliability being the most powerful driver. Furthermore, the aesthetic appeal of the website is important in relation to a user's judgment of the functionality and usability of the website and users strongly associate the efficiency and quality of the content of a website with the visual appeal of the website design (Bauer et al. 2006). Finally, e-TransQual dimensions of responsiveness, reliability, process, functionality (design) and enjoyment are important for achieving overall service quality judgment. The dimensions of reliability, functionality and responsiveness are important for achieving customer satisfaction while functionality and reliability are important in accessing customers' perceived value (Bauer et al. 2006).

In addition to website quality perceptions effect on users' satisfaction, website quality perceptions have also been reported to effect behavioral intention and usage decisions (Delon & McLean 1992, and 2003; Nelson et al., 2005; Wixom & Todd, 2005; Ahn et al., 2007).

This study is adopting the website quality perceptions scale developed and validated by Aladwani & Palvia (2002). Their model is an aggregated scale of different aspects of website features and presence that affect the online behavior and comprises four dimensions: technical quality, specific content quality, general content quality, and appearance quality. The validated 25-item measuring scale is considered appropriate and can be used with the UTAUT measurement scale without jeopardizing the parsimony principle of the research model, a quality that cannot be achieved if other scales discussed were employed i.e. Bauer (2006) e-TransQual. Therefore this study is adopting Aladwani & Palvia's (2002) perspective with regard to the website quality dimensions and aims at treating this variable and its dimensions as a replacement to the dimensions of the "facilitating condition" variable in the original UTAUT model.

Also in this study the researchers will examine the previously established relationships among TAM constructs which was not tested among equivalent constructs in the UTAUT model. Figure 2below illustrates the proposed model.
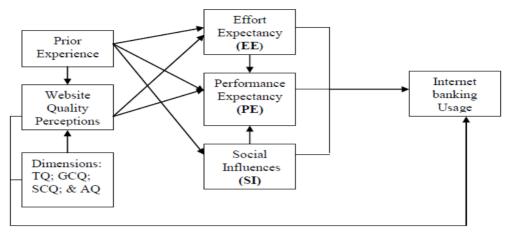
Figure 2. The study's proposed research model

Based on the above, the following hypotheses were formulated:

H1: Effort Expectancy will have a positive effect on Performance Expectancy.

H2: Social Influences will have a positive effect on Performance Expectancy.

H3: PE will mediate the relations between EE-Usage and SN –Usage.

H4: Website quality will have an indirect effect on IB usage through PE and EE constructs.

H5: Website quality perceptions will have a direct impact on IB usage.

This hypothesis is broken down to the following sub-hypotheses:

H5.1 Technical quality (TQ) will have a positive effect on usage behavior.

H5.2 General content quality (GCQ) will have a positive effect on usage behavior.

H5.3 Specific content quality (SCQ) will have a positive effect on usage behavior.

H6: Prior Experience will have a positive effect on Effort Expectancy.

H7: Prior Experience will have a positive effect on Performance Expectancy.

H8: Prior Experience will have an effect on Social Influences.

H9: Prior Experience will have a positive effect on Website Quality perceptions.

4. Research Methodology

This study is conducted for the purpose of testing the hypotheses derived from the conceptual framework presented. It is believed that studies employing hypotheses testing purpose usually tend to explain the nature of certain relationships, or establish the differences among groups or the independence of two factors or more in a situation. Hypotheses testing offer an enhanced understanding of the relationships that exist among variables. A correlation study is chosen to delineate the variables associated with the research objectives and identify the important determinants of online behavior (Internet banking) in a non-contrived setting. A quantitative approach is adopted for this research. Quantitative research generally is considered to be more formalized and structured than qualitative research.

The research instrument design consisted of three pages and a cover letter, which indicated the purpose of the study and contact details for the researcher. The measuring instrument consisted of four parts. Part one covered respondents' level of experience with computers and Internet knowledge. Part two covered the demographic variables. Part three and four covered the models' construct measurement and was composed of an empirically established measurement scale adopted from Venkatesh et al. (2003), Aladwani & Palvia (2002), and Aladwani (2006). A pre-test to the Arabic version of the research instrument was carried out a convenient sample of fourteen individuals working at a communication company. Each of the respondents completed a first version of the questionnaire and provided feedback about the process (e.g. time, clarity of direction and wording of measures). In general, the respondents indicated that the questionnaire was clear and easy to complete. Following the pre-test, minor modifications to the instrument were made (e.g. excluding what looked like a duplicate statement).

The population for this study consists of individual users of Internet banking services in Jordan; this research is targeting actual users in non-discretionary conditions. Although a controlled environment where actual behavior can be measured by means of observation or electronic observation would enhance the generalizability of the findings, the resources necessary for this option are not available to the researcher. The current study utilizes self-reported usage behavior as a pragmatic (though limited) solution to the research requirements. The sample size decision is made based on the statistical tool to be used, structural equation modeling technique. Although large samples generally tend to produce more reliable solutions, the sample size decision must be made based on a set of factors related to the model complexity, expected rate of missing data, and estimation procedures used (Hair et al., 2006). The size of minimum 200 usable responses is the target set for this study taking into consideration the model complexity.

For the sampling procedure, three cities were chosen as best representative of the population. The three main cities (Amman, Zarka, and Salt) that were chosen are considered representative communities reflecting different live pattern in the Hashemite Kingdom. The cities' centers were the locations targeted for recruiting respondents. Banks branches are normally located in centers such as these, making them ideal for targeting respondents. In addition, a snowball approach was utilized to distribute questionnaires to banking user via acquaintances. A return of 309 responses from 400 circulated presented a response rate of 77%. Among the returns 85 were incomplete and unusable. The remaining 224 were used for data analysis.

4.1 Sample Description

Sample descriptive analysis for the first and third part of the research instrument reveals the characteristics of the sample with regard to computer and Internet experience, demographics, IB adoption/ usage, and banking services carried out on the Internet banking channels.

Computer and Internet experience levels showed that the sample is nearly as knowledgeable about Internet (66% ranged between good-v. good) as computers (63 % range between good-v. good); 50% fall within adoption range of more than 3 years and the other 50% is divided between less than a year and 1–2 years of Internet usage. 26% reported a daily usage rate of 3 hours or more while the remaining numbers are divided (36% and 38%) between non-usage and 1–2 hours only.

Females comprised 40% of the sample against 60% for males. The majority of the sample are educated 56% have a bachelor or higher education. 67% are below the age of thirty and the remaining 33% are above that age. Nevertheless, 46 % are singles and 42% are married while divorced and others comprised 12% only.

In respect of employment type, 56 % are employed by the private sector while 19% are employed by the public sector; 17% are freelancing while 7% are unemployed at the time of survey. On the income level, the majority (65%) falls between a monthly income level of JD500 and less while 35% earn more than JD500/month. Sample distribution according to respondents' area of residence is fairly balanced: 26% in Zarka, 32% in Amman, and 39% in Salt; the remaining (3%) reside in other areas. (Note: 1 USD = 0.71 JD).

Information related to Internet banking usage showed that the majority (80%) of respondents are new to Internet banking usage or adoption, with usage rate ranging between >1–2 years, which is not surprising taking into consideration that the Internet accessibility at household level is made available on wide scale only recently. On a weekly basis, 40% of respondents browse their online accounts once a week while 31% check it between 2–3 times and 12% check it more than 4 times. The remaining 7 % do not.

The final set of descriptive analysis is related to the banking services carried out on the Internet banking channel. Using principle component factor loadings the nine services loaded into two sets: basic and advanced services. Basics include: transaction and balance enquiries, statements' enquiries, and transferring between accounts. Advanced services include: travelling and insurance services, applying for loans, requesting credit card, cheque book, paying bills, and online stock trade. The frequency descriptive analysis showed that basic services, namely transaction and balance enquiry, and statement enquiry, are the constantly utilized services over the Internet banking channel with scores 47% and 40%. Money transfer scored highest on occasional utilization (35%). Among the advances services; paying bills and requesting cheque books scored high on occasional type of utilization (27%) and requesting credit (22%) followed by stock trade over the Internet banking facilities (19%). The remaining scores were high for the rare type of utilization.

5. Data Analyses

Prior to analysis, research instrument items were examined, through SPSS statistics package, for accuracy of data entry, missing values, outliers and normality. Routine pre-analysis screening procedures for assessment of multivariate assumptions were carried out using the multiple regression and residual analysis. Missing data were

below 5% and were replaced with the mean value (Schumacker & Lomax, 2004; Hair et al., 2006). For most of the multivariate assumption check, residual analysis was applied to check for outliers, normality, linearity, homoscedasticity, and multicollinearity. Univariate and multivariate outliers were examined using the residual analysis and no univariate outlier cases with residual above 3.29 were found. Four multivariate outliers were detected on the Mahalanobis distance measure and were checked against regression analysis using a dummy variable to assess their influence. The resulting R^2 value was small (.164) and when turned into a tolerance reading (1- R^2 =.836) the output is high indicating that the outliers has little effect on the rest of the independent variables (Hair et al., 2006). The descriptive analysis revealed that the data skewness and kurtosis were within ±1, which is considered acceptable and does not call for remedy by data transformation (Hair et al., 2006).

5.1 Measurement Model Assessment and Confirmatory Factor Analysis (CFA)

This study is applying the CFA approach to assess the measurement model. The measurement model was drawn on the AMOS version 7 graphics. In CFA, distinguishing between dependent and independent variables is not necessary for the measurement stage. CFA is run with all variables linked as shown in figure 3. In the figure, measured variables are shown in rectangular shapes by labels corresponding statements in the questionnaire Likert scale questions (1–36). Latent variables are shown in the oval shapes. Two-headed connections indicate covariance between constructs. One-headed connectors indicate a causal path from a construct to an indicator. The results are presented in figure 3 below.
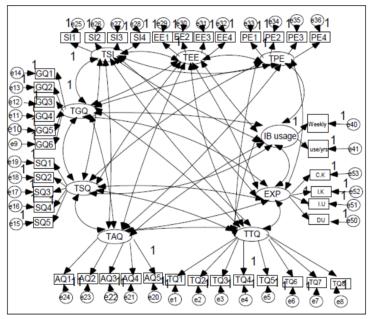

Figure 3. CFA measurement theory model for internet banking usage

5.2 Measurement Model Fit

Testing the impact of website quality dimensions, as independent variables, and applying the assessment and refinement criteria resulted in the final model depicted in figure 4.
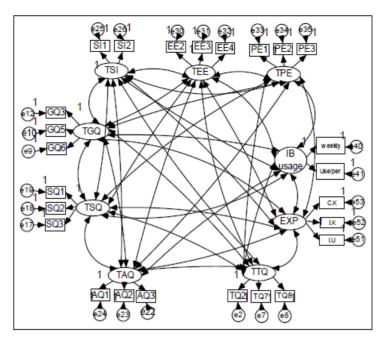
Figure 4. The refined measurement model

The model fit statistics readings are: CMIN = 347.109 with df = 239 and CMIN / df ratio = 1.452 which is less than 2 indicating a good fit. Absolute fit indices such as SRMR = .045 and GFI = .890 indicating an adequate fit. The incremental indices: NFI = .886 and CFI = .961 also indicating good fit. Finally, RMSEA = .045 with 90% confidence interval (.034 and .055) and PCLOSE = .783 indicating a good fit. The overall model fit indices indicate an acceptable fit. Table 1 summarizes the other AMOS output indicators of good fit. The table shows that all factor loadings are above .7 except for three items: EE2, Internet usage per years, and TQ8 with readings: .642, .640 and .663 respectively. The average variance extracted values are all above .5. Reliability ranges between .862 and .756 indicating adequate reliability. TSI and IB usage are presented by two items each and thus their reliability estimate is expressed by the inter-item correlations (R). Experience reliability can be improved if one item (internet usage rate) was deleted; however, this decision is delayed for the time being.

Table 1. Jordanian standardized factor loadings (regression weights), variances extracted, and reliability estimates

	TSQ	TAQ	EXP	TPE	TEE	IB usage	TGQ	TSI	TTQ
SQ3	.719								
SQ2	.717								
SQ1	.778								
AQ3		.710							
AQ2		.790							
AQ1		.734							
I.K			.874						
C.K			.879						
I.U			.725						
PE1				.740					
PE2				.872					
PE3				.799					
EE2					.642				
EE3					.775				
EE4					.752				
W.U						.842			
IB.U/yrs						.640			
GQ3							.709		

GQ5							.777		
GQ6							.789		
SI1								.848	
SI2								.867	
TQ2									.770
TQ7									.713
TQ8									.663
AVE	57.6%	55.6%	68.7%	64.9%	52.6%	55.9%	57.6%	73.5%	51.4%
Reliability α	.780	.785	..862	.842	.767	R= .539	.799	R= .735	.756

Having established acceptable fit of the measurement model the next step is to assess the measurement model validity, in particular, convergent and discriminant validity.

5.3 Assessment of Validity

Convergence validity is supported as evident in table 1: by the results of standardized factor loadings.

Discriminant validity is investigated through the average variance extracted method (AVE) shown in table2.

Table 2. Selected AMOS text output for implied (all variables) correlation matrix

	TGQ	**TSI**	**TTQ**	**IB usage**	**TEE**	**TPE**	**EXP**	**TAQ**	**TSQ**
TGQ	**.576**	.119	.692	.136	.429	.398	.087	.637	.726
TSI	.345	**.735**	.284	.040	.362	.135	.015	.181	.158
TTQ	.832	.533	**.514**	.132	.579	.581	.114	.604	.593
IB usage	.369	.200	.364	**.559**	.147	.150	.392	.058	.142
TEE	.655	.602	.761	.383	**.526**	.452	.210	.288	.362
TPE	.631	.368	.762	.387	.672	**.649**	.251	.289	.413
EXP	.295	.121	.337	.626	.458	.501	**.687**	.034	.120
TAQ	.798	.426	.777	.241	.537	.538	.185	**.556**	.576
TSQ	.852	.398	.770	.377	.602	.643	.346	.759	**.576**

Note: values on the diagonal are the constructs calculated AVE. The values below the diagonal are the constructs implied correlations. Values above the diagonal are the squared correlations with bold indicating covariance.

The table above shows that TTQ has covariance with TEE and TPE in addition to the other website quality dimensions. The deletions of TTQ might help achieve discriminant validity. Nevertheless, the covariance among TAQ, TSQ and TGQ requires considering a second order structure for the website quality perceptions factor.

Without establishing discriminant validity of the measurement model, researchers cannot proceed with the second part of SEM, the structural model testing. Unless the discriminant validity issue is solved, the hypothesis and model testing cannot be carried out at this stage. Thus, the decision calls for the re-structure of the theoretical model and presenting the second-order structure with regard to website quality factor.

5.4 CFA for the Second-Oder Website Quality Structure

To start, CFA for the first order was run, and then the second order was introduced followed by the incorporation of the second order structure into the hypothesized research model (Byrne, 2001). Following these step, a CFA run to the first order constructs resulted in the specifications depicted in figure 5 and the model fit readings are:

CMIN= 84.897 with df =38 and CMIN/df ratio = 2.234 which although >2 is still within the ranges cited previously in section 5.3.1. Standardized RMR = .0391 and GFI = .934; NFI = .928 and CFI= .958 indicating good fit. RMSEA = .074 with 90% confidence interval (.053 and .096). Although RMSEA close to the higher range of .08, the other fit indices present good fit.
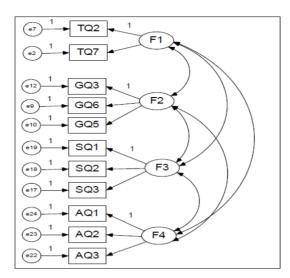
Figure 5. Website quality first-order model-for the sample

Having reached a satisfactory first-order model, the next step is to introduce the second order variable and check the model specifications again. The first run of the second order structure revealed that there was no need for modification and that the model specifications were satisfactory. The second-order factor model is specified in the following way: (a) each item would have a nonzero loading on the first-order factor (TTQ, TGQ, TSQ, and TAQ) that it was designed to measure and a zero loading on each of the other first-order factors; (b) error terms associated with each item would be uncorrelated; and (c) all covariance between each pair of the first-order factors would be explained by a higher order factor— which is termed website quality perceptions.

The model standardized regression weights are above .5 and the SMC's are also above .7 and the model fit statistics are: CMIN= 84.921 with df = 40 and CMIN/df ratio = 2.123; Standardized RMR = .0392 and GFI= .934; NFI= .928 and CFI = .960 all indicating a good fit; and RMSEA = .071 with 90% confidence interval (.050, .092) and PCLOSE = .051 indicating an adequate fit.

Looking at the model notes with regard to degrees of freedom might indicate that the model is over-identified (more sample moments than parameters to be estimated) as shown below and that it is safe to proceed with the analysis.

Number of distinct sample moments: 66

Number of distinct parameters to be estimated: 26

Degrees of freedom (66- 26):   40

However, according to Byrne (2001), with hierarchical models, it is critical to check the identification status of the higher order portion of the model. In this model, with four- order factors, there are:

Sample moment = (n (n + 1)) / 2 =10 where n = 4

Free Parameters: 0 error variances (these are set to 1)

  + 4 factor variances

  + 0 factor covariances (these are set to 0)

  + 4 regression coefficients

  _____

   8 total free parameters

Degrees of Freedom= Sample moments – Free parameters = 10 – 8 = 2

With 2 degrees of freedom, the model is over-identified; thus it is safe to proceed and incorporate the second-order structure into the measurement model. Correspondingly, the second order structure statistics incurred no change from the first order model statistics; hence, indicative of good fit and satisfactory structure to proceed with.

5.5 Measurement Model with Second-Order Structure

Running the CFA for the research model after incorporating the website quality perceptions second–order structure and applying the refinement criteria resulted in the measurement model for the Jordanian sample depicted in figure 6.
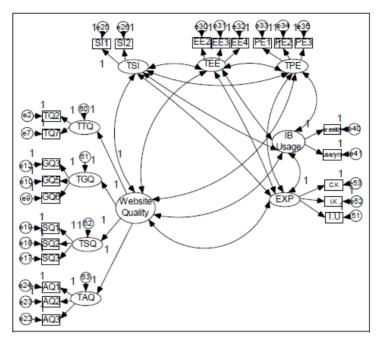

Figure 6. The measurement model with second-order structure

The model fit indices are indicative of a good fit: CMIN = 353.586 with df = 236 and CMIN/df ratio = 1.498; standardized RMR = .0503 and GFI = .885; NFI= .878 and CFI= .955; and RMSEA= .047 with 90% confidence interval (.037, .057) and PCLOSE = .663.

Other statistical results of standardized loadings estimates are all above .7 except for IB usage- use/yrs (.635) and TEE- EE2 (.646), which do not seem to significantly harm model fit or internal consistency. The SMC's are all above 0.5 except for 3 items that were kept in fear of un-identification issues. The reliability estimates all exceed 0.7. Reliability for constructs presented with two items only is measured by the inter-item correlation.

The model validity, convergent and discriminant, tested in the measurement model are investigated next. Statistical results such as factors' loadings and variance extracted plus constructs reliability are used to investigate convergent validity. The results are presented in table 3.

Table 3. Second-order measurement model: standardized factor loadings (regression weights), variance extracted (SMC's), and reliability estimates

	WQ	TGQ	TSQ	TAQ	TTQ	TPE	TEE	TSI	EXP	IB usage
TAQ	.842									
TTQ	.915									
TGQ	.927									
TSQ	.871									
GQ6		.779								
GQ5		.776								
GQ3		.732								
SQ3			.725							
SQ2			.699							
SQ1			.742							
AQ1				.756						

AQ2				.792						
AQ3				.720						
TQ7					.723					
TQ2					.776					
PE1						.741				
PE2						.867				
PE3						.803				
EE2							.646			
EE3							.772			
EE4							.752			
SI1								.853		
SI2								.862		
I.K									.873	
C.K									.880	
I.U									.725	
U/ W										.848
U/yrs										.635
AVE	56.0%	58.2%	52.2%	57.3%	56.3%	64.8%	52.6%	73.5%	68.7%	56.2%
Reliability α	.904	.799	.780	.785	R =.563	.842	.767	R =.735	.862	R =.539

Thus; enough evidence is shown to support convergent validity. Discriminant validity is assessed through various methods that reflect different levels of stringency; the average variance extracted (AVE) method is a conservative approach which compares constructs' average variance extracted (AVE) with the squared inter-scale correlation for that construct. Table 4 depicts these comparisons and indicates evidence of discriminant validity. The table also shows that first order variables are correlating with higher order, which is expected.

Table 4. Selected AMOS text output for implied (all variables) correlation matrix—the second-order measurement model

	W.Q	**Exp**	**IB usage**	**TSI**	**TEE**	**TPE**	**TAQ**	**TTQ**	**TSQ**	**TGQ**
W.Q	**.560**	0.118	0.158	0.223	0.521	0.526	0.709	0.837	0.759	0.859
Exp	.343	**.687**	0.389	0.015	0.209	0.253	0.084	0.099	0.089	0.101
IB-usage	.398	.624	**.562**	0.040	0.144	0.150	0.112	0.132	0.120	0.135
TSI	.472	.122	.200	**.735**	0.364	0.137	0.158	0.187	0.169	0.192
TEE	.722	.457	.380	.603	**.526**	0.453	0.370	0.437	0.396	0.448
TPE	.725	.503	.387	.370	.673	**.648**	0.372	0.440	0.398	0.452
TAQ	.842	.289	.335	.398	.608	.610	**.573**	0.594	0.537	0.610
TTQ	.915	.314	.364	.432	.661	.663	.771	**.563**	0.635	0.719
TSQ	.871	.298	.346	.411	.629	.631	.733	.797	**.522**	0.651
TGQ	.927	.318	.368	.438	.669	.672	.781	.848	.807	**.582**

Note: values on the diagonal are the constructs calculated AVE. The values below the diagonal are the constructs implied correlations. Values above the diagonal are the squared correlations.

5.6 Testing the Structural Model with the Second-Order Structure

The first run of the structural model revealed a need for deleting TSI as negative variance was associated with the error term (e25) of SI1; in addition, the major hypothesized path between TSI- TPE is insignificant. The structural model presented more than one solution; thus running specification search resulted in a choosing the model that best present the factorial relations in accordance with the conceptual framework and theoretical backgrounds; especially with regard to the key variable, performance expectancy, and the dependent variable, Internet banking usage. The chosen solution is depicted in figure 7.
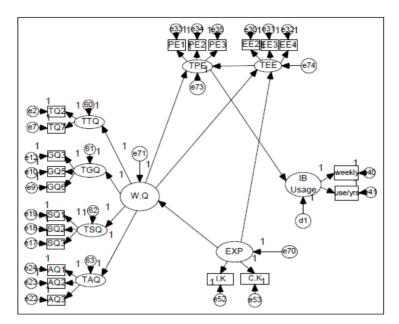
Figure 7. Structural model with second-order structure

The model fit statistics are: CMIN= 321.692 with df = 182 and CMIN/df ratio = 1.768; Standardized RMR =. 067 and GFI = .880; NFI = .868 and CFI = .937; and RMSEA = .059 with 90% confidence interval (.048 and .069) and PCLOSE = .088. The model indices are all indicating an acceptable fit.

5.7 Hypotheses Testing

The factor loadings (regression weights) output indicate that the hypothesized paths between the major constructs and the dependent variable are significant.

Table 5. Selected AMOS text output for the model estimates

		Paths		Estimate	S.E.	C.R.	P
H9	EXP	→	WQ	.267	.057	4.661	***
H6	EXP	→	TEE	.201	.050	4.039	***
H4	WQ	→	TEE	.562	.082	6.846	***
H4	WQ	→	TPE	.528	.127	4.162	***
H1	TEE	→	TPE	..520	.153	3.396	***
H3	TPE	→	IB usage	.421	.083	5.069	***

Note: *** p<.001; ** p<.01; * p<.05.

The hypothesized direct path between effort expectancy and performance expectancy was supported (H1). The hypothesized path between social influence and performance expectancy was not supported (H2). The mediating role of PE between EE and IB-usage is significant; however, since the path between social influence and PE was insignificant, the mediating role of PE between IS and IB-usage was not supported. Thus, H3 is partially supported. The direct path between WQ and IB-usage is insignificant; hence, H5 is not supported. Nevertheless, website quality perceptions hypothesized path with PE and EE is supported and the mediating role of PE and EE between WQ and the dependent variable is supported, through EE-PE and PE-IB paths (H4)

Experience impact as an antecedent is supported by the significant direct paths between experience and effort expectancy (H6) and between experience and website quality perceptions (H9). The hypothesized path between experience and performance expectancy (H7) is not supported. Correspondingly, the hypothesized path between experience and social influence (H8) was supported but since social influence hypothesized paths with PE and is insignificant; social influence variable was removed from the final model.

Table 6 shows the standardized factor loadings (regression weights), which reports the standardized direct effect between the model constructs.

Table 6. Selected AMOS output- Standardized factor loadings for the sample

Paths			Estimate
EXP	→	WQ	.344
EXP	→	TEE	.287
WQ	→	TEE	.621
WQ	→	TPE	.445
TEE	→	TPE	.396
WQ	→	TAQ	.841
WQ	→	TTQ	.910
WQ	→	TGQ	.932
WQ	→	TSQ	.873
TPE	→	IB-Usage	.412

The output shows that PE has the largest and the only direct impact on the dependent variable (.412). Website quality perceptions have a larger impact on EE (.621) than on PE (.445). Experience has a larger impact on WQ (.344) than on EE (.287).

Table 7 reports the standardized total effects (direct effects and indirect effects); thus gives a comprehensive indication of the regression weights among the model variables. Reading vertically, experience has its largest effect on EE (.501) followed by PE (.351) and then WQ (.344) with a minor difference (.007) between the last two.

Table 7. Selected AMOS text output- Standardized total effect for Jordanian sample

	EXP	WQ	TEE	TPE	IB_ Usage
W Q	.344	.000	.000	.000	.000
TEE	.501	.621	.000	.000	.000
TPE	.351	.691	.396	.000	.000
IB_ Usage	.145	.285	.164	.412	.000

Website quality perceptions have its larger effect on PE and EE with the latter being less affected by a small difference of .07. EE has a larger impact on PE than on the dependent variable. PE still has the largest impact on the dependent variable compared to other variables in the model.

6. Results, Discussion and Conclusions

This paper had four folded objectives, to extend the UTAUT model to account for online behavior, to investigate the viability of previously established relationships in TAM's model among the equivalents in UTAUT model, namely, Effort expectancy – Performance Expectancy and the mediating role of Performance Expectancy between Effort Expectancy - Usage on one side and Social influence-Usage. Finally, to investigate the impact of web-design quality dimensions on IB usage.

The results demonstrate that the TAM's previously established relations; specifically the EE-PE and mediating role of PE between EE-Usage (i.e. Davis, 1989; Davis et al., 1989; Taylor & Todd, 1995) are transferable to the accumulated model of UTAUT. Yet the impact of social influences in the model was not supported and hence the mediating role of PE between SI-Usage. In this study, Internet banking actual usage (not intentions) is investigated on the individual level, and in a non-mandatory contexts and respondents are well versed in the e-behaviour at hand.. Therefore, the insignificant impact of social influence on performance expectancy result confirms with previous findings reported in the literature. Literature has shown that with gained experience, social influence impact tends to deteriorate (Morris &Venkatesh, 2000; Taylor & Todd, 1995; Karahanna & Straub, 1999; Venkatesh & Davis, 2000; Venkatesh et al., 2003). Figure 8 demonstrate the structural model with hypotheses depicted on paths.
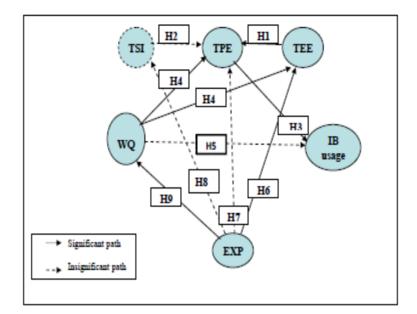
Figure 8. Structural model with hypotheses depicted on paths

The mediating role of performance expectancy between EE-IB an SI-IB is partially supported in this study. In other words, only the mediating role of performance expectancy between EE-IB is supported. Based on literature, perceived ease of use (PEOU) is a significant antecedent of perceived usefulness and thus can affect acceptance of systems indirectly through perceived usefulness (Davis et al., 1992).

The hypothesized paths between WQ-EE and WQ-PE are supported in the model and confirm with findings from previous researches especially in IS researches. Lederer et al. (2000) found information quality to predict usefulness. Wixom & Todd (2005) found significant relationships between information satisfaction and quality satisfaction on one hand and TAM's constructs of usefulness and ease of use on the other. Ahn et al. (2007) found website quality (measured by: system, information, and service quality) to impact PEOU and PU. According to Ahn et al. (2007), IS research sees the website as an information system and hence, focuses on system and information quality, while marketing and specifically, service research sees a website as service provider and thus, focuses on the service quality dimensions. The authors stated that despite the differences of approach, Website Quality and System Quality measurement categories is a balanced option of system, information, and service quality. The hypothesized role of EE and PE as mediators to the effect of WQ on IB usage is supported. Even though, WQ has a significant direct impact on EE in the model, the effect of EE on IB usage is indirect, through PE. The mediating role of EE and PE between WQ-IB usage confirms with findings from previous researches. MacFarland & Hamilton (2004), measuring system quality through dimensions of functionality, performance and interactivity, found system quality to impact system usage directly and indirectly through perceived ease of use and perceived usefulness. Igbaria et al. (1995), found system quality to influence usage through PU and PEOU. Davis (1989) explicitly suggested that system quality affects usage as an external factor through beliefs about perceived usefulness and perceived ease of use. However, the hypothesized direct path between website quality perceptions and Internet banking usage was not supported rather the impact is indirect only through EE and PE.

Experience was measured in the research instrument with four indicators assessing computer and Internet knowledge in addition to Internet usage in years and on a daily basis. In the final models' specifications this variable ended with two indicators only, computer knowledge and Internet knowledge. Experience was hypothesized as an antecedent to the UTAUT based on previous researches. The results showed that experience has a measurable direct impact on effort expectancy; the standardized total effect is .501 supporting and confirming previous research findings. On the other hand, the hypothesized path Exp-PE was not supported in the models; thus, disconfirm findings reported in previous studies (Compeau & Higgins, 1995; Taylor & Todd, 1995; Johnson & Marakas, 2000). Interestingly, in the original study of the UTAUT model, experience was not hypothesized to moderate the relation between performance expectancy and intentions but was hypothesized to impact or moderate the effort expectancy-behavior intentions relationship (Venkatesh et al., 2003). Experience

impact on performance expectancy in the current study is mediated by its impact on effort expectancy which confirms previous findings that reported users' prior general computer experience affects their perceptions of perceived ease of use (Gruiting & Ndubisi, 2006). Building on the other findings concerning PEOU-PU link and PU-usage link, it is expected that the experience-PE link is indirect and mediated by EE.

The impact of experience on social influence was supported by the model. Nevertheless, that path was deleted when social influence was removed from the final structural model on the grounds of its insignificant relation to performance expectancy. Accordingly, the support for the significant path Exp-SI confirms previous researches that reported on experience effect on social factors (Thompson et al., 1994).

As for experience impact on website quality structure, the sample showed a significant path between Exp-WQ and the standardized direct effect (.344). This confirms previous researches that facilitating conditions is affected by experience (Taylor & Todd, 1995; King & Dennis, 2003).

In conclusion, this study found support to most of its objectives. The UTAUT is extendable to the online context. The website quality dimensions showed a great impact on usage behavior although indirectly through the two key construct in the model: effort expectancy and performance expectancy. The previously established relationships among TAM's variables are transferable to the equivalents in UTAUT, namely EE-PE and the mediating role of PE between EE-Usage behaviors. As expected with gained experience, the social influence impact tends to deteriorate. Experience direct impact as an antecedent to model constructs is supported except for performance expectancy, which turned to be indirect through effort expectancy.

7. Future Researches

As the case of testing any new extended model, further investigation is necessary. This study was conducted in Jordan (non-industrial country), using the extended model in industrialized countries is a great future research area, to determine any differences in the adoption pattern and compare the results.

This study model was built based on the UTAUT, testing the original model of UTAUT on similar sample is also a good future research area. Applying the extended model in different area other than internet banking is also important in examining the constancy of the model in different sectors.

Based on the literature review found during the preparation of this study, examining other moderating variables effect on the model will open a wide future research area.

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