Website design quality and usage behavior:

Unified Theory of Acceptance and Use of Technology

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Abstract

A well designed website brings numerous benefits to firms. Some of these benefits are well established. But what elements of the website design quality really matter and how do these elements in turn influence website usage behavior? Building upon the Unified Theory of Acceptance and Use of Technology (UTAUT) as the theoretical foundation, this paper proposes website design quality as a multidimensional construct with a higher-order structure that can be successfully incorporated into the UTAUT model, conceptually outperforming existing models. The results are based on a survey of 216 users of internet banking. Findings indicate that the technical, general content and appearance dimensions of a Web site are the most important for users. In addition, these dimensions are significantly related to usage behavior directly and indirectly through belief constructs. Finally, as the dimensions of website design quality are interrelated, the overall evaluation may be influenced by a halo-effect. The implication is that improvements to the appearance design of a website should enhance the overall evaluation and lead to greater usage intention.

Keywords: *Online behavior, Website design quality dimensions, Usage behavior, Technology acceptance,*

1. Introduction

Advances in Internet technologies and related applications allow consumers ti interact with businesses in new ways. An increasing number of organizations are investing heavily in customer-directed online source technologies in an effort to increase their share on the online marketplace. As Vila and Kuster (2011) observe, businesses apply a substantial proportion of these efforts to improve the design of websites and to enhance the quality of customers' interaction experiences. Indeed, academic researchers have been examining the relationship between website design and consumer behavior for well over a decade (for e.g. Kwon, Kim, & Lee, 2002; Moss, Gunn, & Heller, 2006).

Despite its importance and the multitude of academic inquires, previous research does not provide consistent information in relation to the attributes of a website which can influence users' perceptions of it. Thongpapanl and Ashraf (2011, p. 3) note that "studies to date report conflicting results regarding the amount of information that a website should provide in order to reduce customer risk perception and enable informed purchase decisions". Similarly, Gounaris, Koritos, and Vassilikopoulou (2010) highlight the importance of atmospherics in the process of an online transaction. Following similar calls Cortinas, Chocarro, and Villanueva (2010); Andrews and Bianchi (2013); Toufaily, Ricard, and Perrien (2013) for further research into this area, this study examines how website design elements and the quality of interaction experience influence consumer behavior by enhancing the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis, & Davis, 2003).

The context for our inquiry is online banking services. Banking is a sector in which consumer behavior is task oriented (Lee, Park, Chung, & Blakeney, 2012) and in which consumers have a voluntary choice between multiple channels for their transactions. Consumers can choose between completing their transactions via using a computer, a mobile phone, a tablet, or via face to face banking. However, the majority of them tend to use more than one channels. The channel that they

use may also depend on the type of the transaction, as consumer tend to use face to face banking for highly involvement transactions (loans) whereas they tend to use online channels for lower involvement transactions (balance checking) (Cortinas et al., 2010). Banks operate in a very competitive environment and in order to differentiate their online operations tend they to emphasize on different characteristics of website design, either utilitarian (product related information, navigation) or hedonic aspects (aesthetics) in order to facilitate the perceived by the consumers transaction experience (Gounaris et al., 2010) and meet the needs of the difference consumer segments in the financial services industry (Floh, Zauner, Koller, & Rusch, 2013).

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The next section of the paper provides background information on the theoretical basis of the study and also presents the hypotheses and the conceptual model of the role of website design quality in influencing behavior. The subsequent sections detail the research method the results and the analysis. Finally, the paper concludes with a discussion of outcomes, implications for academics and practitioners, the limitations of the study and suggested directions for future research.

2. Conceptual framework and hypotheses development

Research into the adoption and continuous use of technology has been evolving since the introduction of the Technology Acceptance Model (TAM) (Davis, 1989). Although originally modeling technology use in the workplace, researchers also apply TAM in numerous consumer internet adoption studies, for example mobile Internet services (Jiang, 2009). TAM explains customers' adoption of technology within the financial service context (Proenca & Ridriguez, 2011) and more specifically, adoption of online banking (Alsajjan & Dennis, 2010; Gounaris et al., 2010). Theories such as Diffusion of Innovation (Rogers, 1983) tackle technology acceptance from a different perspective: characteristics of innovation that induce adoption and individuals' characteristics associated with adoption stages and rates. On a similar note, the Theory of Reasoned

Action (Ajzen & Fishbein, 1980) and the Theory of Planned Behavior (Ajzen, 1991), two theoretical foundation that has been extensively applied to explain consumer behaviors, address technology acceptance from a belief approach. The Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) is based on and extends TAM, attempting to integrate the eight most utilized models in technology acceptance research into one parsimonious model. The UTAUT therefore comprises the framework for the current study into internet banking adoption.

UTAUT has four key constructs (performance expectancy, effort expectancy, social influence, and facilitating conditions) that influence behavioral intention and actual use of technology. This study adapts these constructs and definitions from UTAUT to the consumer technology acceptance and use context. Therefore, *performance expectancy* is the degree to which using a technology will provide benefits to consumers in performing certain activities; *effort expectancy* is the degree of ease associated with consumers' use of technology; *social influence* is the extent to which consumers perceive that important others (e.g., family and friends) believe they should use a particular technology; and *facilitating conditions* refer to consumers' perceptions of the resources and support available to perform a behavior (Brown & Venkatesh 2005; Venkatesh et al. 2003). According to UTAUT, performance expectancy, effort expectancy, and social norms influence behavioral intention to use a technology, while behavioral intention and facilitating conditions determine technology use. In addition, individual difference variables, namely age, gender, and experience (as well as voluntariness which is part of the original UTAUT) moderate various UTAUT relationships. The lighter lines in Figure 1 show the original UTAUT along with the one modification noted above that was necessary to make the theory applicable to this context. Hence, 'effort expectancy' in UTAUT is conceptually equivalent to 'ease of use' in TAM. Similarly, 'performance expectancy' (in UTAUT) is conceptually equivalent to 'usefulness' (in TAM) (illustrated in practice by the definitions and measurement scales in Table 1).

This study aims at extending UTAUT by exploring the relationships between the performance expectancy, effort expectancy, and social influence. In their inquiry on the relationship between performance expectancy and effort expectancy, Brown and Venkatesh (2005) opined that performance expectancy is the degree to which using an online banking website technology provides benefits to a consumer in performing their banking activities. Given this definition, it is conceivable that it influences effort expectancy. This is because effort expectancy is the ease with which consumers perceive they can execute such online banking activities. Support for this reasoning can be found in the literature. Numerous studies report that when consumer perceive technology as easy to use (higher effort expectancy) they will also believe that it is more useful (higher performance expectancy); and that higher performance expectancy leads to stronger intention to use (Davis, Bagozzi, & Warshaw, 1989). For example, Ha and Stoel (2009); and Smith, Deitz, Royne, Hansen, Grünhagen, and Witte (2013); apply this model to internet shopping, whilst McKechnie, Winklhofer, and Ennew (2006) apply the model to online financial services. The first hypothesis of this study therefore suggests that,

H1. *Effort expectancy will have a positive effect on Performance Expectancy.*

Regarding the relationship social influence and performance expectancy Brown and Venkatesh (2005) identify the former as the extent to which consumers perceive that important others (family, friends, and other peers) believe they should use online banking. Given that performance expectancy is the degree to which using an online banking website technology provides benefits to a consumer in performing their banking activities, this study suggests that social influence is positively related to performance expectancy. Indeed that important other's beliefs have an influence on individuals assessment of an action being useful has been known ever since Fishbein and Ajzen (1975) introduced the concept , *subjective norm*, defined as a "person's perception that most people who are important to him think he should or should not perform the behavior in question" (p. 302). Given the proximity of the definitions it is apparent that social influence is similar in its conceptual foundations

with subjective norm. Venkatesh and Davis (2000) elaborated on this argument by suggesting that consumers may conclude that using an online banking website technology will provide benefits to them, even if they are not themselves favorable toward the behavior or its consequences, if they believe that one or more important referents think they should. This perception may make them sufficiently motivated to comply with the referents. In addition, the stronger the social influence, the sooner a consumer will adopt a new technology related behavior (Kim & Park, 2011). Therefore, a stronger social influence leads a consumer to perceive a technology as more useful (higher performance expectancy) resulting in stronger intention to use (Venkatesh, 2000; Venkatesh et al., 2003). Thus:

H2. *Social influence will have a positive effect on performance expectancy.*

Summarizing the above paragraphs, greater effort expectancy and social influence will have positive effects on performance expectancy leading to stronger intention to use as consumers' satisfaction with a service depends on their expectations about the performance of the service (Choi, Kim, & Kim, 2011). Therefore:

H3. *Performance expectancy will mediate the relations between (a) effort expectancy – usage and (b) social influence – usage.*

The UTAUT model identifies *facilitating conditions* as a construct that reflects an individual's perception about his / her control over the behavior (Venkatesh, Brown, Maruping, & Bala, 2008). As noted earlier, facilitating conditions refer to perceptions of the resources and support available to perform a behavior We promote the notion that web site design quality encapsulates the meaning of facilitating conditions.

Indeed, the relationship between the elements of websites and their influence on usage intentions, online behavior, and overall system satisfaction has been extensively examined during the past

decade (e.g. Dickinger & Stangl, 2013; Torkzadeh & Dhillon, 2002). Dennis, Merrilees, Jayawardhena, and Wright (2009) in their examination of factors that influence online behaviors and introduce the term web atmospherics to describe the web design elements that comprise of the primary drivers of online behavior. Jayawardhena and Wright (2009) demonstrate that web attributes influence online behavior. Aladwani and Palvia (2002) examine the key characteristics of website design quality from the user's perspective. The current research adopts Aladwani's and Palvia's (2002) definition of perceived web quality as a user's evaluation of a website's features meeting the user's needs and reflecting overall excellence of the website.

Aladwani (2006) proposes a model that examines the influence of four sub-dimensions of a website on attitudes and purchase intentions of web consumers. The first component of this model is the *technical dimension.* This refers to characteristics of the website such as security, ease of navigation, search facilities, site availability, valid links, personalization or customization, speed of page loading, interactivity, and ease of access. The second component is the *general content,* including characteristics such as content usefulness, completeness, clarity, currency, conciseness, and accuracy. The third component is the *specific content,* comprising characteristics found on the website such as contact information, general company information, product/service details, consumer policies, and customer support. The final component is the *appearance,* referring to characteristics of the website such as attractiveness, organization, proper use of fonts, colors and proper use of multimedia. Previous research has considered content quality as a conceptually different construct from website design (Dickinger & Stangl, 2013). Given the above, we postulate that these constructs are interelated. Therefore, this study considers these components are sub-dimensions of website design quality (or web quality for short), a second-order construct indicated by these components. The linkages we propose has also been advanced in information systems research (Delone & Mclean, 2003). Therefore:

H4. *Website design quality elements will be positively related to usage.*

Venkatesh et al. (2003) observed that *performance expectancy* explains why people use technology to achieve their ends, and that facilitating conditions influence such behaviors. We now advance the notion that, web design quality (facilitating conditions, as argued above) influences not only usage (behaviors) but also performance expectations. This is because if people believe that they will benefit from feel that the quality of an online banking website is high, not only will they use it the effect on usage is enhanced before their belief that it will receive benefits. Systems literature for example finds such a relationship (Davis, 1989; Igbaria, Guimaraes, & Davis, 1995; Lee & Lin, 2005; Schaupp, Fan, & Belanger, 2006); in mobile banking (Lee et al., 2012) and in Internet banking (Alsajjan & Dennis, 2010). These strands of research suggest a mediating role of performance expectancy between web design quality dimensions and internet banking usage:

H5. *Website design quality will have an indirect effect on usage through performance expectancy.*

Users' prior general computer experience affects their perceptions of effort expectancy (Gruiting & Ndubisi, 2006). Similarly, Andrews and Bianchi (2013) report a positive relationship between similar system experience and effort expectancy which applies not only to the adoption of the use of a service but also to its continuous use. Previous research indicates that expertise and proficiency influences the use of technology (Novak, Hoffman, & Yung, 2000; Lassar, Manolis, & Lassar, 2005). Experience also impacts performance expectancy (Dishaw, Brent, & Strong, 2002; Johnson & Marakas, 2000; Taylor & Todd, 1995c). Hypotheses six and seven address the expected effect of experience on both effort expectancy and performance expectancy:

H6. *Prior Experience will have a positive effect on effort expectancy.*

H7. *Prior Experience will have a positive effect on performance expectancy.*

Experience also affects users' perceptions of facilitating conditions, in that users who are less experienced perceive greater controls on their behavior (Taylor & Todd, 1995b; King & Dennis,

2003). Research on computer-human behavior reports that prior computer experience significantly affects individuals' perceptions of computers and web technologies (Liaw, 2002). The current study examines the role of prior experience (computer and internet knowledge) as an antecedent to website design quality perceptions, as the later is one of the main characteristics which can make consumers loyal to the use of a specific website (Toufaily et al., 2013). The authors of this study argue that users who are experienced in terms of computer and internet knowledge will appreciate the quality of the website design in terms of the four dimensions: technical; general and specific content; and appearance. Thus:

H8. *Prior Experience will have a positive effect on website design quality perceptions.*

Figure 1 illustrates the framework in which website design quality elements drive Internet banking behaviors, mediated by performance expectancy. Performance expectancy is positively related to social influence, experience and effort expectancy. The following section outlines the method for testing the hypotheses.

<Take in Figure 1 about here>

3. Method

In order to test the proposed UTAUT extension, the researchers collected data from current users of internet banking in the UK. Prior research (Venkatesh et al., 2003; Aladwani, 2006) formed the basis for measures, adapted where necessary to the internet banking context (Table 1). The instrument was also pilot tested with a group of university graduate students and staff to verify clarity of meaning and comprehension as well as functionality in respect to guidelines and time needed for completion.

On account of data protection restrictions, contacting users through banks was not an option. As most people are users of banking services, the researchers used convenience mall intercept sampling to draw a broad cross-section of consumers. Three city centers were targeted accounting for differing lifestyles. The final sample consisted of 216 participants. Confirmatory factor analysis (CFA) was used in order to establish discriminant and convergent validity, followed by structural equation modeling (SEM) to test hypotheses, both using SPSS Amos.

<Take in Table 1 about here>

4. Results

Descriptive Statistics

The sample comprised of females 36% and males 64%; the majority (70%) had a high level of education (bachelor degree and above); 35% were between 21 and 30 years old whereas 30% were between 31 and 40 years old. The financial profile of the respondents also varied, as their income belonged to four different income categories, equally distributed. The relatively high level of education and predominance of males in the sample reflects the profile of online banking customers in the UK and across a range of European countries (Aldás-Manzano, Lassala-Navarré, Ruiz-Mafé, & Sanz-Blas, 2012; Gounaris et al., 2010; Yousafzai & Yani-de-Soriano, 2012).

Validation of the website design quality structure

Part one of the two-part analysis aimed to validate the measures of the website quality structure with its four dimensions and introduced the website quality concept as a higher-order structure. The

second part incorporated the higher-order structure into the UTAUT, examined the measurement model fit and validity, and tested relations among variables in the structural model.

Part One: Validation of the website quality dimension structure

Prior to incorporating website quality perceptions as a multidimensional construct, the authors tested the four dimensions of the website quality by examining direct links to usage behavior; that is a conventional first-order model. The results of this test did not support the direct links, yet the four dimensions showed correlations among each other, supporting the hypothesized second-order factor approach. In the interest of space, the authors do not present the details of first-order results here. A second-order model is applicable in a case where a higher-order factor is hypothesized to account for the relations among the lower-order factors (Chen, Sousa, & West, 2005). Accordingly, analysis proceeded by testing website quality as a multidimensional construct.

First, the study tested the factorial validity of the theoretical construct, namely, website quality perceptions. This step examined the first-order CFA model design which suggests that website quality responses comprise of four factors: technical quality (TQ), general content quality (GQ), special content quality (SQ), and appearance quality (AQ). Consistent with the theory, the four factors are correlated, indicating the higher-order construct of website quality (WQ).

The analysis employed confirmatory factor analysis, using SPSS Amos, which run several times on the first order structure by applying the refinement criteria guidelines of Hair, Blake, Babin, and Tatham (2006) and Byrne (2001) [standardized regression weights (factor loadings) values should be above 0.5 and preferably above 0.7; squared multiple correlations (SMCs) should be above 0.5; standardized residual covariances should be below 2.58 or above -2.58; and items for which the

modification indices (MI) reveal high covariance between measurement errors accompanied by high regression weights between these errors' constructs are candidates for deletion]. The specification, after applying the refinement criteria mentioned above, resulted in model fit statistics indicating a good fit: $\chi 2 = 86.19$, df = 59, CFI = .986, RMSEA = .047.

The findings confirmed that the website design quality perceptions construct is best presented as a multidimensional construct consisting of technical quality (TQ), general content quality (GQ), special content quality (SQ), and appearance quality (AQ). Such result on the first-order level permits proceeding to the second stage. Introducing the higher-order construct, website design quality perceptions, requires constraining the variance of the higher order construct to a value of (for example) one or constraining one of the paths to a value of one: at this stage the first option was applied. The first run after introducing the second order factor revealed a need for modifications, as the component special content quality (SQ) had low factor loadings below 0.5, and therefore the authors excluded it from the subsequent analysis. The model fit statistics of the second-order factor model was good ($\chi 2 = 45.92$, df = 32, CFI = .991, RMSEA = .046).

Checking the identification status of the higher order portion of the model (Byrne, 2001), the higher order level of the raw model was just-identified with zero degrees of freedom. One approach to resolving the issue of just-identification in the model is to place equality constraints on particular parameters known to yield estimates that are approximately equal. "Critical ratio" (i.e. t) differences are a useful exploratory mechanism for detecting candidate parameters for the imposition of equality constraints (Byrne, 2001).

<Take in Table 2 about here>

The first order residuals related to F2 (TQ), and F4 (AQ) have estimated values that are almost identical; and the F1 (TQ) residual is also close to the other two (Table 2). The critical ratio difference values are less than 1.96, therefore the variances related to the three residuals were considered to be equal. As such, the modified higher order level model was over-identified with two degrees of freedom (Byrne, 2001). After re-specifying the model, the fit statistics were: $\chi 2 = 47.832$, df = 34 CFI = .991, RMSEA = .045, indicating a good fit. Additionally, all factor loadings were above .7 and the SMCs are above .6. Thus this model can be considered to represent the structure of Website design quality item scores. Having established an acceptable level of model fit, the next step was to introduce the higher-order factor, website design quality perceptions, into the modified UTAUT model.

Part Two: Incorporating the higher-order construct into the UTAUT research model

Measurement model

The model fit statistics for the measurement model incorporating the Website design quality perceptions higher–order structure indicate a good fit ($\chi 2 = 293.707$, df = 195, CFI = .972, RMSEA = .050). The results from the CFA indicate convergent validity (Table 3).

<Take in Table 3 here>

The square roots of the average variance extracted (AVE) of the constructs are higher than the correlations between constructs, demonstrating discriminant validity (Table 4).

<Take in Table 4 here>

Structural model

The social influence variable did not have a significant impact on the other constructs and therefore the authors excluded it from the subsequent analysis. The final structural equation model fit statistics indicate a good fit ($\chi 2 = 239.754$, df = 162, CFI = .975, RMSEA = .048) (Figure 2 and Table 5).

<Take in Figure 2 about here>

Hypothesis Testing

The coefficient for the path Effort Expectancy – Performance Expectancy was significant (H1 supported) however, the coefficient for the path Social Influence to Performance Expectancy was non-significant (H2 not supported and hence H3b not supported).

<Take in Table 5 about here>

In the absence of performance expectancy, effort expectancy was significantly associated with internet banking usage but when performance expectancy was included as an intervening variable the direct effect of effort expectancy on internet banking usage became non-significant. Thus,

performance expectancy had a mediating role on the effect of effort expectancy on internet banking usage (H3a supported). On the other hand, the direct relationship between website design quality perceptions and internet banking usage still remained even when performance expectancy was included as an intervening variable (H4 and H5 supported). Experience had a significant impact on effort expectancy (H6 supported), and website design quality perceptions (H8 supported). In the absence of effort expectancy, experience had a significant impact on website design quality perceptions but when effort expectancy acted as an intervening variable, the direct effect of experience on website design quality perceptions became non-significant. Thus, effort expectancy had a mediating role on the effect of performance expectancy on website design quality perceptions. In line with H7, performance expectancy has an effect on website design quality perceptions but this effect is indirect.

The current extended model explains 57% of reported internet usage behavior (Table 4) (adjusted R^2 .55). This percentage compares with the UTAUT reported by Venkatesh et al. (2003) to have an explanatory power of 70% but that was only of intentions to use (rather than actual use). The Technology Acceptance Model is reported to explain only 40% of intentions to use and only 30% of actual use (Burton-Jones & Hubona, 2005). Therefore, the explanatory power of the extension performs well in modeling actual usage compared with earlier studies.

5. Discussion

This study examines how web design quality aspects influence consumer behavior and elaborates on the UTAUT by exploring the influence of website design quality perceptions on online behavior. The paper reveals significant relationships between the constructs in question and explores the nature of the Website design quality construct.

The website design quality structure: The testing and validation of Website design quality perceptions as a multidimensional construct using CFA produced specifications that retained a good representation for each of the four dimensions (three items per variable) and good model fit indices. Thus, Website design quality is best represented by a multidimensional structure rather than a uni-dimensional construct as previous literature suggests (Dickinger & Stangl, 2013). The elements of website design quality dimensions that respondents highly rated are: ease of navigation, access and loading time (technical quality); content usefulness, competence, clarity and accuracy (general content quality); and attractiveness, organization and readability (appearance quality). These findings confirm prior internet banking research (Jun & Cai, 2001; Pikkarainen, Pikkarainen, Karjaluoto, & Pahnila, 2004).

Social Influences – Performance Expectancy: the impact of social influences on performance expectancy was non-significant. This result is consistent with previous research that indicates that the impact of social influence tends to vanish under voluntary usage conditions and users may depend on their own beliefs rather than on others' opinions or may use their direct experience with a system to form their intentions or perceptions of usefulness (Morris & Venkatesh, 2000; Taylor & Todd, 1995b; Venkatesh & Davis, 2000; Venkatesh et al., 2003). Karahanna and Straub (1999) argued that social norms have a stronger influence of the behavior of inexperienced potential system adopters compared to their current experienced counterparts, such as the experienced individuals using internet banking under discretionary usage conditions in this study.

Comparison of Findings with the TAM: the significant path effort expectancy – performance expectancy is equivalent to perceived ease of use – perceived usefulness in TAM. Prior research has indicated the impact of perceived ease of use on behavioral intention and usage to be inconsistent. This inconsistency has been variously ascribed to the degree of complexity of the systems and the role of experience as a moderator (Igbaria, Zinatelli, Cragg, & Cavaye, 1997; Sun & Zhang, 2006). Specifically, perceived ease of use has an influence on usage or behavioral intention when the

technology is more complex and individuals are less experienced. In the current study, respondents are actual users; hence they have system experience. Prior research has also shown perceived ease of use to be a significant antecedent of perceived usefulness that can affect acceptance of systems indirectly through perceived usefulness (Davis, Bagozzi, & Warshaw, 1992). Literature also reports perceived usefulness as a strong, maybe even the strongest, determinant of usage. In the current study, the performance expectancy – internet banking usage link is significant and performance expectancy has the highest standardized direct effect (.513) on usage behavior. The current study found support for the mediating role of performance expectancy with respect to effort expectancy – internet banking usage relationship while the mediating role of performance expectancy between social intention and internet banking usage was not supported as social intention – performance expectancy (H2) was non-significant.

Impact of Website Design Quality: in the current study, the website design quality dimension replaced the technological resources of facilitating conditions from Venkatesh's et al.'s (2003) UTAUT model. The results demonstrate that website design quality perceptions have both a direct and indirect impact on usage behavior. The standardized direct impact website design quality – internet banking usage is .265 while website design quality – performance expectancy is .331. The standardized total effect of website design quality – internet banking usage (.536) is higher than that of performance expectancy – internet banking usage (.513), indicating that website design quality exerts a greater impact on usage behavior than does performance expectancy. These results confirm findings from previous research: website design quality (referred to as information system quality) is reported to impact perceived usefulness (Ahn, Ryu, & Han, 2007; Lin & Lu, 2000; Yi & Jiang, 2007). The results are consistent with prior internet banking research: website design quality features such as access, navigation, and speed are determinants of internet banking adoption as well as perceived usefulness (Jaruwachirathanakul & Fink, 2005); perceived usefulness and information on online banking are the main factors influencing online banking acceptance (Pikkarainen et al., 2004).

The Role of Experience: prior research has established the importance of actual behavior experience in the development of beliefs such as perceived ease of use (Davis et al., 1989; Venkatesh & Davis, 1996). With increasing computer and internet knowledge experience, individuals are expected to fine-tune their system-specific perceived ease of use to reflect their interaction with the system or, as in this case, online access in general (Venkatesh, 2000). In the current study, experience has a direct impact on effort expectancy whereas its impact on performance expectancy was indirect through effort expectancy. The mediating role of effort expectancy is logical: individuals' past computing and internet knowledge enables them to make judgments about sites' effort expectancies and hence sites' performance expectancies. Results from information system studies generally indicate a positive relationship between information system experience and ease of use and usefulness (Nysveen & Pedersen, 2004). The impact of prior experience on website design quality perception also confirms previous information systems research that reports experience as an antecedent to perceived behavioral control (TPB model: Taylor & Todd 1995a), similar to facilitating conditions (UTAUT model: Venkatesh et al., 2003; Venkatesh et al., 2008).

To summarize, the results of this study demonstrate that website design quality perceptions constitute a multidimensional concept. Website design quality has an impact (directly and indirectly) on online usage behavior and its total impact is greater than that of any other construct in the model. The results also suggest that the previously established links among TAM's constructs are also valid among UTAUT constructs. As such, this work adds to the understanding of technology adoption within theories of technology acceptance research and in discretionary online behavior contexts. The extended model provides an avenue to conceptualize how various web design quality choices might influence overall website design quality perceptions through the attributes of the design quality dimensions. The model provides an approach for linking website design quality perceptions to their ultimate effects on consumer usage behavior.

6. Conclusion

This study is the first to extend the UTAUT by the addition of website design quality as a second-order variable. As such, this paper makes a number of theoretical and managerial contributions.

Contribution to Theory

The theoretical framework tested raises several challenging implications. Academically, the results lend further strength to established models. Specifically, the first contribution lies in the validation of website design quality as a higher order structure, whereas Aladwani and Palvia (2002) developed, tested and validated their dimensions as a first-order structure and Dickinger and Stangl (2013) treated website design quality as a uni-dimensional construct. In the current study, as expected, the interrelationships among the dimensions represent an overall evaluation that might be described as a halo-effect.

Second, the extended UTAUT model incorporating the website design quality higher-order structure accounts for the quality characteristics of online presence that induce online behavior. This research constitutes evidence that the aggregated model can be effective in accounting for usage behavior, especially within the online context and the proposed model extension. The research also provides a theoretical understanding of how perceptions of the website design quality dimensions (e.g., ease of navigation, access and loading time; content usefulness, completeness and clarity; and appearance attractiveness, organization and readability) are considered important features of a bank's website design among users in the UK. Additionally, the research demonstrates the role of Website

design quality perceptions and their impact on the beliefs structure in the UTAUT model on one hand, and system usage behavior on the other hand.

From the implementation analysis perspective, the current work validates the UTAUT measures in addition to supporting the interrelationships among the key constructs in technology acceptance research. The study contributes to theory by providing a new perspective to the UTAUT by demonstrating that previously-established relationships among the TAMs constructs are also valid between the key constructs in the UTAUT within the context examined, making a new contribution to understanding with respect to the Unified Theory of Acceptance and Use of Technology.

Managerial contribution

Managers and website designers can benefit from the findings by reinforcing users' decisions; maintaining the quality of highly rated features of the website design quality dimensions; communicating these features to potential users; and making their web applications and services more engaging and commercially viable. As the dimensions of website design quality are interrelated, the overall evaluation may be influenced by a halo-effect. The implication is that improvements to the design appearance of a website should lead to the enhancement of the overall evaluation and greater usage intention.

The model structure and the scale for website design quality have a variety of potential managerial applications that can facilitate a quality program through a two specific methods. First, the dimensional format of the instrument allows an organization to assess its level of website design quality in decomposed detail, as well as holistically. Thus, the relative importance of the four dimensions of website design quality can be determined and the results used to focus on the more salient elements. Second, organizations can use the instrument on an ongoing basis to potentially track customer perceptions of website design quality and compare it to that of its competitors.

Decision makers within the financial sector can visualize the role of beliefs in forming actual usage behavior. The findings demonstrate that experienced users rely on their perceptions of performance expectancy and website design quality to make decisions about system usage. In this study, the benefits accumulated in perceptions of performance expectancy, such as speed, time and efficiency, are highly valued by users; second only to their perceptions of web design quality. The implication here for practitioners is to build on these features and merits in attracting non-users and reinforces the usage decisions of actual users by maintaining and improving such characteristics of efficiency. While not examined in this study, the service profit chain (Heskett, Sasser, & Schlesinger, 1997) suggests that customer encounters have an influence on customer satisfaction, service quality and loyalty to both employees and organizations. Thus firms may be able to contribute to the achievement of organizational objectives through careful and creative management of website design quality, which has a significant influence on consumer behaviors.

7. Limitations and further research

The findings are subject to limitations in common with similar cross-section survey studies. First, the results cannot prove causality and therefore the authors recommend a future longitudinal study. Second, the research was conducted in a single industry and results are limited to the specific domain of internet banking. While the single domain has the obvious benefit of controlling for cross-industry variation, caution must be employed if attempting to generalize these results to other industries, other forms of technologies or in other countries.

These results hold a number of implications for future research. First, this research was successful in validating the measures and higher order structure of the website design quality perceptions construct. However, the need persists for further research to cross validate these findings in other contexts. Second, the extended UTAUT model might be applied to other online behaviors such as e-

commerce or e-shopping. Third, given that most current research is still focused on TAM, the UTAUT model as a parsimonious, aggregated form of eight dominant technology acceptance models may well form the vehicle for a change of direction. The authors encourage researchers to investigate the effects of website design quality aspects as antecedents to performance expectancy, effort expectancy and related usage behavior using the current research model. Previous information systems research examined the impact of system and information quality on system use and user satisfaction. Nevertheless, the dimensions of website design quality examined in this current study are broader and more comprehensive than previously reported, opening up opportunities for future research. Last but not least, further research into the consequences of website design quality should thus include the direct replication of the presented structural model in other industries, employing longitudinal data collection if possible.

References

Ahn, T., Ryu, S., & Han, I. (2007). The impact of web quality and playfulness on user acceptance of online retailing. *Information and Management*, *44*(3), 263-275.

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179-211.

Aladwani, A., & Palvia, P. (2002). Developing and validating an instrument for measuring user-perceived web quality. *Information and Management*, *39*(6), 467-476.

Aladwani, A. (2006). An empirical test of the link between web site quality and forward enterprise integration with web customers. *Business Process Management Journal*, *12*(2), 178-190.

Aldás-Manzano, J., Lassala-Navarré, C., Ruiz-Mafé, C., & Sanz-Blas, S. (2009). The role of consumer innovativeness and perceived risk in online banking usage. *International Journal of Bank Marketing*, *27*(1), 53-75.

Alsajjan, B., & Dennis, C. (2010). Internet banking acceptance model: a cross-market examination. *Journal of Business Research*, *63*(9), 957-963.

Andrews, L., & Bianchi, C. (2013). Consumer internet purchasing behavior in Chile. *Journal of Business Research*, *66*(10), 1791-1799.

Bauer, H., Falk, T., & Hammerschmidt, M. (2006). eTransQual: a transaction process-based approach for capturing service quality in online shopping. *Journal of Business Research*, *59*(7), 866-875.

Bauer, H., Hammerschmidt, M., & Falk, T. (2005). Measuring the quality of e-banking portals. *International Journal of Bank Marketing*, *23*(2), 153-175.

Blake, B., Neuendorf, K., & Valdiserri, C. (2005). Tailoring new websites to appeal to those most likely to shop online. *Technovation, 25*(10), 1205-1214.

Brown, S. A., & Venkatesh, V. (2005). Model of adoption of technology in the household: a baseline model test and extension incorporating household life cycle. *MIS Quarterly*, *29*(4), 399-426.

Burton-Jones, A., & Hubona, G. S. (2005). Individual differences and usage behavior: revisiting a technology acceptance model assumption. *Database for Advances in Information Systems*, *36*(2), 58-77.

Byrne, B. M. (2001). *Structural Equation Modeling with AMOS*. (1st ed.). New Jersey: Lawrence Erlbaum Associates Inc, (Chapters 3-8).

Chen, F., Sousa, K., & West, S. (2005). Teacher's corner: testing measurement invariance of second-order factor models. *Structural Equation Modeling: A Multidisciplinary Journal*, *12*(3), 471-492.

Choi, H., Kim, Y., & Kim, J. (2011). Driving factors of post adoption behavior in mobile data services. *Journal of Business Research*, *64*(11), 1212-1217.

Cortinas, M., Chocarro, R., & Villanueva, L. (2010). Understanding multi-channel banking customers. *Journal of Business Research, 63*(11), 1215-1221.

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

Davis, F., Bagozzi, R., & Warshaw, P. (1992). Extrinsic and intrinsic motivation to use computers in the workplace. *Journal of Applied Social Psychology*, *22*(14), 1111-1132.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, *13*(3), 319-340.

DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: a ten-year update. *Journal of Management Information Systems*, *19*(4), 9-30.

Dennis, C., Merrilees, B., Jayawardhena, C., & Wright, L. (2009). E-consumer behavior. *European Journal of Marketing*, *43*(9/10), 1121-1139.

Dickinger, A., & Stangl, B. (2013). Website performance and behavioral consequences: a formative measurement approach. *Journal of Business Research, 66*(6), 771-777.

Dishaw, M. T., Brent, B., & Strong, D. M. (2002). Extending the task-technology fit model with self-efficacy constructs. *Paper published in the proceedings of the eighth AMCIS - Americas Conference on Information Systems (pp.1021-1027), Dallas, August 2002.*

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Floh, A., & Treiblmaier, H. (2006). What keeps the e-banking customers loyal? A multi-group analysis of the moderating role of customer characteristics on e-loyalty in the finance service industry. *Journal of Electronic Commerce Research, 7*(2), 97-110.

Floh, A., Zauner, A., Koller, M., & Rusch, T. (2013). Customer segmentation using unobserved heterogeneity in the perceived-value-loyalty-intentions link. *Journal of Business Research*, forthcoming.

Gan, C., Clemes, M., Limsombunchai, V., & Weng, A. (2006). A logit analysis of electronic banking in New Zealand. *International Journal of Bank Marketing*, *24*(6), 360-383.

Gounaris, S., Koritos, C., & Vassilikopoulou, K. (2010). Person–place congruency in the internet banking context. *Journal of Business Research*, *63*(9/10), 943-949.

Guriting, P., & Ndubisi, N. (2006). Borneo online banking: evaluating consumer perceptions and behavioral intention. *Management Research News*, *29*(1/2), 6-15.

Hair, J., Blake, W., Babin, B., & Tatham, R. (2006). *Multivariate Data Analysis*. (6th ed.). New Jersey: Pearson Education, (Chapter 12).

Ha, S., & Stoel, L. (2009). Consumer e-shopping acceptance: antecedents in a technology acceptance model. *Journal of Business Research, 62*(5), 565-571.

Heskett, J. L., Sasser, W. E., Jr., & Schlesinger, L. A. (1997). *The service profit chain: how leading companies link profit and growth to loyalty, satisfaction, and value*. New York: Free Press.

Igbaria, M., Guimaraes, T., & Davis, G. (1995). Testing the determinants of microcomputers usage via a structural equation model. *Journal of Management Information Systems, 11*(4), 87-114.

Igbaria, M., Zinatelli, N., Cragg, P., & Cavaye, A. (1997). Personal computing acceptance factors in small firms: a structural equation model. *MIS Quarterly, 21*(3), 279-305.

Jaruwachirathanakul, B., & Fink, D. (2005). Internet banking adoption strategies for a developing country: the case of Thailand. *Internet Research, 15*(3), 295-311.

Jayawardhena, C., & Wright, L. T. (2009). An empirical investigation into e-shopping excitement: antecedents and effects. *European Journal of Marketing, 43*(9/10), 1171-1187.

Jiang, P. (2009). Consumer adoption of mobile Internet services: an exploratory study. *Journal of Production Management, 15*(3), 418–454.

Johnson, R., & Marakas, G. (2000). Research report: the role of behavioral modeling in computer skills acquisition - toward refinement of the model. *Information Systems Research, 11*(4), 402-417.

Jun, M., & Cai, S. (2001). The key determinant of internet banking service quality: a content analysis. *International Journal of Bank Marketing, 19*(7), 279-291.

Karahanna, E., & Straub, D. (1999). The psychological origins of perceived usefulness and ease of use. *Information and Management, 35*(4), 237-250.

Kim, S. H., & Park, H. J. (2011). Effects of social influence on consumers' voluntary adoption of innovations prompted by others. *Journal of Business Research, 64*(11), 1190-1194.

King, T., & Dennis, C. (2003). Interviews of de-shopping behaviour: an analysis of theory of planned behaviour. *International Journal of Retail and Distribution Management, 31*(3), 153-163.

Kwon, O. B., Kim, C. B., & Lee E. J. (2002). Impact of website information design factors on consumer ratings of web-based auction sites. *Behaviour & Information Technology, 21*(6), 387-402.

Lassar, W., Manolis, C., & Lassar, S. (2005). The relationship between consumer innovativeness, personal characteristics, and online banking adoption. *International Journal of Bank Marketing, 23*(2), 176-199.

Lee, G., & Lin, H. (2005). Customer perception of e-service quality in online shopping. *International Journal of Retail and Distribution Management, 3*(2), 161-176.

Lee, Y. K., Park, J. H., Chung, N., & Blakeney, A. (2012). A unified perspective on the factors influencing usage intention toward mobile financial services. Journal of Business Research, *65*(11), 1590-1599.

Liaw, S. S. (2002). An internet survey for perceptions of computers and the world wide web: relationship, prediction, and difference. *Computers in Human Behavior, 18*(1), 17-35.

Lin, J., & Lu, H. (2000). Towards an understanding of the behavioral intention to use a web site. *International Journal of Information Management, 20*(3), 197-208.

McKechnie. S., Winklhofer. H., & Ennew, C. (2006). Applying the technology acceptance model to online retailing of financial services. *International Journal of Retail and Distribution Management, 34*(4/5), 388-410.

Morris, M., & Venkatesh, V. (2000). Age differences in technology adoption decisions: implications for a changing work force. *Personnel psychology, 53*(2), 375-403.

Moss, G., Gunn, R. & Heller, J. (2006). Some men like it black, some women like it pink: consumer implications of differences in male and female website design. *Journal of Consumer Behaviour, 5*(4), 328-341.

Novak, T., Hoffman, D., & Yung, Y. (2000). Measuring the consumer experience in online environment: a structural modeling approach. *Marketing Science, 19*(1), 22-42.

Nysveen, H., & Pedersen, P. (2004). An exploratory study of customers' perception of company web sites offering various interactive applications: moderating effects of customers' internet experience. *Decision Support Systems, 37*(1), 137-150.

Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahnila, S. (2004). Consumer acceptance of online banking: an extension of the technology acceptance model. *Internet Research, 14*(3), 224-235.

Proenca, J. F., & Rodriguez, M. A. (2011). A comparison of users and non-users of banking self-service technology in Portugal. *Managing Service Quality, 21*(2), 192-210.

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

Schaupp, L. C., Fan, W., & Belanger, F. (2006). Determining success for different website goal. *Paper published in the proceeding of the 39th Annual Hawaii International Conference on System Sciences (p. 107.b), Kauai, January 2006.*

Smith, R., Deitz, G., Royne, M. B., Hansen, J. D., Grünhagen, M., & Witte, C. (2013). Cross-cultural examination of online shopping behavior: A comparison of Norway, Germany, and the United States. *Journal of Business Research*. *66*(3), 328-335.

Sun, H., & Zhang, P. (2006). The role of moderating factors in user technology acceptance. *International Journal of Human-Computer Studies, 64*(2), 53-78.

Taylor, S., & Todd, P. (1995a). Decomposition and crossover effects in the theory of planned behavior: a study of consumer adoption intentions. *International Journal of Research in Marketing, 12*(2), 137-155.

Taylor, S., & Todd, P. (1995b). Understanding information technology usage: a test of competing models. *Information Systems Research, 6*(2), 144-176.

Taylor, S., & Todd, P. A. (1995c). Assessing IT usage: the role of prior experience. *MIS Quarterly, 19*(4), 561-570.

Thongpapanl, N., & Ashraf, A. (2011). Enhancing online performance through website content and personalization. *Journal of Computer Information Systems, 52*(1), 3-13.

Torkzadeh, G., & Dhillon, G. (2002). Measuring factors that influence the success of internet commerce. *Information Systems Research, 13*(2), 187-204.

Toufaily, E., Ricard, L., & Perrien, J. (2013). Customer loyalty to a commercial website. Descriptive meta-analysis of the empirical literature and proposal of an integrative model. *Journal of Business Research, 66*(9), 1436-1447.

Venkatesh, V. (2000). Determinants of perceived ease of use: integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information Systems Research, 11*(4), 342-365.

Venkatesh, V., & Davis, F. D. (1996). A model of the antecedents of perceived ease of use: development and test. *Decision Sciences, 27*(3), 451-481.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: four longitudinal field studies. *Management Science, 46*(2), 186-204.

Venkatesh, V., Brown, S., Maruping, L., & Bala, H. (2008). Predicting different conceptualizations of system use: the competing roles of behavioral intention, facilitating conditions, and behavioral expectations. *MIS Quarterly*, *32*(3), 483-502.

Venkatesh, V., Morris, M., Davis, G., & Davis, F. (2003). User acceptance of information technology: toward a unified view. *MIS Quarterly*, *27*(3), 425-478.

Vila, N., & Kuster, I. (2011). Consumer feelings and behaviours towards well designed websites, *Information Management*, *48*(4/5), 166-177.

Yi, C., & Jiang, Z. (2007). The antecedents of online consumers' perceived usefulness of website: a protocol analysis approach. In J. A. Jacko (Eds.), *Human-computer interaction-HCI applications and services* (pp. 142-149). Heidelberg, Berlin: Springer.

Yousafzai, S., & Yani-de-Soriano, M. (2012). Understanding customer-specific factors underpinning internet banking adoption. *International Journal of Bank Marketing*, *30*(1): 60-81.

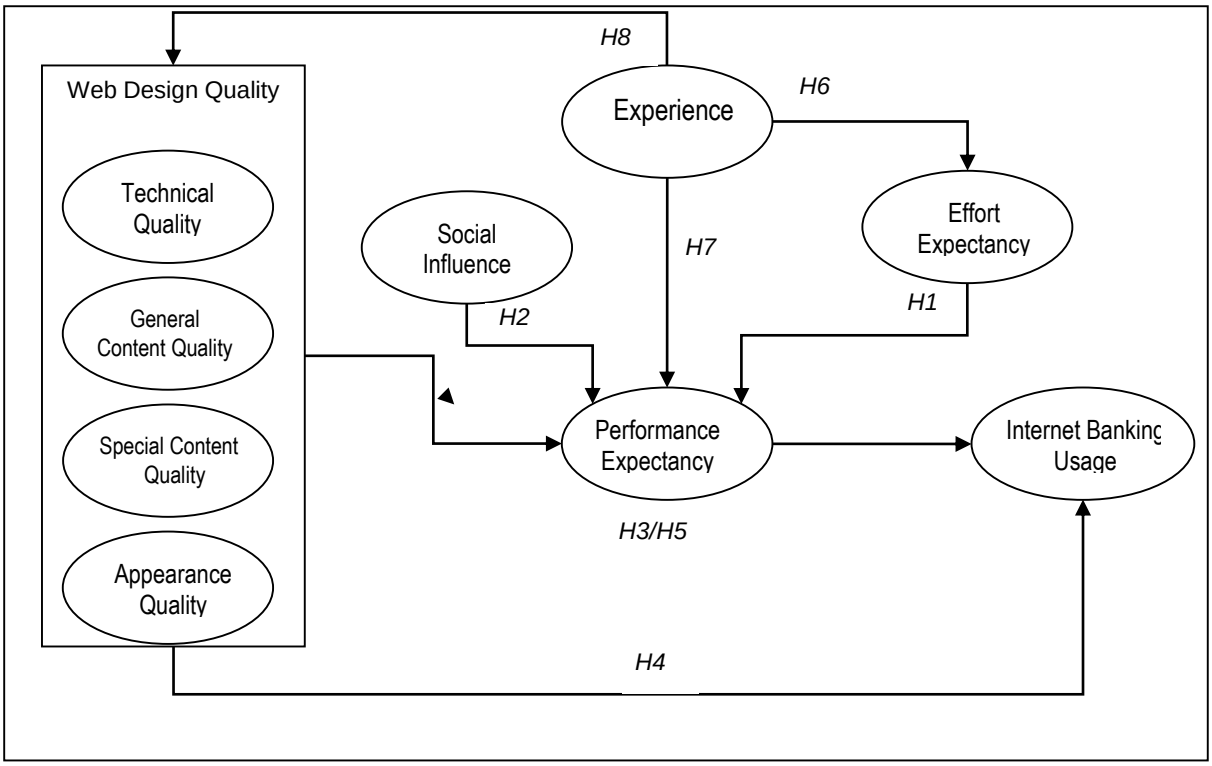

Figure 1: Conceptual model

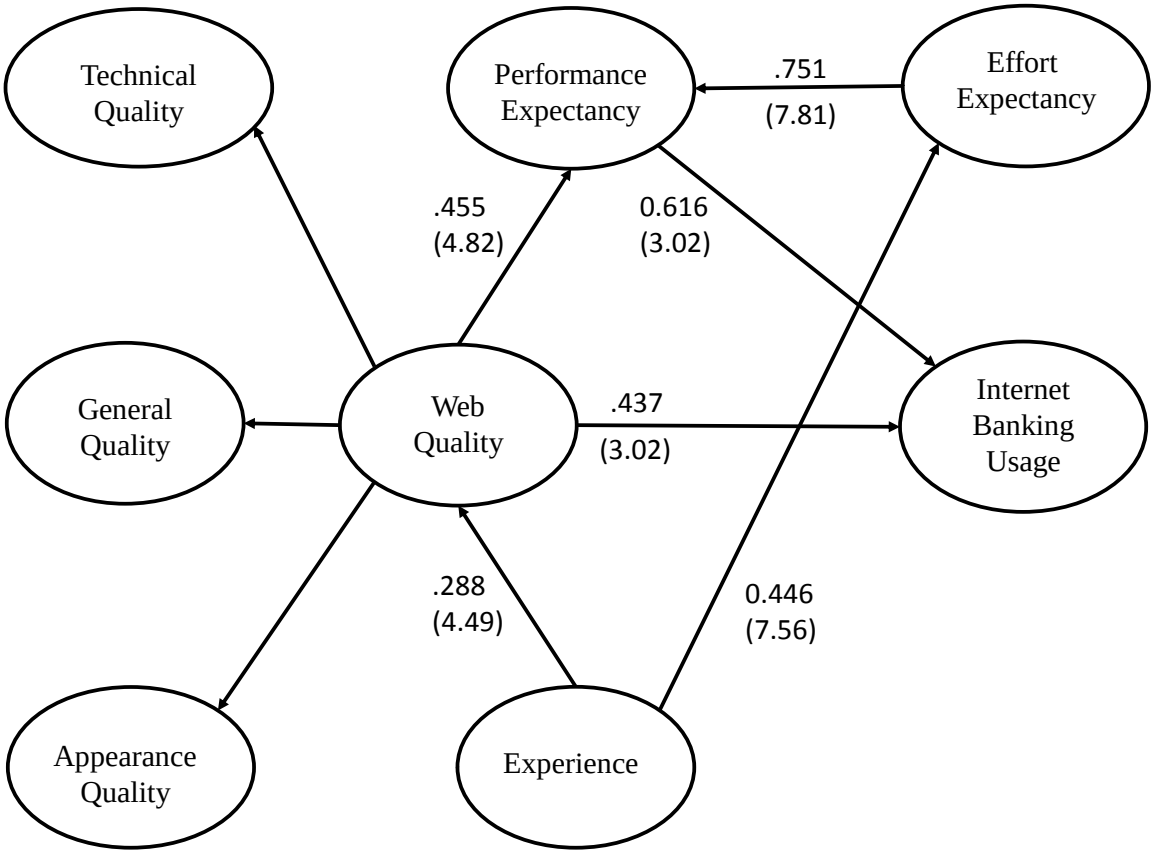

Figure 2: Structural Model

Standardized coefficients (t-value)

Method: ML; $\chi 2 = 239.8$, df = 162, $\chi 2/df = 4.1$, CFI = .975, RMSEA = .048

Variable	Definition	Items
Performance Expectancy (Venkatesh et al., 2003)	The degree to which an individual believes that using internet banking will help him/her attain gains in performing banking tasks through this channel.	○ I find internet banking useful ○ Using internet banking enables me to accomplish banking tasks more quickly ○ Using internet banking increases the effective use of my time in handling my banking tasks ○ Using internet banking increases the quality of my banking services output at minimal efforts.
Effort Expectancy (Venkatesh et al., 2003)	The degree of ease associated with the use of internet banking.	○ My interaction with internet banking is clear and understandable ○ I am skilful at using internet banking ○ Learning to use the internet banking system is easy for me ○ I find it easy to get the internet banking system to do what I want it to do
Social Influences (Venkatesh et al., 2003)	The degree to which an individual perceives that important others believe he/she should use internet banking and also measures bank staff support in usage of the internet channel	○ People who are important to me think that I should use internet banking facilities ○ People who influence my behaviour think I should use internet banking. ○ The bank staffs are helpful in the use of the internet banking system. ○ The branch encourages the use of internet channel
Technical Quality (TQ) (Aladwani, 2006)	The technical characteristics of the website such as security, ease of navigation, search facilities, site availability, valid links, personalization or customization, interactivity, and ease of access	The Bank web site: (TQ 1-8) ○ looks secure for carrying out transactions ○ looks easy to navigate ○ has adequate search facilities ○ has valid links (hyperlinks) ○ can be personalized or customized to meet my needs ○ has many interactive features (e.g. online application for bank services) ○ is easy to access ○ pages load quickly
General Content Quality (GQ) (Aladwani, 2006)	The characteristics of the bank website content in general such as content usefulness, completeness, clarity, currency, conciseness, and accuracy.	The content of the bank's website is (GQ 1-6) ○ useful ○ complete ○ clear ○ current ○ concise ○ accurate
Special Content Quality (SQ) (Aladwani, 2006)	The specific content characteristics found on a website such as finding contact information, a firm's general information, product/service details, consumer policies, and customer support	On the bank's website I can find: (SQ 1-5) ○ contact information (e.g. email addresses, phone numbers, etc.) ○ general bank information (e.g. goals, owners) ○ details about their products and services ○ information related to customer policies (e.g. privacy and dispute details) ○ information related to customer services
Appearance Quality (AQ) (Aladwani, 2006)	The characteristics of the website appearance such as attractiveness, organization, proper use of font, colors and proper use of multimedia.	The bank website: (AQ 1-5) ○ looks attractive ○ looks organized ○ is easy to read ○ uses appropriate colors ○ uses multimedia features properly

Table 1: Operational Definitions of the Variables

	Estimates	**Critical Ratios (CR)**
Residual 1 (F1)	.169	5.078
Residual 2 (F2)	.114	3.646
Residual 3 (F4)	.112	3.943

Table 2: Second-Order Factor Variance: Estimates, CRs and Labels for Critical Ratios of Differences.

	TGQ	TAQ	TTQ	TPE	TEE	TSI	EXP	IB usage
GQ1	**.85**							
GQ2	**.85**							
GQ3	**.88**							
GQ6	**.74**							
AQ1		**.83**						
AQ2		**.90**						
AQ3		**.86**						
TQ8			**.88**					
TQ7			**.86**					
TQ2			**.79**					
PE1				**.86**				
PE2				**.94**				
PE3				**.89**				
EE2					**.89**			
EE3					**.89**			
EE4					**.81**			
SI1						**.87**		
SI2						**.97**		
I.K							**.97**	
C.K							**.90**	
U / W								**.63**
U/yrs								**.86**
AVE	**70.0%**	**74.7%**	**71.7%**	**80.6%**	**74.9%**	**84.5%**	**87.1%**	**56.9%**
Reliability	**.90**	**.89**	**.88**	**.92**	**.90**	**R=.84**	**R=.93**	**R=.54**

TGQ = TotalGQ etc. EXP = Experience, AVE: Average Variance Extracted.

Table 3: Standardized Factor Loadings (Regression Weights), Variance Extracted (SMC's), and Reliability Estimates.

	TSI	TEE	TPE	Exp	IB usage	WQ	TAQ	TGQ	TTQ
TSI	**.85**								
TEE	0.06	**.75**							
TPE	0.06	0.52	**.81**						
Exp	0.06	0.39	0.24	**.87**					
IB usage	0.10	0.40	0.48	0.30	**.57**				
WQ	0.19	0.28	0.39	0.10	0.37	**.74**			
TAQ	0.14	0.20	0.28	0.08	0.28	0.734	**.75**		
TGQ	0.14	0.20	0.28	0.08	0.28	0.73	0.54	**.70**	
TTQ	0.14	0.20	0.28	0.08	0.28	0.73	0.54	0.54	**.72**

Notes: The Average Variances Extracted are in the diagonal. The values below the diagonal are the squared correlations between the constructs.

Table 4. Squared Correlation Matrix

Hypothesis Number	Paths			Coefficient	S.E.	CR	P	Result
H8	Exp	→	WQ	.288	.064	4.487	***	supported
H6	Exp	→	TEE	.446	.059	7.564	***	supported
H1	TEE	→	TPE	.751	.096	7.812	***	supported
H5	WQ	→	TPE	.455	.094	4.821	***	supported
H4	WQ	→	IB usage	.437	.145	3.021	.003	supported
H3	TPE	→	IB usage	.616	.103	5.966	***	supported

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

Table 5: Structural Path Estimates