

## Adoption of Internet Banking Transactions: The Role of Website Features

### **Abstract**

Information technology adoption research typically views adoption as a function of individual attitudes, social influence, perception of self-efficacy and facilitating factors, neglecting the features of the technology itself. This paper introduces the construct "website features" as potentially influential in online technology adoption, and specifically Internet banking. It is argued that the effective features and their impacts differ along the stages of the customer decision process and a theoretical framework is developed for evaluating website design in relation to these stages. Incorporating this construct into existing models will advance e-marketing theory and assist website designers in enhancing website effectiveness.

**Keywords:** Consumer behaviour, E-marketing, Internet banking

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## 1. Introduction

This paper examines how perceived website design features may contribute in adoption of Internet banking technology, and offers a conceptual framework for the proposed construct and its incorporation in technology acceptance models.

Due to a lack of theories in the information technology (IT) domain, including Internet banking, technology adoption researchers have applied theories developed in other areas, such as social psychology. Examples include the Theory of Reasoned Action TRA (Fishbein and Ajzen, 1975), the Theory of Planned Behaviour TPB (Ajzen, 1991), the Innovation Diffusion Theory IDT (Rogers, 1995), the Technology Acceptance Model TAM (Davis, 1989) and the Decomposed Theory of Planned Behaviour DTPB (Taylor and Todd, 1995). TRA shows behaviour to be governed by intentions, which in turn are a function of individuals' positive or negative attitudes and subjective norms (the influence of others), but ignores situational factors that may influence the strength of the attitude-intention-behaviour relationship (Foxall, 1997). TPB added the idea of behavioural control, reflecting the individual's perception of the difficulty or ease of performing a particular behaviour. IDT highlights the importance of the way the innovation is perceived, for example, perceived advantage of the innovation and compatibility with the individual's experience, values and needs. TAM, like TRA, sees behaviour as the outcome of attitudes and intentions, and like IDT, considers perceptions of the technology, specifically its usefulness and ease of use, as influential. Finally, the DTPB breaks down attitude (to incorporate perceptions of the usefulness, compatibility and ease of use of the innovation), subjective norms (identifying different influence groups) and behavioural control (to include internal and external facilitating factors). Application in previous studies of technology acceptance and Internet banking in particular (see: Jaruwachirathanakul and Fink, 2005; Md Nor, 2005; Yousafzai, 2005; Ravi et al., 2007) provides evidence of the usefulness of constructs from all five models.

However, the mentioned theories may not encompass all the factors that could influence technology adoption, because there is an obvious omission in technology-adoption situations; they neglect the characteristics of the technology itself. The TAM includes perceived usefulness of the technology, while DTPB considers technology within decomposed behavioural control; nevertheless, none of the models specify which aspects of technology are influential, or in what way. It seems likely that specific features of a technology may influence the way it is perceived and, hence, the formation of intentions and behaviour toward it. Support for such a view can be found in the Task-Technology Fit theory TTF (Goodhue and Thompson, 1995), which suggests that user evaluations of technology reflect value provided by characteristics of the system for specific purposes (D'Ambra and Wilson, 2004). A good fit leads to positive evaluation and higher utilization (Chae, 2005). In this paper, accordingly, the construct "website features" is introduced and an argument made for the influence of perceptions of such features on adoption of new technology in general and Internet banking in particular. Further, the construct is developed theoretically in relation to consumer needs at different stages of the purchasing process.

## 2. Website Features

Website features have been identified as a critical construct for the success of e-commerce (Siekpe, 2003; Ndubisi and Sinti, 2006). Research shows that they positively influence consumers' intention to engage in online activities. For example, when consumers initially access websites, perceptions of system characteristics encourage or discourage consumers' willingness to engage in performing transactions (Shih, 2004). Website interface characteristics such as information format, animation, and presentation mode are significant in attracting customers' attention (Hong, 2002). Cues such as colours, images, and sounds can be used to generate favourable attitudes (Moore et al., 2005). Website images have a significant effect on purchasing intention (Chen and Lee, 2005), while background pictures and colours affect consumer product choice (Mandel and Johnson, 2002). Rattanawicha and Esichaikul (2005) identified 46 website design features that have significant effects on customer trust in an Internet environment, while Fong (2004) affirmed that building attractive websites will motivate and satisfy customer needs and will be reflected in their loyalty. This relationship between website content and customer loyalty is stronger for information-oriented websites than for transaction-oriented websites (Mithas et al. 2007).

Other studies have examined the impact of specific website features. For example, the effects of Frequently Asked Questions (FAQ), feedback forms and search engines in improving usability of websites have been reported (Kumar et al., 2005). Other scholars (e.g. Siekpe, 2003; Ndubisi and Sinti, 2006) have demonstrated the impact of features such as interface variables, interactivity, efficiency and speed of upload and download. Studies of website characteristics have identified two broad categories: those that contribute to attractiveness, pleasure or fun (termed hedonic features) and those that contribute to usefulness or ease of use (termed utilitarian features). Several studies have shown that the latter are more important to users (Gao, 2002; Ndubisi and Sinti, 2006).

A number of studies have been conducted specifically in relation to Internet banking. Jaruwachirathanakul and Fink (2005) found that features of the bank's website are important for intention to adopt Internet banking, since they define the service delivery, facilitate transactions help ease customer concerns and increase their confidence to make use of the service. Shih and Fang (2006) found that network quality attributes including information quality, transaction speed, user-friendliness and security play significant roles in relation to the intention to adopt Internet banking. The particular importance of utilitarian features is highlighted by Kuisma et al. (2007), who observe that unclear procedural information, perceived responsibility for possible mistakes, and lack of clear informative instructions on banking websites tend to deter customers from adopting Internet banking. Moreover, even a well-designed Internet banking website is insufficient if it fails to match consumer needs (Song and Zahedi, 2005).

All the evidence, then, suggests that effective website design is essential for Internet banking websites, to capture customers' attention, to support their inclination to perform transactions, to assure them of the usefulness, ease, and effectiveness of conducting their financial affairs via the Internet, and to enhance their trust in this method of doing business. In order to facilitate the application of the additional construct of the impact of perceived website design characteristics on Internet banking adoption, it will be very useful to adopt also a clear model of customer behaviour, to enable website features to be related more accurately to aspects of customers' behaviour. Such a model is provided by the five stages of the decision-making process, which will be discussed next.

### **3. The Consumer's Decision-Making Process.**

There is considerable consensus on the consumer's decision-making process in traditional marketing (e.g. Tsiros and Mittal 2000; Harrison, 2003; Gurley et al., 2005). Inherent in this consensus is the recognition that there are five stages that consumers consider, consciously and unconsciously, when making their purchasing decisions, each of which is associated with a specific reaction. These five stages are need recognition, information search, information evaluation, the purchase decision, and post-purchase behaviour (Engel et al., 1995; Solomon et al., 2002). These stages have been defined and applied in a variety of contexts, including internet banking (Gan et al., 2006). Research evidence (Zeng and Reinartz, 2003) suggests that the Internet has differentiated impact at different stages of the purchase process, with its true value-added emerging at very specific points. It is therefore important to understand and target all stages of the decision-making process. This is a central issue where there is substantial, unrealized, business potential, as in the case of the development of Internet banking. It seems likely that by identifying the various stages of the decision-making process, marketing managers can more successfully design banking websites to promote their products and services throughout the entire customer behaviour process (Senecal et al., 2005).

This suggests the potential value of an approach that explicitly considers website features in relation to the various stages of the purchasing decision-making process. However, no previous systematic study has been found that does this. Kwong et al. (2002), based on review of 114 articles, found that most studies focused on the first stages and ignored the last two stages. Applying the consumer's decision-making process in an online environment and observing how it relates to website features potentially has both practical and theoretical value. Practically, it would assist marketers to maximize the effectiveness and usability of their websites. Theoretically, such a rethinking of the concept of consumers' purchasing behaviour is warranted by the distinctive nature of the on-line retail environment (Senecal et al., 2005). Whilst there is a substantial literature on the consumer behaviour process per se, and also on consumer use of the Internet in the Western context, what is lacking is an understanding by marketers and researchers of the nature of the consumer's decision-making process in the context of the Internet (Legris et al., 2003). Understanding the online consumer behaviour process is the first step in developing and delivering a clear, attractive online presence which is likely to maximize the impact on Internet users (Constantinides, 2004).

The development of online website features to match users' needs within each decision-making stage would appear to be a complicated and time-intensive process. It consists of defining information requirements for proposed applications and transforming those requirements into website design. Before that, information must be gathered from users in order to develop effective services leading to consumer satisfaction. In the following discussion, therefore, each of the five stages of the purchasing decision-making process will be outlined, and its implications for adequate website design considered.

#### **3.1. Need recognition stage**

Need recognition occurs when the customer realizes a need or want, perceiving a difference between the current or actual state of affairs and the state of affairs they aspire to (Cant et al., 2002). Using advanced database

technology, websites have the potential to trigger clients' interest in online transactions (Shang et al., 2005). The design of website features gives marketers the opportunity to communicate effectively with clients to rouse their attention (Faber et al., 2004) and, hence, motivate their behaviour (Huang and Christopher, 2003). Various suggestions have been proposed for reaching clients, ranging from banners with short catchy graphics to draw attention to a simple emotional message (Moore et al., 2005), to hyperlinks to detailed product specifications, pictures, and newsletters (Chen and Lee, 2005). However, more research is needed to understand better how Internet banking websites can be used effectively as a promotional tool to stimulate clients' need recognition. Significant questions that need to be addressed and answered include:

- What website features arouse clients' attention, or cause the recognition of new needs?
- How do clients perceive such features?
- To what extent do website features succeed in capturing clients' attention or moving them to a sense of arousal that might encourage clients to continue using Internet banking?

### 3.2. Information search stage

At this stage, clients will look for more information to underpin a potential decision. Sources of information include personal, commercial, public, or experiential (Kotler and Armstrong 2004). A website could satisfy the information needs of its clients (Gutierrez and Windsor, 2005). As noted by Flavian et al. (2005) the Internet may differ from traditional information sources on two dimensions: information flexibility and information accessibility. Information flexibility refers to the ability to tailor the information to the needs and desires of the receiver. Information accessibility refers to the user's ability to control when and where information is available. With the Internet and wireless technology, information on a website can be accessed from almost any location on the earth and at any time (Flavian et al., 2005). Such features contribute to the advantages ascribed to the bank website as an information source, by Waite and Harrison (2002). First, it provides access to information, simplifying and reducing the time and effort related to search activity. Secondly, it can provide complete availability as a virtual medium, without physical form. Thirdly, it is conducive to interactivity, enabling two-way communication and providing greater client control over the speed and sequence of information. Fourthly, the bank website can be dynamic, offering the potential of limitless information that can be updated and amended easily and speedily. Finally, the bank website offers multimedia friendliness through the provision of graphics, text, tables and figures, making information attractive as well as useful to the user (Waite and Harrison, 2002).

These features can be used in the service of a variety of functions, ranging from basic information provision to full transactional capability. At the most basic level, an Internet presence merely provides information about the financial institution, with no interaction between the institution and client other than a possible e-mail link. The next level allows the institution to receive information, such as an electronic loan application. The third level offers the client the opportunity to share information, such as account balances or transaction details. The highest level identified allows the client to process information. For example the client can process transfers of funds between accounts or can make bill payments. At any level of functionality, clients' judgment depends on the product or service information presented on the banking website. It is to be expected that clients who are satisfied with such information features and perceive clear benefits from their relationship with the website will be more committed to adopt this technology as a financial channel. This view is supported by Pikkarainen et al. (2004) who found the amount of information on an online banking website was the most influential factor, after perceived usefulness, explaining the use of online banking services and influencing online-banking acceptance. Thus, related to the information search stage, questions to be answered include:

- In regard to offering information that clients may look for, what type of searching tools, indexes, lists, open interactions, and opportunities for answering questions does the banking website provide?
- To what extent can website features in relation to information search affect clients' intention to continue using Internet banking services?
- How do clients perceive Internet banking website features in regard to information search?

### 3.3. Information evaluation stage

Clients evaluate the quality and characteristics of various products based on characteristics such as product attributes, degree of importance, brand beliefs, and expected satisfaction (Kotler and Armstrong, 2004). For this purpose, the clients might be inclined to seek ways to open a dialogue and interact directly with marketers (Kumar et al., 2004). Consumer attitudes toward Internet banking adoption are found to be impacted by four information attributes: correctness, completeness, updating and credibility (Shih and Fang, 2006). Methods to facilitate the evaluation of information (Hahn, 2003) include links to related pages which facilitate evaluation of information, and help with service and product selection by presenting trustworthy recommendations or providing extra services

information (Huang and Christopher, 2003). Information quality, therefore, is included in an assessment of the effect of web use, especially with regard to searching during performing transactions, where client and firm exchange and share information via the Internet (Shih, 2004). Client perceptions of the quality of information on the banking website are assumed to affect intention toward acceptance of Internet banking. Significant questions to be tackled in relation to this are:

- What assistance can Internet banking site features provide to help clients in evaluation of different information, products, and services?
- What elements do clients look at when they are engaged in information evaluation?
- How do clients perceive website elements that can help them to evaluate their information? How can this affect their intention to use the Internet banking website?

#### 3.4. Purchase decision stage

Even after the client has made an evaluation, he/she may not make a transaction. Factors that can influence the decision include the amount of risk that may be perceived by clients (Ueltschy et al., 2004). Perceived risk is a particular concern in online transactions and risk factors have been investigated extensively (Doolin et al., 2005; Drennan et al., 2006). Specific aspects of risk include privacy, security, trust, reliability and product risk in terms of not getting what was expected. Evidence abounds that consumer risk may reduce the likelihood that the consumer will perform a transaction via the Internet (Drennan et al., 2006).

For these reasons, it is important that web designers make clients feel that the Internet is a simple, secure, and reliable way of performing transactions (Valentine, 2003). Websites should therefore offer some technical characteristics to reduce perceived risk and give clients adequate confidence. Questions that need to be considered, therefore, are the following:

- How do Internet banking websites maintain/increase clients' feeling of security?
- How can the Internet banking website be used to reduce the feeling of perceived risk associated with the financial transaction?
- How do clients perceive website features provided to increase their feeling of security?

#### 3.5. Post-purchase behaviour stage

Positive, post-purchase behaviour is critical to the success of any company. Each transaction should be viewed as a starting point toward building a continuing relationship with clients (Durkin and Howcroft, 2003). In this context, an important issue is clients' cognitive dissonance. This is the state of psychological tension or unease that a client experiences after making a transaction, when the consumer asks, "Did I make any mistake?" The few studies (Kwon, 2005; Nadeem, 2007) that have examined cognitive dissonance in an online environment show a clear relationship between high levels of cognitive dissonance and low levels of repeat transaction.

The other important aspect of post-transaction behaviour relates to the satisfaction or dissatisfaction that clients experience. Customer satisfaction is a key to customer retention (Huang and Christopher, 2003). Companies need, therefore, to encourage clients to discuss problems, using their feedback to improve both products and services in order to achieve consumer satisfaction (Kotler and Armstrong, 2004). This requires communication between marketers and clients. The Internet can be a useful medium for increasing clients' post-transaction satisfaction by support broadcasts, one-on-one communications, support via websites and e-mail help (Dunn, 2002). Marketers might then use that feedback to gauge customer satisfaction or dissatisfaction and to identify appropriate corrective action where necessary (Smith and Chaffey, 2005).

To facilitate this process, however, website designers should strive to provide elements that can enhance the relationship between their website and the client (Park and Kim 2006), such as online support and live communication. Therefore, a significant question is to what extent the Internet can be a powerful medium to reduce client cognitive dissonance and to improve consumer satisfaction. Other important questions to be considered about the Internet's potential influence on post-transaction processes include:

- What are the potential roles of banking website features in decreasing clients' experience of post-transaction doubt?
- How do Internet banking website features assist in measuring clients' post-purchase satisfaction?
- How do clients perceive website features that may decrease post-transaction uncertainty?
- How do clients perceive website features that may maintain/increase post-purchase satisfaction?

By linking website features to stages of the consumer's decision-making process in the manner suggested

here, and by integrating these elements with the components of existing technology adoption models, a greater understanding of purchasing behaviour, technology adoption, and the potential of the latter to influence the former, can be achieved. This would benefit researchers, business and consumers alike.

#### 4. Conclusion

Existing technology adoption models pay inadequate attention to characteristics of the technology itself. The concept of perceived website design characteristics fills the identified gap. Website features may contribute in attracting potential users to the site and, hence, the service presented, winning customers' trust and enhancing their loyalty.

Such features may operate differently at each stage of the customer's decision-making process. In order to design effective websites that attract consumers and support the B2C relationship, therefore, marketers and designers need to understand all these stages, and give explicit consideration to use of website features that operate effectively. Website features can be used to stimulate need recognition, to facilitate the client's search for and evaluation of information, to allay perceptions of risk in performing transactions, and post transaction, to alleviate cognitive dissonance and provide feedback on satisfaction. In relation to each of these stages, critical questions were formulated, which need to be answered in order to have a complete understanding of the role played by website features in the formation of consumers' behaviour intentions. Using these stages as a guide and referring to context-relevant literature and/or content analysis of websites, a list of website features for inclusion in a measurement scale may be developed to operationalize the construct; the list would vary according to the context of application, as implied by the TTF.

This new construct, website features, it is argued, can and should be incorporated alongside elements from existing models of technology adoption, to develop a better understanding of any new product or service offered via the Internet, and to examine the success of its acceptance and anticipated adoption. Such an approach would extend marketing theory to take account of the new and distinctive retail environment created by the Internet. For businesses, it offers a framework which can guide their website design to play a more effective role in the marketing function and in the long-term relationship with customers.

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