Conceptualising a model of *customer* and *web-channel readiness* for Internet banking adoption: Part 1

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Abstract:
In the context of this study, we delineate "readiness" as the state of preparedness, ability and willingness to engage in Internet banking (IB). We argue that both the individual customer's readiness and the financial institution's web-channel readiness are the twin-antecedents of the Internet banking adoption process. These two constructs must be equally established and sustained before retail banking customers can register for and continue to use IB services. This notion becomes clearer on the conjecture that both the prospective Internet banking customer and the web-based banking channel must meet certain fundamental criteria before the customer can fully adopt Internet banking services. In order to ascertain the veracity of our assertion, we decided to examine the influence of 26 intervening customer-related and channel-related variables that were isolated from existing literature on retail customers' attitudes and intention toward IB adoption. In this first phase of our planned series of national studies to test our twin-readiness model, we targeted a survey-sample of 1000 banking customers in Scotland. ANOVA, multiple regression, and logistic regression analyses were used in testing the associations of the 26 variables in our model with customer attitude and customer intention toward IB adoption. Based on our results, we propose an equal evaluation model of potential universal antecedents of IB adoption (EQUAEVAL), which can be tested in other national study contexts in future research.

INTRODUCTION

Most of the existing studies on Internet technology diffusion in the banking sector tend to be based on existing models such as Davis' (1989; 1995) Technology Acceptance Model (TAM), Rogers' (1983; 1995) Theory of Innovation Diffusion (TID), and Parasuraman et al's (1985; 1991) Service Quality (SERVQUAL) model. Several variations of these models have been used by various scholars to examine the characteristics of the Internet banking innovation and channel efficacy when studying customers' perceptions of, and attitudes to, the IB service channel. In our estimation, most of the studies have largely tended to focus only on the *readiness* of the IB technological process and web-channel, while ignoring the fact that the individual customer faced with the adoption decision also needs to be *prepared, able,* and *willing* to use the web-technology even before testing and adopting it for banking services. As a result, the models propounded in most of the studies have largely ignored the fact that an individual's own *readiness* for the Internet banking technology also affects his or her *attitude* and i*ntention* towards adopting it as a service channel.

This study has attempted to fill the above gap by using a combined adaptation and extension of the Technology Acceptance Model (TAM), the Theory of Innovation Diffusion (TID), and Ajzen's (1985; 1996; 2005) Theory of Planned Behaviour (TPB) to equally examine both the *Internet banking web-channel's readiness* and the *retail customer's readiness* for Internet banking adoption. We argue that the *quality and features* of a new technology-based service channel (*channel readiness* variables) are not the only factors that affect an individual customer's *attitude* and *intention* toward adopting the channel. We therefore introduced the influence of the customer's personal characteristics (*customer readiness* variables) as the other half of the two categories of variables that must equally be established and sustained before the adoption of any technological innovation can fully take place, especially the Internet banking innovation. We also argue that it is not enough for the financial institution to claim that the quality and features of its IB-channel are sound. The quality and features of the channel must actually be *perceived* by the customer before the channel can be said to be ready. Hence, by channel readiness, we mean *perceived channel readiness*.

Customer personal characteristics that define *customer readiness* for IB adoption:
In the context of this paper, *customer readiness* means the customer's state of being not only *prepared* and *willing* but also *able* to register and continue to use Internet banking. A customer's willingness reflects his or her propensity to try out, register for, and continue to use the IB service channel, including shedding off any phobia or reluctance towards the adoption idea. In other words, being ready means that he or she becomes keen to try out the Internet banking channel; is able to register for it; and develops the intention to continue using it. Consequently, being *prepared* and *willing* to use the channel is not enough to make a customer adopt Internet banking. He or she must also possess the *ability* to do so. Ability reflects the customer's conscious acquisition of the requisite knowledge, aptitude, technical skills, and experience necessary for using the computer- and Internet-based banking channel. The customer's *ability* to try out and to continue using the IB channel is therefore essential for adoption to take place.

Accordingly, all the factors that can enhance the customer's *preparedness* and those that can affect his or her *willingness* and *ability* to use the IB channel must be addressed in order to advance the adoption process. The *customer readiness* concept has therefore been synthesised in this study by harnessing all those personal *demographic* and *attitudinal* characteristics of retail banking customers that have enhanced or inhibited their Internet banking adoption capabilities and behaviours in various parts of the world. The necessity of assessing the customer's own *readiness* for IB adoption seems to have been largely ignored in most studies on IB adoption. It is also our position that the lack of evidence that financial institutions adequately deal with both the *customer readiness* and *channel readiness* issues is the reason for the apparent reluctance of many retail customers in different parts of the world to adopt Internet banking as identified by Kuisma et al. (2007) and Laukkanen et al. (2008). We therefore argue that any evaluation process that seeks to determine positive Internet banking adoption antecedents must examine the *individual customer's readiness* to embrace Internet banking alongside the evaluation of the *financial organization's web-channel readiness* to be adopted by customers.

To test our assertion, we identified from existing studies in the area all personal *readiness* characteristics of individual banking customers that have directly or indirectly affected Internet banking adoption trends in various parts of the world and included them in our study model for

examination as potential antecedents of *customer readiness* for IB adoption (see **figure 1**). These characteristics include *demographic, attitudinal,* and *psychographic* variables whose motivative or inhibitive effects on IB adoption behaviours in various parts of the world have been documented in the extant literature. Our initial study model proposed that all the customer personal characteristics indicated in figure 1 constitute the vital set of factors that can influence the individual banking customer's *attitude* and *intention* toward Internet banking adoption. The 16 characteristics and their sources are discussed in detail in the literature review section.
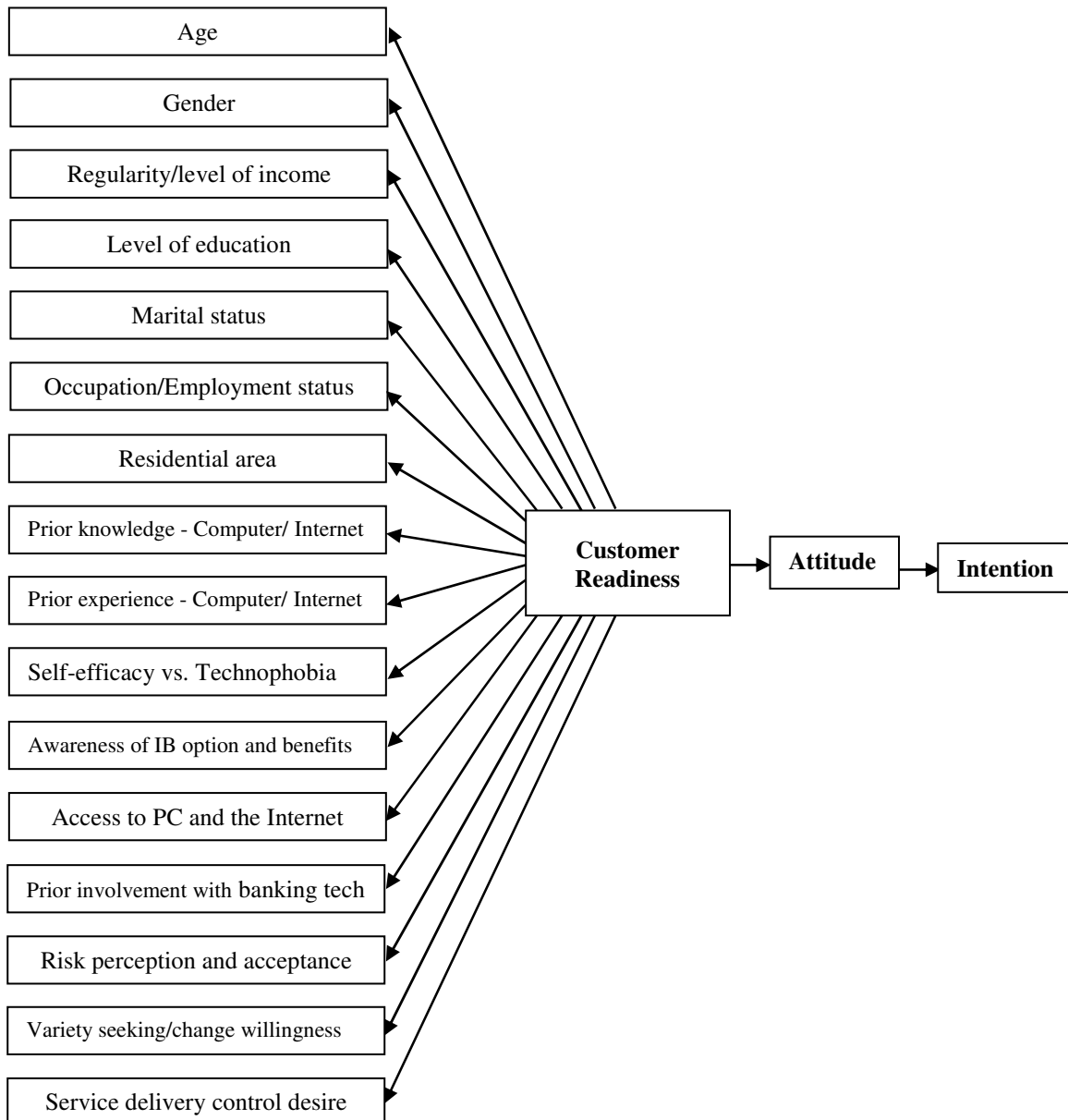

Figure 1: Component conceptual model 1, depicting the *customer personal factors* that can determine *customer readiness* for IB adoption (Sources: Isolated from the extant literature)

Internet banking website characteristics that define *channel readiness* for IB adoption:
We define IB *channel readiness* as the *state and ability* of the financial institution's *website* to act as an efficient, secure, relevant, compatible, easy to use, and affordable service channel through which customers can transact their banking activities without having to physically go to the financial institution's branches, dubbed the "brick and mortar" channel by Kolodinsky et al. (2002). As with the customer characteristics, those characteristics of the banking website that have influenced IB adoption in various parts of the world were also isolated from existing studies in the area and modelled into our study (figure 2) for further examination as the *channel readiness* factors.
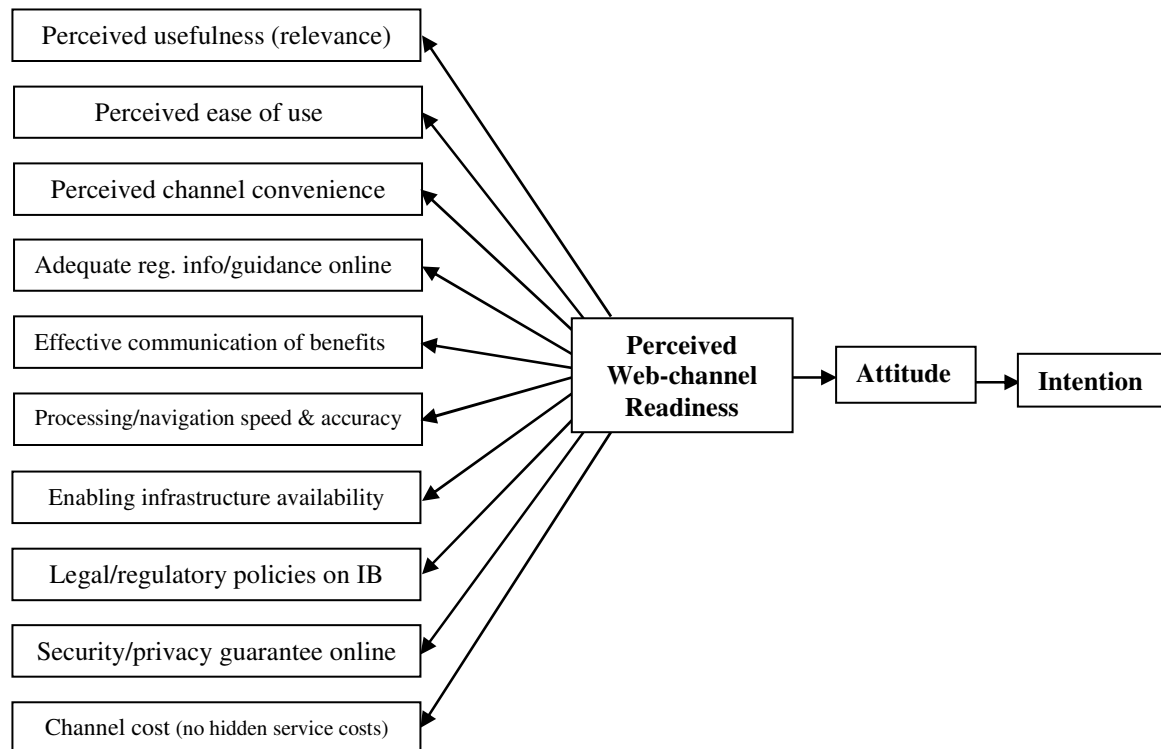

Figure 2: Component conceptual model 2, depicting the *banking website factors* that can determine *channel readiness* for IB adoption (Sources: Isolated from the extant literature)

The sources and motivative or inhibitive effects of these 10 variables in figure 2 are discussed in detail in the literature review section. Our initial study model has proposed that they collectively constitute the *channel-related factors* that can directly or indirectly affect and determine the *IB channel's readiness* to be adopted and used by retail customers for Internet banking. It is also our position that the quality, features, and characteristics of the IB channel (as enumerated above) are not the only factors that can affect an individual's *attitude and intention* toward the adoption of Internet banking. Rather, we argue that the above *channel characteristics* (in figure 2) will only positively affect IB adoption when combined with the *customer personal characteristics* enumerated in the previous subsection (figure 1). Our study was therefore aimed at examining the above 16 *customer-readiness* and 10 *channel-readiness* factors in order to confirm or dispel our position that they jointly constitute the twin-determinants of retail customers' *attitudes and*

intention toward IB adoption which, in accordance with Ajzen's (2005) theory of planned behaviour (TPB), will then influence their decision to adopt (or not adopt) Internet banking services.

INTERNET BANKING IN SCOTLAND

The devolution of regional governing powers to the Scottish Executive (now known as the Scottish Government) by the UK government in 1999 was established, among other reasons, "as an exercise in re-establishing the legitimacy of government in Scotland" (ESRC, 2005: p4). On this basis, Scotland is governed by a separate executive; has a separate parliament; has Edinburgh as its own national capital city; has its own national flag; and maintains its own separate judicial, legislative, penitential, sporting, educational, and fiscal systems under the devolution (Nationmaster, 2007; 2012). According to Olga Wojtas of *Times Higher Education* (4/12/2008:p22) in his review of Rab Houston's (2008) book, *Scotland: A Very Short Introduction*, "Scotland is a part of Britain, but also a distinct nation." Citing the author, the reviewer maintains that "even after the union of the Scottish and English parliaments in 1707, education, local government, law and religion remain separate" (Wojtas, 2008).

In table 1, we present an overview of Scotland's socio-economic statistics in comparison with the overall UK figures. I table 2, we also show that there are four banks that constitute the Committee of Scottish Clearing Bankers (cscb), including the Bank of Scotland (BOS), a member of the Lloyds Banking Group since October 2008, the Royal Bank of Scotland (RBS), The Clydesdale Bank (CB), and the Lloyds TSB Scotland**.** They jointly form the Scottish clearing house, although only the first three banks mentioned above are involved in printing the Scottish pound sterling notes (*cscb*, 2007; 2012). Also, 3 of the current 57 building societies in the UK were founded in Scotland, including Dunfermline, Scottish, and Century (BSA, 2008; 2012). Hence, there are effectively 4 full-fledged banks and 3 building societies that are of Scottish origin in the UK. However, there are also several other banks and building societies with headquarters elsewhere in the UK that have branches in various parts of Scotland.

The concept of electronic banking in Scotland was initially introduced in the early 1980s when the proprietary PC-based "Homelink" services were launched by the Bank of Scotland following those of the Nottingham Building Society (Tait and Davis, 1989). A few other banks in the UK followed up, but these intranet-based home banking services did not gain significant adequate customer acceptance and many banks had to discontinue their own (Daniel, 1999). However, the first UK bank to launch contemporary Internet banking was Nationwide, in June 1997, followed by the Royal Bank of Scotland (RBS) in July 1997 (Mortgage Finance, July 1997). This effectively made RBS the first financial institution in Scotland to introduce Internet banking, although they insist they were actually the first to hit the high streets with Internet banking in the UK as a whole (talentsscotland.com, 2007). Presently, all the banks in Scotland, as in the whole of the UK, have introduced Internet banking and are offering online transactional services to their customers at various levels of intermediate and advanced stages of Diniz's (1998) model of IB diffusion. A survey of the building societies segment of the UK financial industry carried out by an IT company, *TietoEnator*, found that 54% of members of the building societies projected that they would introduce online savings channel by June 2009. In the survey, 92% of the customers identified *Internet security* as the channel factor that was most important to them.

Ease of use of the Internet channel (64%) and *perceived channel cost* (23%) were also ranked second and third respectively (Mortgage Finance Gazette, June 2008).

Before the global financial crisis of September 2008, the economic statistics released by the Scottish Enterprise showed that Scotland was the fifth largest financial services centre in Europe and the second largest among the UK regions (Scottish Enterprise, 2007). Prior to that crash, two Scottish banks, The Royal Bank of Scotland (RBS) and the Halifax Bank of Scotland (HBOS), were among Europe's top banks by market value (ibid). However, following the great slump in the global financial market precipitated by the collapse of Lehman Brothers Group of the USA in September 2008, HBOS was bought over by the Lloyds TSB Group in a 12.2 billion pounds deal (BBC, 2008). As the global financial crisis deepened, several large economies around the world slipped into recession in the first quarter of 2009, including the USA and UK. Both the HBOS-Lloyds consortium and the RBS had to be rescued from collapse by the UK Government, which pumped £20 billion and £17 billion respectively into the two institutions. By February 2009, the government had taken over about 43% and 70% shares of the two banking firms respectively in order to forestall their disintegration (BBC News, October 2008; Mortgage Finance Gazette, February 2009).

Lastly, with regards to Internet banking penetration in Scotland, the 2007 UK statistics of active adults who maintained Internet access for personal purposes showed that 42% of the active adults with Internet access in Scotland were already using it for personal banking and financial services (National Statistics Omnibus Survey, 2007). However, current figures show that about 54% of the all adults in the UK now use Internet banking. This puts the figure for individuals in Scotland who presently use Internet banking services at about 2.37 million people (table 2), being about 74% of Internet users and nearly 45% of the Scottish population (UK Office for National Statistics, 2012; The Scottish Government, 2012; General Registrar Office for Scotland, 2012).

LITERATURE REVIEW
Customer personal *demographic* characteristics:
The main demographic characteristics found in existing studies to have affected retail customer adoption of Internet banking include *age*, *gender*, *level of income*, *level of education*, *marital status*, and *occupation* (see Karjaluoto et al., 2002; Jamal and Nassar, 2002; Eriksson et al., 2005; Lassar et al., 2005; Kolodinsky et al., 2004; Shergill and Li, 2005; Wan et al., 2005; Ilett, 2005; Durkin, 2007; Hernandez and Mazzon, 2007). Some of these scholars also found that *place of residence* and *type of employment* are influencers of customer intention to adopt Internet banking (see Laforet and Li, 2005; Lichtenstein and Williamson, 2006). Yet a few other findings show that customers' *regular access* to, *prior usage knowledge,* and *prior usage experience* of computer and the Internet are the most important determinants of Internet banking adoption (see Thornton and White, 2001; Chung and Paynter, 2002; Hernandez and Mazzon, 2007; Kuisma et al., 2007; Polasik & Wisniewski, 2009).

For instance, in a study of Internet banking adoption in New Zealand, Chung and Paynter (2002) confirmed that customers' *lack of prior usage knowledge and experience* of the Internet was a major inhibitor of online banking adoption there. In their own research, Lichtenstein and Williamson (2006) also note that *technophobia*, a term first used by Mitchell (1994) in reference to an aversion to new technology, was culpable for customers' lack of self-efficacy and

innovativeness. As a result, it was found to be the key inhibitor of customer adoption of online banking in Australia. *Technophobia* is a condition in which some individuals are confounded by the technological complexities of computerisation and the Internet. This usually leads to a low level of self-efficacy in the attitude to, and usage of, computers in general (Mitchell, 1994; Thatcher and Perrewe, 2002; Floh and Treiblmaier, 2006).

There seems to be no consensus among consumer behaviour scholars regarding the extent to which any of these demographic factors influence Internet banking adoption or the ones which could be regarded as universal determinants of customer adoption of Internet banking. This is probably because the results of many of the existing studies show conflicting effects of customer personal characteristics on Internet banking adoption in different countries around the world. For instance, while the studies of Li et al. (1999), Thornton and White (2001), Chung and Paynter (2002), Karjaluoto et al. (2002), Jamal and Nassar (2002), Kolodinsky et al. (2004), Shergill and Li (2005), and Lichtenstein and Williamson (2006) found varying evidences of the significant influence of *age*, *gender*, *educational level*, *income level*, and *prior computer/internet knowledge and experience* on customer adoption of Internet banking, Ilett (2005) reported of the Future Foundation research which found that *gender* presently has no significance in determining internet banking adoption in the UK.

In New Zealand, female customers were found to be more sensitive to the issues of privacy protection and ethical standards than men and this made them more reluctant to adopt certain Internet banking services (Shergill and Li (2005:p11). In contrast, the number of women using internet banking services in many European countries has become equal to that of men, and has thus invalidated the influence of *gender* on Internet adoption in the region (Nielsen NetRatings, 2002). This trend has been predicted to likely be the case in several other developed and developing countries in a few years' time. Besides, in the developing countries, the population of women engaged in activities previously considered the exclusive preserve of men has been growing steadily over the years (Onyia and Tagg, 2011).

Furthermore, while Wan et al. (2005) found that *consumer demographics* in general had a marginal influence on Internet banking adoption in Hong Kong, Laforet and Li (2005) found no correlation between *level of education* and customers' adoption of internet or mobile banking in China. The scholars therefore concluded that *education* had no influence at all on customer adoption of Internet and mobile banking services in China. Elsewhere, while the study of Wan et al. (2005) shows that customer's *"type of occupation"* is a major determinant of banking channel adoption in Hong Kong, no other study has confirmed this finding. Instead, Jayawardhena and Foley (2000) and Karjaluoto et al. (2002) found that high or low *"level of occupation"* (rather than "type") was a determinant of Internet banking adoption among customers in the UK and Finland respectively. These two studies show that customers with high-level occupations are more likely to adopt internet banking than those with low-level occupations.

Obviously, the level of occupation also reflects the *income level* of an individual, and Internet banking has been found to be "most attractive to higher income earners" and "higher net-worth individuals" (Kolodinsky et al., 2000:p181; 2004:p242; Lichtenstein and Williamson, 2006:p53). Moreover, in UK and Finland, as in many other developed countries, manual "types" of occupation (say, wheelie bin workers with the Glasgow City Council) are not necessarily low

income earners as may be the case in developing countries. Hence, it is not their *"type" of work*, but their *level of income*, that can influence their intention to adopt or not adopt Internet banking. On the influence of *marital status*, Kolodinsky, et al. (2004:p238) found that computer-based banking usage increased by 24% among married individual customers in the USA between 1999 and 2003, while it increased by 17% among single female customers and 25% among single male customers in the same period (ibid:p245). This indicates that while there was a higher increase in usage among single male users than married individuals, there was also a higher average usage among married individuals than single individuals (21%) then.

The scholars therefore concluded that the gap between single and married individuals adopting Internet banking in the US was closing up. Up to the year 2000, IB adopters in the US were more likely to be singles (Kolodinsky et al., 2000:p182), but later findings suggest that the number of married adopters was fast matching up with that of single adopters (Kolodinsky et al., 2004). In contrast, IB adopters in the UK are more likely to be married or partnered parents (Illet, 2005). The effect of *gender* was also observed in the study by Kolodinsky, et al. (2004) who also noted that e-banking adoption occurred more among male customers than female customers in the US, unlike in the UK where research has shown that equal number of male and female customers now use Internet banking (Illet, 2005).

Lastly, the above findings show that strong differences and contradictions exist in the literature regarding the effects of customers' personal characteristics on their Internet banking adoption decisions. This obviously accounts for the lack of evidence in the literature on which intervening variables could be regarded as *universal affecters* of Internet banking adoption. The major reason for the conflicting and shifting results over the years could be because most of the personal characteristics of Internet banking customers are time-bound, in the sense their effects seem to have been changing over the years since Internet banking inception. Moreover, as noted by Thornton and White (2001), as the Internet technology becomes more common and more widely used in a particular country, the tendency is that its usage will continue to permeate other age-brackets and socio-economic groups in the society. The authors therefore assert that as each country's population matures in the knowledge, confidence, and usage of computer and the Internet, changes in their usage patterns of online banking channels will also continue to occur.

Customer personal *attitudinal* characteristics:
Customers' attitudes reflect their psychographic profiles, which are usually based on their general "life style dimensions" (Wells, 1975:p197). These behavioural characteristics are usually manifested in their interactions with the goods and services they use (or do not use) as part of their lifestyles. A few of the characteristics have been identified as affecters of customer adoption propensities in the area of Internet banking. These include customers' *level of involvement with computer and Internet technology* in general and *with banking-technology* in particular (see Lassar et al., 2005; Floh and Treiblmaier, 2006; Maenpaa et al., 2007; Polasik and Wisniewski, 2009). Others are *risk perception and level of risk acceptance* (Chung and Paynter, 2002; Berger and Gensler, 2007; Srivastava and Srinivasan, 2007; Aldas-Manzano et al., 2009), *variety seeking behaviour* (Magi, 2003; Srivastava and Srinivasan, 2007), *the desire to control service delivery* (Ramsay and Smith, 1999; Gunter et al., 2001; Henry, 2005), and *the willingness or reluctance to change or accept changes in service delivery* (Suganthi et al., 2001; Sohail and Shanmugam, 2003).

Customer Involvement has been generally conceptualised as the degree of personal engagement with a product, service, system, or technology by a customer, based on its perceived relevance to him or her (Beatty et al., 1988; Mattila et al., 2003; Lassar et al, 2005; Floh and Treiblmaier, 2006). These scholars perceive *involvement* as an important behavioural variable which affects consumers' channel selection, adoption and retention in both offline and online service contexts. Lassar et al. (2005) characterise *customer involvement with banking-technology* in terms of both the purpose of involvement ("utilitarian" or "hedonistic") and the level of involvement (depth and breadth of experience). In a study of online banking adoption in the USA, the scholars found that the respondents' *web experience* as well as the intensity of their internet usage positively influenced their Internet banking adoption. Additionally, in a study of the changes in the UK banking sector following the advent of Internet banking, Jayawardhena and Foley (2000) identified the typical internet banking adopter as a "high involvement person, belonging to the upper middle class of the society", while in Finland, Mattila et al. (2003) identified the "senior citizens" (elderly people) as those with the least *involvement* in Internet banking.

On *risk perception and level of risk acceptance*, Chung and Paynter (2002) investigated Internet privacy issues in New Zealand and observed that to some people, the *internet risk and privacy concerns* were not a special issue, yet they were of great concern to other very sensitive people due to the invasive nature of online information gathering. The scholars noted that consumers' attitudes towards the issues of *Internet privacy and security risk* influenced their online banking adoption. They therefore concluded that those who do not see the issue of privacy as any serious threat would readily adopt Internet banking, while the over-sensitive ones would be more reluctant to adopt any kind of online services.

On *variety seeking behaviour*, research has shown that consumers' willingness to adopt any form of product- or service-based innovation is usually influenced by their natural *desire to seek out and compare varieties* of existing alternative products and services (McAlister and Pressemier, 1982). For some, this consumption attitude is purely a matter of economic shopping orientation whereby the interest is mainly to compare product prices and attributes from shop to shop or from website to website (Magi, 2003). For others, it is a matter of seeking out product or service alternatives for the sheer sake of variety (McAlister and Pressemier, 1982). These scholars identified three intrapersonal motives behind a consumer's direct *variety seeking behaviour*, including the genuine desire for "information," the simple desire for "alternation among the familiar," and the sheer "desire for the unfamiliar." Also, in a study of customer perceptions of alternative banking channels in India, Srivastava and Srinivasan (2007) identified three categories of variety seekers as *convenience seekers*, *control seekers*, and *innovation seekers*; and concluded that these psychographic factors were the prime determinants of the customers' choice of banking service channel.

However, *seeking control* is not an intrinsic dimension of *variety seeking behaviour* but a full behavioural tendency in itself (Hoffman et al., 2000). People who want to *control* their service delivery or purchase situations do not go about in search of varieties. They tend to stick to channels that offer them the power to control their interactions with marketers, and the Internet technology empowers them with that ability to do so (Hoffman et al., 2000). This *desire to control service delivery* has been shown to influence Internet-based service channels in Australia

(Ramsay and Smith, 1999; Thornton and White, 2001) and in Germany (Gunter et al, 2001). In web-based transactions, individual consumers are able exert more control over their choices of activities, brands, marketing information, online shops, and online service channels because their decision-making capabilities have been enhanced by the Internet technology (Henry, 2005). As these capabilities increase, consumers become more confident and therefore exhibit more *desire to control the online services* they receive (Ramsay and Smith, 1999). For example, in a study of consumer usage and attitudes toward financial distribution channels in Australia, Thornton and White (2001) found that *the desire to control service delivery* was a strong affecter of the respondents' Internet financial services adoption and retention.

Lastly, some customers' *willingness or reluctance to make/accept changes* can also affect their intention to adopt or not adopt Internet banking. While some people easily embrace changes in their lives once they perceive that benefits will accrue from them, others find it difficult to accept changes in their routines and lifestyles, even when they can see the necessity and benefits of the changes. Sometimes, it is due to fear of the uncertainty of the future or fear of inability to cope with expected adjustments to the changes. At other times, it is purely a matter domain-defending. Domain defenders often are resistant to organizational changes. They insist on things being the way they have always been, and on doing things the way they have always done them in the past. Sometimes, the insistence is just a way to hide their inability to learn new ways of doing things or to cope with the pace of the change, especially in the context of technology diffusion. In their study, Srivastava and Srinivasan (2007) conceptualised this type of reluctance as "inertia for change" and found that it is also a major factor that influences banking channel choices in India.

Web-channel characteristics:
The second and equally very important category of factors that have been found to have influenced customer adoption and retention of Internet banking in various parts of the world is related to the banking institutions' websites. Lichtenstein and Williamson (2006) investigated some of the variables in this category in Australia and characterised them as *process factors*. They consist of the features, qualities and benefits of the banking web-channel through which retail financial services are delivered to online customers. Such factors include *convenience*, i.e., time-saving ability (Pew 2002; Durkin, 2004); *relevance*, i.e., usefulness (Tan and Teo, 2000; Eriksson et al., 2005); *relative ease of use*, i.e., user-friendliness (Kolodinsky et al., 2004; Eriksson et al., 2005); *adequate registration information and guidance* (Waite and Harrison, 2004); *effective communications* (Kuisma et al., 2007); *speed of web navigation and service processing* (Laukkanen et al., 2007); *security and privacy guarantees* (Suh and Han, 2002); as well as *online service cost* (Mattila et al., 2001). These variables reflect the overall desirability, efficiency, and quality of the Internet banking website, which must be perceptible to the customer.

While customers' demographics and attitudes are factors personal to the customer, the perceived channel and process characteristics of the financial institution's website are impersonal and external to the customer. They reflect the technology-driven attributes of the Internet banking websites, which customers are usually not able to alter or control. Customers can only react to them by deciding to adopt or reject the online services offered via the websites. The main influences of these channel factors on customers' decisions to adopt or not adopt Internet banking stem from the customers' perceptions of the functions, benefits, quality, relevance and

reliability of the web-based channel as an alternative to offline branch-banking. Over the years, since the inception of Internet banking, quite a few scholars have applied technology acceptance, innovation diffusion or service quality models to study these web characteristics in various countries. As earlier noted, evidences of significant influence of some of these variables were found in some countries, while their influence was insignificant in others.

The first factor, *channel convenience*, has been found to be a very fundamental motivator of consumer adoption of Internet banking as well as most other Internet-based commercial transactions. Li et al. (1999) studied the impact of perceived channel utilities, shopping orientation and consumer demographics on online buying behaviour and found that online purchasers are more *convenience-oriented* than offline purchasers and also that the more frequent online buyers are higher in *convenience orientation* than the less frequent online buyers. The major element of *convenience* that appeals to online consumers was first identified by Bellman et al. (1999) as the *time-saving* aspect of convenience. In the Internet banking context, Pew (2002) found that *convenience*, in terms of the time-saving and 24-hours-a-day-7-days-a-week nature of the Internet, was the most important adoption motivator among US banking customers. The author thus declares that as far as Internet banking adoption is concerned "convenience is king". However, in an international study of factors that motivate or constrain customers' registration for Internet banking in the UK, Ireland, Sweden and the USA, Durkin (2007) characterised *perceived time-saving* as a different factor from *perceived convenience*.

Perceived *time-saving* was seen as the quickness of the online transaction, while *perceived convenience* was described as the "24-hour access" of the Internet banking channel (Durkin, 2007). Nonetheless, the rationale for the profundity of the *convenience* concept on customers' choice of the Internet banking channel is the opportunity for customers to transact with their banks from the comfort of their homes or workplaces any time of the day or night, and also to exercise their preference for a transaction channel that saves their time and not keep them waiting on the queue, both in terms of the download speed and the efficiency of the services delivered via the channel (Wan et al., 2005; Durkin, 2007). Another major motivator of customer adoption of Internet banking is the *perceived usefulness* (relevance) of the Internet retail banking channel. Tan and Teo (2000) employed Ajzen's (1985) *TPB* and Roger's (1995) *TID* in their study to explain the influence of factors that determine internet banking adoption in Singapore and found that the *perceptible relevance* of the innovative channel was a very significant factor that influenced the decisions of online customers in the country. Li et al. (1999) had earlier found that customers who already made online purchases generally perceived web-channels to be of a higher utility than those who did not, and that frequent online buyers saw the web as a more useful channel than occasional online buyers. Hence, customers who see the IB channel as useful for their banking needs are more likely to adopt it than those who are yet to discern its usefulness, or who have decided that it is not useful for their banking needs.

The *relative ease-of-use (or user-friendliness)* of the web-channel is the third factor in the web-attributes category. Together with 'perceived usefulness', this factor makes up the core of Davis' (1989) TAM model. Many scholars who have studied consumers' technology adoption behaviours since the 1990s have either adopted or adapted the TAM model in their studies. For instance, adapting the model to a study of direct banking services adoption in the UK, Lockett and Litter (1997) observed that the *complexity* of the technology-driven direct banking channel

was a major concern of the consumers, which indicated that consumers would not adopt technology-based services if they found the channel perplexing. This notion was also supported by findings from a study carried out in Singapore by Liao and Cheung (2002) in which web-users' expectations of the *user-friendliness* of their Internet banking websites strongly influenced their Internet banking adoption decisions. Wang et al. (2003) were the first scholars to test the TAM model verbatim in the Internet banking context.

Researching the determinants of web-users' acceptance of Internet banking in Taiwan, the scholars confirmed that both *perceived ease of use* and *perceived usefulness* had a strong positive effect on the respondents' intention to use Internet banking systems. Also, Eriksson et al. (2005) used the TAM model to study customer acceptance of Internet banking in Estonia and confirmed that both *perceived usefulness* and *perceived ease of use* contributed significantly to consumers' intention towards internet banking usage and ultimately led to actual usage adoption. Additionally, in a study of the effects of personal consumer characteristics and e-banking technology characteristics on electronic banking adoption among US consumers, Kolodinsky et al. (2004) also observed that the easier e-banking was for prospective customers to try out and use, the greater the likelihood that adoption would take place.

The next two web-channel characteristics are related. They include *effective communications* by banks about the relevance and benefits of the IB channel as well as *adequate registration information and usage guidance* on the IB website. Waite and Harrison (2004) researched the importance of *information* provision as a function of e-banking websites. They contend that all purchase transactions (online or offline) are perceived as risk-taking and therefore require *adequate information and guidance* for decision-making. Bellman et al. (1999:p34) had noted that *information searching* was the most important predictor of online consumer behaviour in general. *Information* is therefore valuable for not only making informed consumption decisions, but also reducing the perception of risks and uncertainties associated with transaction decisions. It also provides the much needed guidance to enable customers register successfully for IB and to navigate through the mesh of web functions as they use the Internet banking services. Waite and Harrison (2004) therefore concluded that the more *adequate and relevant information and guidance* is provided by an Internet banking website, the more likely it is that customers will adopt the IB services of that bank.

The incontrovertible necessity of *information* in Internet banking adoption was first highlighted by Sathye (1999) when the author observed that the *lack of awareness* of Internet banking was the main hindrance to IB diffusion in Australia in those early days. The scholar found that 68% of respondents in her survey were not aware or did not understand the benefits and relevance of Internet banking at that time. Also, 86% of the personal customers and 78% of the business customers surveyed said that they preferred the benefits to be explained before they would be prepared to adopt Internet banking (ibid). This indicated that there was a huge necessity for more *effective communication* of the importance and benefits of the new channel by banks in the country. The author therefore called on bank marketers to create more *awareness* of the IB channel by providing more *information* that emphasised the benefits of channel on their websites, educating customers about efforts being made to allay their security concerns, and developing closer bank-customer relationships. Other scholars such as Waite and Harrison (2004), Durkin (2007), Kuisma et al. (2007), and Laukkanen et al. (2008) have also observed the

continued necessity and influence of *effective communication* and *adequate information and usage guidance* on IB adoption trends in the UK, Sweden, Ireland, USA and Finland.

Next is the all-important issue of *security and privacy concerns* about the safety of the Internet banking channel. The issue of *security and trust* happens to be one of the earliest and most pressing concerns of online customers following the incursion of the Internet technology into commercial activities (Daniel, 1999). Majority of the existing studies in the area of Internet banking contain in one context or another an element of customers' anxieties about the *security and privacy risks* associated with Internet transactions. Research has shown that the perception of uncertainty and risks is inherent in most business transactions but more so in the Internet context, where the parties in the transactions are not physically in the same place (Suh and Han, 2002).

Since online transactions are conducted remotely between Internet users in various places around the world, it is therefore believed that private and confidential information criss-crosses the world in a cyber-environment that is potentially prone to invasion, interception and theft. In a study of Internet banking adoption in Finland, Mattila et al. (2001) observed that the very low Internet banking adoption rate among elderly people in the country was attributed to their perception of the Internet channel as "a too detached and insecure method of banking." The authors reasoned that this perception affected the *senior citizens'* adoption decision because they had been associating "bank transaction with human interaction" all their lives and could not easily come to terms with conducting banking transactions remotely with people they could not see or hold responsible if anything went wrong.

In the UK, Hamilton and Hewer (2000) reviewed the activities of some select UK financial services providers and the ways they marketed the Internet banking channel to their customers. The scholars found that most providers promoted the *customer-empowerment potential* of the Internet to their customers at that time, with their unique selling points being *increased consumer control*, *accessibility* and *convenience*. Only a few alluded to the *system of security* they had in place for protecting their customers from the risks associated with Internet banking. Nonetheless, the scholars maintained that the banking customers might not take advantage of the benefits of the Internet channel touted by the financial service providers without an adequate assurance "of a proper level of protection" provided by both the UK Government and the service providers themselves.

Chung and Paynter (2002) noted that *invasion of privacy* was the main security anxiety of online banking customers in New Zealand. They conceptualised privacy as "the right to be let alone", which is compromised when individuals lose a substantial measure of their control over their personal information and its usage. In their study of the effects of *privacy issues* on Internet usage in the country, the scholars found that websites which displayed *privacy statements* telling customers that their privacy rights were protected recorded more patronage than those without any such statements. They therefore concluded that Internet customers would always seek privacy protection, and that *privacy statements* on the banking website would offer great help in relieving customers' concerns about *security and privacy risks* associated with Internet banking. Furthermore, Eriksson et al. (2005) studied customers' attitudes to the issues of *security, privacy and trust* in the Estonian banking sector. Findings from their study supported an earlier assertion

by Jun and Cai (2001) that customers were more concerned with the *security* of Internet banking than they were with that of traditional banking, and also that customers' trust in Internet banking was dependent on their confidence in their banks' perceptible reliability and integrity. The scholars therefore asserted that concern for *trust* reflects customers' apprehension of Internet banks' trustworthiness in seeking to reconfirm their expertise and reliability, and also that *trust* is a major antecedent of Internet banking adoption.

Lastly, Lichtenstein and Williamson (2006:p57) report that the respondents in their study confirmed having considered Internet-based *risks* in making banking channel choices, but note that Australian banking customers have, over the years, largely adjusted to the risks associated with the Internet and are increasingly prepared to accept the risks. Hence, the study found *convenience* as a more important factor considered by present day Australian customers in making Internet banking adoption decisions than *security risks*. In this case, the scholars' findings also support those of Nielsen (2005) which indicate that though *security risks* are still a major concern in other countries, Australian Internet users are presently more concerned with the *convenience* of the Internet banking channel than with its *risk*, much unlike the 1999 customers surveyed by Sathye (1999).

CONCEPTUAL FRAMEWORK AND HYPOTHESES OF THE RESEARCH
In line with our inferences from the reviewed literature on the *customer-related* and *channel-related* factors, we proposed that 16 *customer-related* factors jointly determine an *individual customer's readiness for IB adoption* (CibR). In like manner, we also proposed that when clearly perceived by banking customers, the 10 *web-channel factors* also jointly determine the banking institution's *perceived web-channel readiness* for retail customer IB adoption (WCibR). In other words, we hypothesized that the 26 variables jointly constitute the customer and channel *readiness* for IB adoption by individual banking customers, and that they were the prime determinants of a potential online customer's *ability* and *willingness* to adopt Internet banking.

These two categories of intervening variables (synthesized in figures 1 and 2) were integrated into our overall study model (figure 3), in order to investigate the potential relationships between them and retail customers' *attitude* and *intention* towards Internet banking adoption. Each of the two broad constructs (CibR and WCibR) was hypothesized to have a significant influence on retail banking customers' *attitude* to IB adoption (H1 and H3 respectively), and also a significant influence on the *intention* of retail banking customers to adopt Internet banking (H2 and H4 respectively). As illustrated in both the component conceptual models (figures 1 and 2) and in the overall conceptual framework of the study (figure 3), we also hypothesized that the joint influence of the two constructs piggybacks the on the *attitude-intention-behaviour* relationships (H5 and H6) that manifest the retail banking customer's final decision to adopt or not adopt Internet banking (*adoption behaviour*). This behavioural process is consistent with Ajzen's (2005) theory of planned behaviour (TPB).
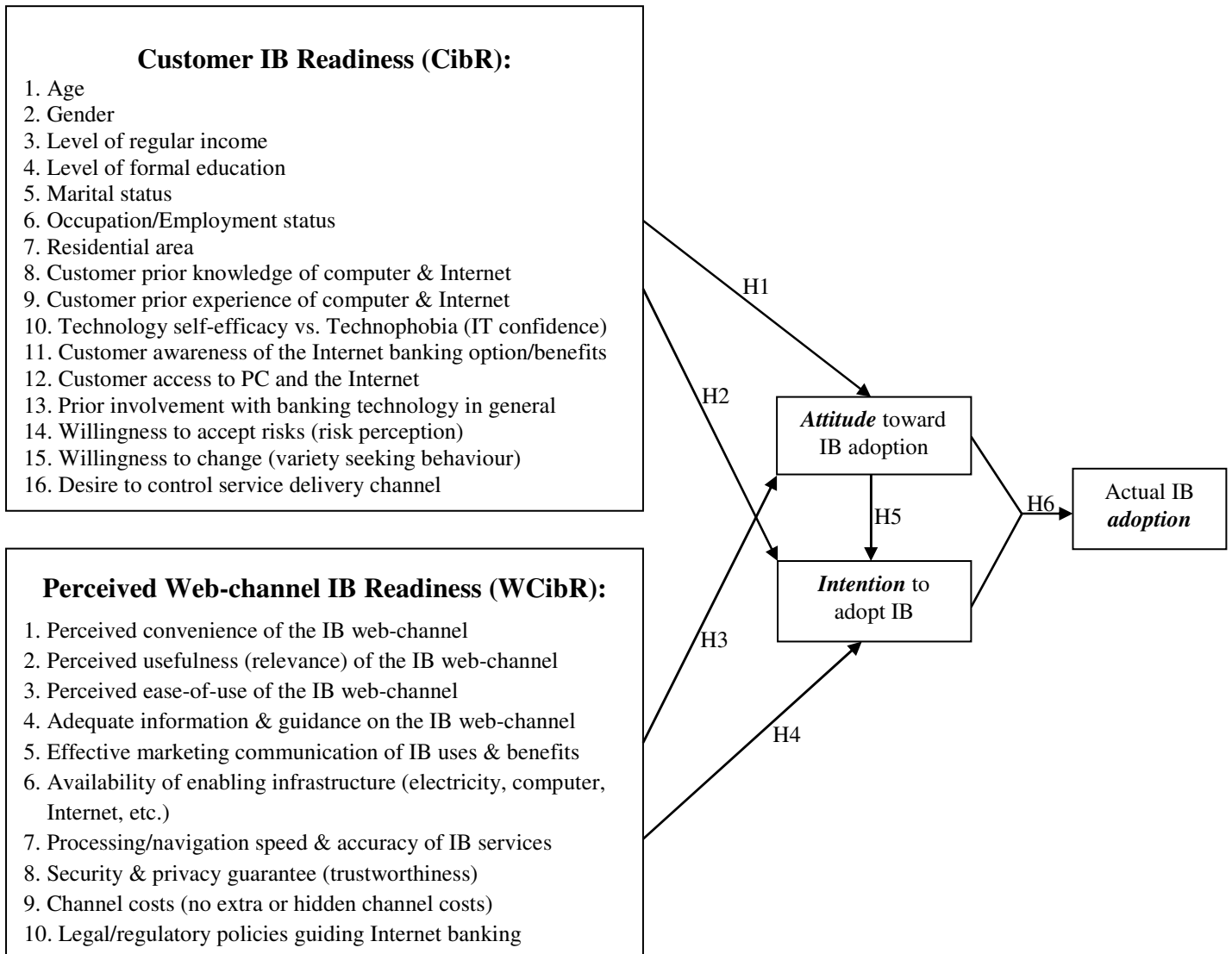
Customer IB Readiness (CibR):

1. Age
2. Gender
3. Level of regular income
4. Level of formal education
5. Marital status
6. Occupation/Employment status
7. Residential area
8. Customer prior knowledge of computer & Internet
9. Customer prior experience of computer & Internet
10. Technology self-efficacy vs. Technophobia (IT confidence)
11. Customer awareness of the Internet banking option/benefits
12. Customer access to PC and the Internet
13. Prior involvement with banking technology in general
14. Willingness to accept risks (risk perception)
15. Willingness to change (variety seeking behaviour)
16. Desire to control service delivery channel

Perceived Web-channel IB Readiness (WCibR):

1. Perceived convenience of the IB web-channel
2. Perceived usefulness (relevance) of the IB web-channel
3. Perceived ease-of-use of the IB web-channel
4. Adequate information & guidance on the IB web-channel
5. Effective marketing communication of IB uses & benefits
6. Availability of enabling infrastructure (electricity, computer, Internet, etc.)
7. Processing/navigation speed & accuracy of IB services
8. Security & privacy guarantee (trustworthiness)
9. Channel costs (no extra or hidden channel costs)
10. Legal/regulatory policies guiding Internet banking

H1
H2
H3
H4
H5
H6

Attitude toward IB adoption

Intention to adopt IB

Actual IB *adoption*

Figure 3: Overall conceptual framework of the study indicating all the initial intervening variables and hypotheses investigated in the present research.

METHODOLOGY

In line with the suggestions of methodology scholars such as Dillman and Tarnai (1989), Dillman et al. (2001), Wilson and Laskey (2003), and Wilson (2006), the primary data for this first examination of the study model were gathered in Scotland between January and April 2008 using a *multi-mode* survey that included email, web-based and paper versions of the same questionnaire. The sample included retail banking customers aged between 18 and 64 years. Individual customers of the above age range who have existing bank accounts at any of the 7 banks and building societies in Scotland were considered qualified to participate in the survey provided that they could use both computer and the Internet. Whether they were already adopters or non-adopters of Internet banking was immaterial.

This decision was necessary because there are millions of banking customers in Scotland and since no specific customers of any individual bank or building society were singled out for this study, it was important to define the sample frame with some restrictive commonalities that would similarly characterize all the qualifying respondents and at the same time enable the use of *convenient intercept* survey method to maximize the response rate. In addition, it was important to survey both IB users and non-users in order to determine the effects of all the 26 isolated variables on the behaviours of the two groups toward IB adoption. The *convenience intercept* survey method has also been used by other Internet banking scholars such as White and Nteli (2004) in the UK, Pikkarainen et al. (2004) in Finland, Laforet and Li (2005) in China, and Shergill and Li (2005) in New Zealand. In administering the *web-based survey*, a hyperlink to the survey website was posted on four *Facebook* social network sites, including the Glasgow city network, as well as the Strathclyde, Aberdeen, and Dundee universities' networks. Emails with attached *email versions* of the survey were also sent to friends, colleagues, students, and professors, encouraging them to complete the survey and also soliciting their assistance in forwarding the attached survey or hyperlink to their own friends and acquaintances in other parts of Scotland.

The University of Strathclyde Information Office also assisted by posting the web-address of the *online survey* on the university's PEGASUS bulletin site, encouraging qualified individuals willing to complete the survey to do so. While the web-based and email versions of the survey served to draw respondents from all parts of Scotland, a concurrent *intercept* administration of the *paper version* was conducted in some commercial streets in the cities of Glasgow, Edinburgh, Aberdeen, Dundee, Saint Andrews, and Stirling. Each respondent was advised to complete only one version of the survey. Regarding sample size, Sathye (1999) notes that "for populations of 10,000 and more, most experienced researchers would probably consider a sample size of between 200 and 1,000 respondents." A sample of 1000 respondents was therefore targeted because the population of retail-banking customers in Scotland is far above 10,000. Moreover, a number of IB research scholars have used exactly 1,000 respondents in their surveys, including Sathye (1999:p327), Kolodinsky et al. (2000:p2), Kolodinsky et al. (2004:p243) and Cheng et al (2006:p1561). A total of 511 responses (51.1%) were received, but 18 of them were rejected because of response duplication, unqualified respondents, and irrelevant data. A total of 493 valuable responses (49.3%) were therefore used in the data analysis.

DATA ANALYSIS AND RESULTS
Of the total 493 respondents, 371 persons (75.3%) were Internet banking users (have previously an Internet banking service) and 122 persons (24.7%) were non-users (have never used any Internet banking service). From the demographic profile of the study sample presented in **table 4**, it is clear that there were generally more Internet banking users than non-users among the study respondents. There were also more respondents within each demographic variable who use Internet banking than those who do not. For instance, there were more IB users among both male and female respondents than non-users. Also, among all those who have some form of formal education, therefore were more IB users in each category than non-users. Of the three categories of "area of residence," there were a lot more people who have used IB in each category than those who have not. There were also a lot more IB users who live in the cities than those in suburban and rural areas. This variation in tends to support the notion that people who live in the

cities will always adopt Internet banking more than those who live in suburban and rural areas (Onyia and Tagg, 2011).

Data reduction and scale reliability:
Before our data analysis, we conducted a data reduction test of the 16 variables in our *customer IB readiness* (*CibR*) scale by means of factor analysis in SPSS, using the principal component analysis (CPA) method. The reason was to be sure which of the 16 variables could actually measure the *customer readiness* construct. Pallant (2007) advises that variables with factor loading scores less than 0.3 should be eliminated from the scale because they are either too weak to contribute meaningfully to the scale measurement or they contribute more to the measurement of something else different from the construct of interest. In our factor analysis results for the *CibR* scale (**appendix 1a**), five variables (*age, gender, marital status, occupation/employment status,* and *technology self-efficacy*) had factor loading coefficients lower than 0.3 and so were suppressed by SPSS. The 11 remaining variables all scored above 0.45 and were retained in the *CibR* scale with a 0.714 KMO-measure of sampling adequacy (**appendix 2a**). In the factor analysis results for our *web-channel IB readiness (WCibR)* construct (**appendix 1b**), one variable (*availability of enabling infrastructure*) scored lower than 0.3 and was suppressed by SPSS. The 9 remaining variables were retained in the *WCibR* scale, with a 0.857 KMO-measure of sampling adequacy (**appendix 2b**).

However, to ensure that we were right in eliminating the errant variables from our scales, we tested the composite reliabilities of the two *readiness* scales (*CibR and WCibR*) with all the original variables. The aim was to reconfirm the contributory powers (item-reliability coefficients) of all the constituent variables in each scale and also to determine each scale's convergent validity and internal consistency. A Cronbach's alpha value of at least 0.6 is considered desirable for good construct validity (Hair et al., 2006), while item coefficients that are more than 0.3 are desirable for good item reliability/internal consistency (Pallant, 2007). According to the author, item values that are negative and those that are less than 0.3 suggest that the items may be measuring underlying constructs totally different from the scale as a whole. Our initial composite reliability test for *Customer IB Readiness* (*CibR*) indicated a Cronbach's alpha of 0.65. This seemed good, but two of the items (*Occupation/employment status* and *Technology self-efficacy*) returned low and negative coefficients, while three others (*age, gender,* and *marital status*) had lower than 0.3 correlation values.

This confirmed that we were right in eliminating the 5 aberrant items from our *customer IB readiness* (*CibR*) scale. Moreover, when the composite reliability test was re-run for the revised *CibR* scale with the 11 remaining variables, the results (**Table 5, number A**) yielded a much better Cronbach's alpha (0.77), while the 11 retained items also produced positive "corrected item-total correlation" values greater than 0.3 each. This indicated a good internal consistency among the items and also a good construct-validity reliability of our revised *CibR* scale for the dataset. The initial scale reliability test of the second construct, *web-channel IB readiness* (*WCibR*), was also conducted with all the 10 original variables in the scale so as to be sure that we were right before eliminating the variables supressed by SPSS as weak in our factor analysis. The test yielded two variables with less than 0.3 correlation values, including *availability of enabling infrastructure* (which SPSS had supressed as having lower than 0.3 factor-loading score) and *legal/regulatory policies*.

These two items were then removed from the *WCibR* scale, and when the scale reliability test was re-run, the *web-channel IB readiness* (*WCibR*) scale produced a Cronbach's alpha value of 0.86 with all the 8 remaining items bearing "corrected item-total correlation" values of 0.4 or above (**Table 5 number B**). This indicates that each of the eight remaining items in the revised *WCibR* scale exhibited good item reliability, and also that the scale possesses good construct-validity reliability for our dataset. We also tested the construct-validity reliabilities of the *attitude* and *intention* predictor constructs which we hypothesized as IB *adoption behaviour* determinants in the study. The validity test results also indicated that the *attitude-intention-behaviour* relationship in the study model was quite reliable for our dataset (**Table 5 number C**).

Hypothesis tests:
Three multivariate statistical tests in SPSS were used in our data analysis. One-way ANOVA (**tables 6 and 7**) was employed in analysing the associations of the *CibR* and *WCibR* constructs with *customer attitude* and *customer intention* toward IB adoption. Standard Multiple Regression (**table 8**) was used in testing the likelihood that *attitude* and *intention* will predict actual IB *adoption behaviour*. Then, Logistic Regression (**tables 9, 10 and 11**) was applied in testing our hypotheses. Our first ANOVA results presented in **table 6** indicate that *customer readiness*, as measured by our revised *CibR* scale, is significantly and positively associated with both *customer attitude* and *customer intention* toward Internet banking adoption. Although the F-value (i.e., variance due to source effect versus variance due to error or chance) of the effect of *customer readiness* on *intention* is greater than that of *customer readiness* on *attitude* by nearly 5:1 ratio, both values are much greater than 1.

The F- and sig. values (**tables 6**) suggest that the variances in *customer attitude* and *customer intention* toward Internet banking adoption are significantly due to the effects of *customer readiness* rather than error or happenstance. Similarly, in our second ANOVA results presented in **table 7**, the *web-channel readiness* construct, as measured by our revised *WCibR* scale, also shows a positive and significant relationship with both *customer attitude* and *customer intention* toward Internet banking adoption. Both F-values are greater than 1 which indicates that the variances in *customer attitude* and *customer intention* toward IB adoption are also due to the effects of *web-channel readiness* rather than error or chance, even when the effects of *web-channel readiness* on them do not seem as significant as those of *customer readiness*.

In testing our hypotheses, we ran standard multiple regression tests and used the Chi-square (X^2) and Pearson correlation coefficients (**table 8**) to analyse the six relationships we hypothesized in the study model. Correlation coefficients that are larger than 0.3 show better support for hypotheses (Pallant, 2007:p155). This is because they are indicative of some meaningful relationship existing between each independent variable in a predictor construct and the dependent construct of interest. Our results presented in **table 8** show that the correlation coefficients of most of the independent *customer and channel readiness* variables meet the above criterion except those of *area of residence* and *desire to control choice of service channel,* both of which fell below 0.3 in their contribution to the ability of *customer readiness (CibR)* to influence both *attitude* and *intention* toward IB adoption.

However, given that the Pearson coefficients of all the other *customer readiness* and *web-channel readiness* variables are greater than 0.3 for both *customer attitude* and *intention*; that the

Chi-square (X^2) of each of our hypothesized relationships is higher than the *critical value* for it; and also that all the sig. values are also 0.05 or less, it is clear that our six hypotheses (H1, H2, H3, H4, H5, and H6) were all supported by the data. The results therefore confirm that a significant positive relationship exists between *customer readiness (CibR)* for Internet banking and *customer attitude* to Internet banking (H1); that there is a significant positive relationship between *customer readiness* for Internet banking adoption and *customer intention* towards it (H2); that *web-channel readiness* for Internet banking adoption is positively and significantly related to *customer attitude* to it (H3); that *web-channel readiness* is also positively and significantly related to *customer intention* toward Internet banking adoption (H4); that *customer attitude* to Internet banking is positively and significantly related to *customer intention* toward adopting it (H5); and also that both *customer attitude and intention* have a joint positive and significant effect on the *actual behaviour* of the customer in adopting Internet banking (H6).

Model refinement, further analyses, and conclusions:
In order to further refine our overall study model and to determine the ability of our independent predictor constructs (*CibR* and *WCibR*) to collectively predict the categorical (dichotomous) dependent variable (*Internet banking adoption behaviour*), we expunged the two *customer readiness* variables that produced lower than 0.3 Pearson coefficients (*area of residence* and *desire to control choice of service channel*). We then employed *logistic regression* in SPSS to test the goodness of fit and predictive capability of our final model with the remaining 9 *customer readiness* (*CibR*) variables and 8 *channel readiness* (*WCibR*) variables. The model fit results (**table 9**) suggest that the refined model possesses a significantly good fit to the data. The model also correctly classified 78% of all the categories in the data. In terms of its general sensitivity, it acurately predicted 96% of IB users in the data as users and 79% of non-users as non-users. For positive and negative predictive values, the model was able to predict 78.4% the positive IB adoption characteristics observed in the data and 71% of the negative IB adoption characteristics observed.

The overall predictive capability of the model by Wald test is presented in **table 10**. This shows the importance and direction of the contributory values of all the *9 customer readiness (CibR)* and *8 web-channel readiness (WCibR)* variables in the equation of the final model toward predicting *positive Internet banking adoption behaviour*. According to Pallant (2007), sig. values *less than 0.05* indicate predictor variables with very strong levels of importance in contributing to the ability of the model to predict the dependent variable. In our Wald test results, (**table 10**) only three *customer readiness* variables (*regular income*, *awareness of IB option, uses, & benefits*, and *prior involvement with banking technology in general*) have sig. values less than 0.05. Their Wald values are and higher than the rest and their B-values are also positive. This means that they are the three *customer readiness* predictor-variables that contribute most significantly to the predictive capability of our study model and that their influence on IB adoption is positive, because the more a banking customer has those characteristics, the more he/she is likely to have a positive disposition toward adopting Internet banking. In other words, the more a retail banking customer has a regular flow of income, is aware of the existence and benefits of Internet banking as a service channel option, and has been previously involved with banking technology in general, the more ready he/she is to adopt Internet banking and the more likely it is that he/she will adopt it, all other things being equal.

Similarly, only three *web-channel readiness* variables (*Perceived ease-of-use of the IB web-channel*, *perceived security & privacy guarantee on the channel*, and *perceived channel cost*) have less than 0.05 sig. values. Their Wald values are much greater than those of the other variables, meaning that they are the three *web-channel readiness* predictor-variables that contribute most significantly to the predictive capability of the study model. The influence of two of the variables (*Perceived ease-of-use of the IB web-channel* and *perceived security & privacy guarantee*) on IB adoption is positive, due to their B-values. This means that the more the IB web-channel is perceived to be easy to use and secure, with adequate privacy guarantee online, the more potential retail customers will likely adopt the channel. However, the influence of the third variable (*perceived channel cost*) is negative since its B-value is negative. This is normal, because it means that the *less* the IB web-channel is perceived as having any extra or hidden costs the more banking customers will be predisposed to adopting and using it for banking services. In other words, the more obvious it is that the channel has no extra/hidden costs, the more *ready* it will be for being adopted by potential Internet banking customers, all other things being equal.

In summary, looking at all the analysis results presented in tables 5, 6, 7, 8, 9 and 10, one can see that the overall performance of our study model is quite good. After eliminating low factor-loading variables from our initial conceptual model, eleven *customer-related* and eight *channel-related* predictor variables showed good item reliability in collectively explaining our concepts of *customer readiness (CibR)* and *web-channel readiness (WCibR)* for Internet banking adoption respectively (**table 5**) in the study. Then, in testing the respective associations between *CibR* and customer *attitude* and *intention* toward IB adoption and also the associations between *WCibR* and customer *attitude* and *intention* toward IB adoption, we found that both independent constructs (*CibR* and *WCibR*) had significant positive influence on customer *attitude* and *intention* toward adopting Internet banking (**tables 6 & 7**). Likewise, the hypotheses test results (**table 8**) indicate good support for all our hypotheses in the study, although two of the *customer readiness (CibR)* variables (*area of residence* and *desire to control choice of service channel*) revealed apparent weakness (each having a coefficient below 0.3) in supporting our hypotheses 1 and 2. The two variables were expunged leaving 9 *customer readiness* variables that contribute more pointedly to the ability of *customer readiness* to affect customer *attitude* and *intention* toward IB adoption.

Based on the results presented in **table 9**, the goodness-of-fit tests of the final study model show a very good fit (sig. *greater* than 0.05) and a good predictive ability (78%) relative to our dataset. In addition, with 78.4% and 71% respective abilities for positive and negative predictions, the overall capability of the model's independent predictor constructs (*customer readiness* and *web-channel readiness*) to jointly predict the dependent construct (*actual Internet banking adoption behaviour*) is also good. Lastly, three variables from each independent predictor construct possess the ability to contribute most significantly to the prediction of *IB adoption behaviour* by retail banking customers (**table 10**). On one hand, the three most significant variables within the *customer readiness* construct include *regular income*, *awareness (of IB option, uses, & benefits)*, and *prior involvement with banking technology in general*. On the other hand, the three most significant *web-channel readiness* variables are *perceived ease-of-use of the IB web-channel*, *perceived security & privacy guarantee (trustworthiness)*, and *perceived channel cost (no extra or hidden channel costs)*. The sig. values of all these six variables are below 0.05 (**table 10**).

 DISCUSSION: THEORETICAL AND MANAGERIAL IMPLICATIONS
Theoretical implications:

For theoretical implications, the six most significant variables validated in our study also support the findings in various existing Internet banking adoption studies. For instance, on the side of *customer readiness* variables, the effect of *regular income* on online banking channel choice was also confirmed in studies by Kolodinsky et al. (2004) in the US and Lichtenstein and Williamson (2006) in Australia. The scholars found that regular and higher income earners are more likely to adopt internet banking than those with low and irregular income. Besides, Lassar et al. (2005) also assert that *income* is the most significant demographic factor that affects Internet banking adoption in the USA, thus confirming the earlier findings by Kolodinsky et al. (2000; 2004) that Internet banking is most attractive to regular/higher income earners. *Awareness (of the Internet banking option, uses and benefits*) is also an important affecter of IB adoption that was has been confirmed in this and other studies. Studies by Suganthi et al. (2001) and Sohail and Shanmugam (2003) in Malaysia, as well as those by Kuisma et al. (2007) and Laukkanen et al. (2008) in Finland, also suggest that customers' level of *awareness* regarding knowing, being sure, or not being sure, whether their banks offer Internet banking affects their IB adoption behaviours in their respective countries.

The *awareness* variable is closely related to availability or lack of *effective communication and information* from financial firms because it is such *effective communication and information* that should empower retail banking customers with the requisite *awareness* of the IB option, uses, and benefits (Waite and Harrison, 2004). The impact of *prior involvement with technology in general and banking technology in particular* (sometimes conceptualised as *expertise)* was also confirmed in studies by Lassar et al. (2005) in the USA, Floh and Treiblmaier (2006) in Austria, Maenpaa et al. (2008) in Finland, and Polasik and Wisniewski (2009) in Poland. These scholars perceive *level of prior involvement* as an important behavioural variable which affects consumers' banking channel selection, adoption, and retention in both offline and online service contexts. For example, in their study of IB adoption patterns by US customers, Lassar et al. (2005) characterised *customer involvement with banking technology* in terms of both the purpose of involvement ("utilitarian" or "hedonistic") and the level of involvement (depth and breadth of experience). Their study results show that the respondents' Internet banking adoption decisions were positively affected by both their *web experiences* and the *intensity of their internet usage*.

Regarding the three most significant *web-channel readiness* variables validated in our study, quite a number of existing studies also support the effects of these variables on IB adoption behaviours. For instance, in line with studies conducted by Kolodinsky et al. (2004) in the USA, Bauer et al. (2005) in Germany, Eriksson et al. (2005) in Estonia, Amin (2007) in Malaysia, Hernandez and Mazzon (2007) in Brazil, and Lee (2009) in Taiwan, *perceived ease of use* is one of the most popular antecedents of Internet banking channel adoption. Usually conceptualised to include the perceived flexibility, triability and user-friendliness of a bank's website, *perceived ease of use* has been found to be a very strong motivator or inhibitor of customer adoption of Internet banking. Kolodinsky et al. (2004: p242) encapsulate the compelling importance of *perceived ease of use* of the IB channel by asserting that "the easier e-banking is to try out (and to use), the greater the likelihood of its adoption."

The second *channel-readiness* variable (*perceived security & privacy guarantee*) is also well-supported in the literature. Singh (2004) in South Africa, Bauer et al (2005) in Germany, Shergill & Li (2005) in New Zealand, Eriksson et al (2005) in Estonia, Fock and Koh (2006) in Singapore, Chang et al (2006) in Taiwan, Lichtenstein & Williamson (2006) in Australia; Durkin (2004) in Sweden, USA, UK and Northern Island, Nor and Pearson (2007) in Malaysia, Poon (2008) in Malaysia, and Polasik and Wisniewski (2009) in Poland all confirmed the very significant influence of *perceived channel security* on IB adoption as the main factor that helps banks to convey the much-needed *trustworthiness* to their customers. In order to trust the IB channel, most banking customers would like their financial institutions to guarantee the *safety* of their transactions and the *privacy* of their personal information. For instance, in his study of South African customers, Singh (2004:p187) observes that "*security* was the prime issue for those not banking online. Potential customers wanted *guaranteed safety* and loyalty rewards to get them to bank online."

The third *channel readiness* variable we validated in this study (*perceived channel cost, i.e., no extra or hidden channel costs*) is yet another very important affecter of IB adoption trends documented in the literature from various parts of the world. These include findings from the studies by King and Gribbins (2002) in the US, Howcroft et al. (2002) in the UK, Sohail and Shanmugam (2003) in Malaysia, Shih and Fang (2004) in Taiwan, Laforet and Li (2005) in China, Rotchanakitumnuai and Speece (2005) in Thailand, Chiemeke et al (2006) in Nigeria, Lichtenstein and Williamson (2006) in Australia, Boateng and Molla (2006) in Ghana, and Poon (2008) in Malaysia. In developed countries, the costs saved by financial institutions in transacting on the Internet (instead of opening more "brick and mortar" branches) are passed on to customers, such that Internet banking services become cheaper for them. In developing countries, however, the costs of computer ownership, Internet connectivity and the extra fees charged by financial institutions for *online services* are a major concern to potential IB customers (Onyia and Tagg, 2011). This obviously affects their Internet banking adoption decisions as they want their banks to assure them that there would be *no extra or hidden costs* for the online services if they sign up for Internet banking.

Based on the foregoing, we propose that the 3 *customer-related* and 3 *channel-related* variables that have shown the most significant potential to predict *IB adoption behaviour* in this study be considered as *potential universal antecedents* of Internet banking adoption by global retail banking customers. We therefore synthesize the six variables into what we call an *equal evaluation model* (*EQUAEVAL*) *of potential universal antecedents of retail customer adoption of Internet banking* (**figure 4**). We also propose that this *EQUAEVAL model* be further examined in other national and cross-national contexts because we strongly believe that *an equal evaluation and sustenance* of both the *retail customer's readiness* and the *IB web-channel's readiness* for Internet banking adoption will guarantee the adoption and continued usage of Internet banking by retail banking customers.
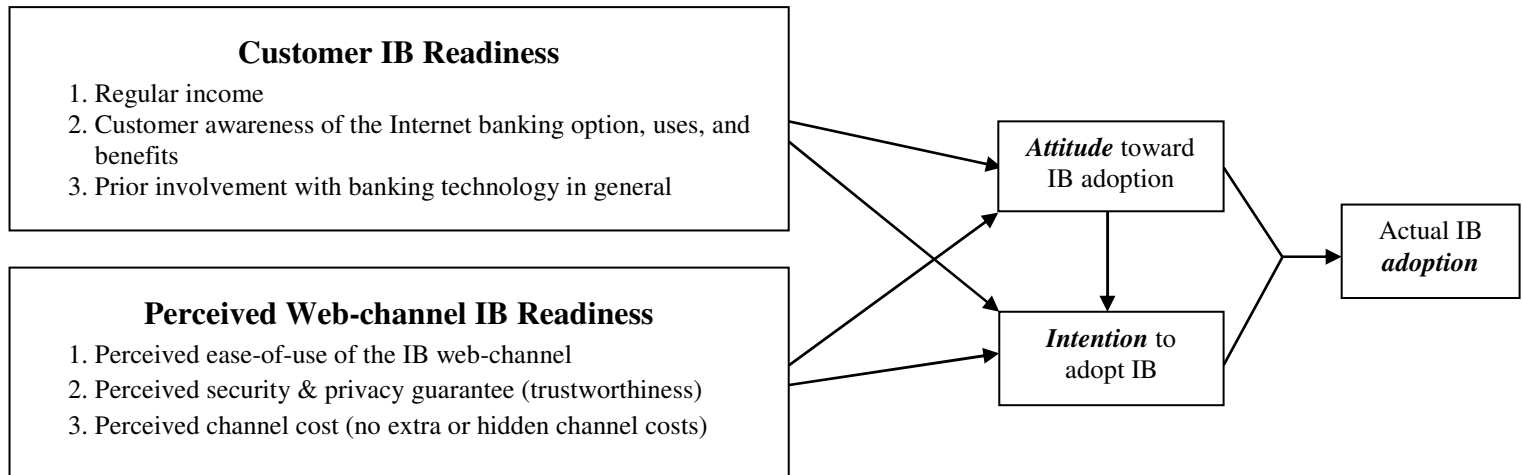
```
┌─────────────────────────────────────────────────┐
│              Customer IB Readiness                │
│                                                   │
│  1. Regular income                                │
│  2. Customer awareness of the Internet banking    │
│     option, uses, and benefits                    │
│  3. Prior involvement with banking technology     │
│     in general                                    │
└─────────────────────────────────────────────────┘

┌─────────────────────────────────────────────────┐
│        Perceived Web-channel IB Readiness         │
│                                                   │
│  1. Perceived ease-of-use of the IB web-channel   │
│  2. Perceived security & privacy guarantee        │
│     (trustworthiness)                             │
│  3. Perceived channel cost (no extra or hidden    │
│     channel costs)                                │
└─────────────────────────────────────────────────┘
```

Attitude toward IB adoption → *Intention* to adopt IB → Actual IB *adoption*

Figure 4: The *EQUAEVAL* model of retail customer adoption of Internet Banking

Managerial implications:

Besides the preceding theoretical significance of the six *readiness* concepts validated in this study, our results also highlight some managerial implications for IB marketing. Practically, one can surmise from our findings that if an offline retail banking customer possesses a *regular source of income*; is well *aware of the Internet banking channel option, uses*, *and benefits* offered by his or her bank; and has been *previously involved with general banking technologies* (such as ATM, e-payments, debit/credit cards, emails, etc.), he or she will most likely be inclined to adopting Internet banking if the bank's IB web-channel offers *a guarantee of online security and privacy*; has *no extra or hidden channel cost*; and is *perceptively ease to use*. Banking and financial services managers therefore need to focus their marketing strategies on existing and potential customers who have *regular and steady sources of income* and are already involved in some *banking technologies* in general. This means that they should strive to introduce all their regular/offline customers to services such as ATMs, debit and credit cards usage, and email communications right from the time they become customers, as preludes to Internet banking. The financial institutions should also focus their promotional efforts on creating significant *awareness of their IB channel* as an alternative to their offline "Brick and Mortar" channel, and also *effectively communicating* its uses and benefits to all existing and potential customers with adequate guiding information (White and Harrison, 2004).

At the same time, banking and financial services managers should ensure that they provide concrete evidences of *guarantee of the security of customers' online transactions* as well as the *privacy of their personal information*. They should also provide all new customers a guarantee that *there will not be any extra or hidden charge* if they sign up for the IB channel option. Moreover, they should equally ensure that their Internet banking websites are *very easy to navigate*, with *registration and usage processes* that are *not cumbersome* at all. In conclusion, it is our fervent belief that if banks and financial services firms take adequate care of the marketing and managerial issues mentioned above, most of their offline customers will ultimately transform into online customers and most of their new customers will adopt Internet banking from the onset.

LIMITATIONS AND FUTURE RESEARCH

What we have accomplished in this study was basically to conceptualize the theory of *customer readiness* and *channel readiness* as twin-determinants of retail customers' adoption of Internet banking, and also to conduct an initial test of the concept among individual banking customers in Scotland. However, the fact that our study is focused on Scotland alone is a limitation because our findings cannot be generalized across other national contexts without testing them in those nations. We also hesitate to claim that the six *readiness* variables validated in our final study model (**figure 4**) are the true *universal antecedents* of global retail banking customers' adoption of Internet banking. We only propose them as *potential* candidates for the universal antecedents of global IB adoption.

Accordingly, even though the 6 most significant variables in our final validated model are also supported in several existing studies and so are good *universality* candidates, it may be better to re-examine all the 26 variables in our original study model in future cross-national or multinational comparative studies before anyone can truly claim any of them as *universal antecedents* of global retail customer adoption of Internet banking. We therefore propose, for future research, that re-investigations of our original *16 customer-readiness variables* and *10 channel-readiness variables* be conducted in multiple cross-national comparative contexts in order to determine the true *universality* of the variables as *global antecedents* of Internet banking adoption by retail customers.

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Table 1: Socio-economic statistics of Scotland and the UK (2011/2012):

Indices	UK		SCOTLAND	
	Figure	**%**	**Figure**	(% of the UK)
Overall Population	63.05m	100	5.3m	8.4
Population under 16 years	11.79m	18.7	0.91m	7.7
Population of pension age and over (65yrs for men; 60yrs for women)	10.78m	17.1	1.09m	10.1
Population of **active adults** (16 – 64 for men; 16 – 59 for women)	40.48m	64.2	3.3m	8.2
Gross Domestic Product (GDP)	£1.56 trillion	100	£126 billion	8.1
GDP per capita	£24,742		£23, 774	96.1
Annual GDP growth rate (2011)		1.7		1.3
Economic Productivity Rate (US$)	80		79	
Employment Rate (% of **active adults**)		70.5		70.5
Unemployment Rate		7.7		7.6
Per-head Disposable Income (2010)	£15,709		£15,342	

Sources: Scottish Enterprise (2007, 2012); The Scottish Government (2012); UK Office for National Statistics (2008, 2012); General Register Office for Scotland (2012); Nationmaster (2007, 2012); and CIA World Factbook (2007, 2012).

Table 2: Internet banking diffusion in Scotland and the UK (2010):

ITEMS	SCOTLAND	UNITED KINGDOM
National population	5.3 million	63.05 million
Adult population (16+)	4.39 million	51.26 million
Number of indigenous banks	**7** (including 3 building societies)	45 (including building societies)
Internet transacting banks	**7** (including 3 building societies)	45 (including building societies)
Internet penetration (individual users)	3.21 million (73.2% of adults) (60.6% of population)	39 million (76% of adults) (62% of population)
Internet banking users (individuals)	**2.37 million** (73.8% of Internet users) (54% of adults) (44.7% of population)	**27.7 million** (71% of Internet users) (54% of adults) (43.9% of population)

Sources: UK Office for National Statistics (2008, 2012); The Scottish Government (2012);
General Register Office for Scotland (2012); BSA (2008, 2012); and *cscb* (2007, 2012).

Table 3: Response rates achieved via the three survey modes:

MULTI-MODE SURVEY	RESPONSES	
	COUNT	%
Web-based survey	424	86
Email Survey	7	1.4
Intercept paper survey	62	12.6
TOTAL USEFUL RESPONSES RECEIVED	493	100

Source: The survey conducted between January and April 2008.

Table 4: Demographic profile of the study respondents:

Demographic characteristics (with code numbers)	IB users		Non-users		Total respondents	
	N	*%*	*N*	*%*	N	*%*
Age: 1) 55 – 64	3	0.6	3	0.6	6	1.2
2) 45 – 54	17	3.4	11	2.2	28	5.7
3) 35 – 44	43	8.7	11	2.2	54	11
4) 25 – 34	101	20.5	17	3.4	118	23.9
5) 18 – 24	207	42.0	80	16.2	287	58.2
Gender: 0) Female	212	43.0	75	15.2	287	58.2
1) Male	159	32.3	47	9.5	206	41.8
Educational level:						
1) Doctorate degree	12	2.4	4	0.8	16	3.2
2) Masters' degree	90	18.3	22	4.5	112	22.7
3) Bachelors' degree	145	29.4	32	6.5	177	35.9
4) College/professional diploma	36	7.3	10	2.0	46	9.3
5) Secondary School	51	10.3	26	5.3	77	15.6
6) Primary School	37	7.5	27	5.5	64	13.0
7) No Formal Education	0	0.00	1	0.2	1	0.2
Marital status:						
1) Married	77	15.6	19	3.9	96	19.5
2) In civil partnership	18	3.7	6	1.2	24	4.9
3) Widow/widower	1	0.2	0	0.0	1	0.2
4) Divorced/separated	7	1.4	3	0.6	10	2.0
5) Single	268	54.4	94	19.1	362	73.4
Income level:						
1) Very high income (Above £200,000 per annum)	1	0.2	1	0.2	2	0.4
2) High Income (£50,000 – 199,999 pa)	27	5.5	9	1.8	36	7.3
3) Medium income (£30,000 – 49,999 pa)	129	26.2	33	6.7	162	32.9
4) Low income (£20,000 – 29,999 pa)	138	28.0	44	8.9	182	36.9
5) Very low income (Below £20,000 pa)	76	15.4	35	7.1	111	22.5

Employment status:						
1) Professional/Expert	34	6.9	6	1.2	40	8.1
2) Management	16	3.2	6	1.2	22	4.5
3) Self-employed	7	1.4	3	0.6	10	2.0
4) Full-time salaried employee	40	8.1	10	2.0	50	10.1
5) Domestic employee	0	0.0	1	0.2	1	0.2
6) Student/part-time worker	273	55.4	93	18.9	366	74.2
7) Retired	0	0.0	1	0.2	1	0.2
8) Unemployed	1	0.2	2	0.4	3	0.6
Area of residence:						
1) Urban areas - cities	258	52.3	98	19.9	356	72.2
2) Semi/Suburban areas - towns	99	20.1	22	4.5	121	24.5
3) Rural areas - villages	14	2.8	2	0.4	16	3.2

(Note: Except gender, all variables were reverse-coded, such that 1 denotes the highest estimation while 3, 5, 7, or 8 each denotes the lowest estimation within their respective ranges).

Table 5: Composite reliability analysis of the study model by Cronbach's alpha:

Construct	Internal consistency (Item reliability)	Construct validity (Cronbach's Alpha)
Recommended value	>0.30	>0.60
A. Customer IB Readiness (CibR):		0.77
1. Regular income	0.52	
2. Formal education	0.45	
3. Area of residence	0.32	
4. Prior knowledge of computer & the Internet	0.56	
5. Prior experience of computer & the Internet	0.45	
6. Awareness of IB option, uses, and benefits	0.47	
7. Customer access to computer & the Internet	0.40	
8. Prior involvement with banking technology	0.43	
9. Willingness to accept online risks	0.34	
10. Willingness to change (to tech-based banking)	0.33	
11. Desire to control choice of service channel	0.31	
B. Web-channel IB Readiness (WCibR):		0.86
1. Adequate information and guidance online	0.53	
2. Perceived ease of use of the web-channel	0.52	
3. Effective communication of IB uses & benefits	0.54	
4. Perceived usefulness (relevance) of the channel	0.67	
5. Perceived channel convenience (time-saving & 24/7 availability)	0.65	
6. Processing/navigation speed & accuracy of IB services	0.48	
7. Security & privacy guarantee (trustworthiness)	0.51	
8. Channel cost (no extra or hidden channel costs)	0.40	
C. IB adoption behaviour:		0.74
1. Customer *attitude* to IB adoption	0.6	
2. Customer *Intention* to adopt IB	0.6	

Source: The survey

Table 6: One-way ANOVA of the association of the *customer readiness (CibR)* variables with customer *attitude* and *intention* toward Internet banking adoption:

Customer readiness (CibR) variables (n = 493)	Association with *Attitude*				Association with *Intention*			
	Mean	F-value	Sig.	S.E.	Mean	F-value	Sig.	S.E.
1. Prior knowledge of Computer & the Internet	1.58			0.07	1.58			0.06
2. Prior experience with Computer & the Internet	1.87			0.06	1.87			0.05
3. Formal Education	3.29			0.04	3.29			0.03
4. Regular Income	3.48			0.04	3.48			0.03
5. Customer access to Computer & the Internet	2.35			0.04	2.35			0.03
6. Awareness of IB option, uses, and benefits	2.18			0.05	2.18			0.04
7. Prior involvement with banking technology	2.06			0.05	2.06			0.04
8. Willingness to accept online risks	1.95			0.04	1.95			0.04
9. Area of residence	1.31			0.11	1.31			0.09
10. Willingness to change/accept change	1.35			0.09	1.35			0.08
11. Desire to control choice of service channel	2.01			0.04	2.01			0.03
*Effects of **CibR** on customer **attitude** and **intention***		3.190	0.000			15.105	0.000	

Source: The survey

Table 7: One-way ANOVA of the association of the *web-channel readiness (WCibR)* variables with customer *attitude* and *intention* toward Internet banking adoption:

Web-channel readiness (WCibR) variables (n = 493)	Association with *Attitude*				Association with *Intention*			
	Mean	F-value	Sig.	S.E.	Mean	F-value	Sig.	S.E.
1. Perceived convenience of the IB web-channel	1.46			0.09	1.46			0.09
2. Perceived usefulness (relevance) of the IB web-channel	1.47			0.09	1.47			0.09
3. Perceived ease-of-use of the IB web-channel	1.40			0.08	1.40			0.08
4. Adequate information & guidance on the IB web-channel	1.38			0.08	1.38			0.08
5. Effective marketing communication of IB uses & benefits	1.63			0.07	1.63			0.07
6. Processing/navigation speed & accuracy of IB services	1.36			0.09	1.36			0.09
7. Security & privacy guarantee (trustworthiness)	1.32			0.08	1.32			0.07
8. Channel costs (no extra or hidden channel costs)	1.19			0.09	1.19			0.08
*Effects of **WCibR** on customer **attitude** and **intention***		2.077	0.040			1.877	0.050	

Source: The survey

Table 8: Hypotheses tests by standard multiple regressions of the relationships between *customer readiness* and *attitude* (H1); *customer readiness* and *intention* (H2); *web-channel readiness* and *attitude* (H3); *web-channel readiness* and *intention* (H4); *attitude* and *intention* (H5); and also between both *attitude & intention and* the *actual adoption behaviour* (H6):

Variables in the study model	Attitude toward IB				Intention to adopt IB				Actual IB adoption behaviour			
	Pearson coefficient	X^2	df	*Sig.*	Pearson	X^2	df	*Sig.*	Pearson coefficient	X^2	df	*Sig.*
Customer readiness (CibR) (H1 & H2)		19.410	11	0.000		54.791	11	0.000				
1. Prior *knowledge* of Computer & the Internet	0.60				0.56							
2. Prior *experience* with Computer & the Internet	0.43				0.40							
3. Formal *Education*	0.52				0.48							
4. Regular *Income*	0.40				0.40							
5. Customer *access* to Computer & the Internet	0.42				0.40							
6. *Awareness* of IB option, uses, and benefits	0.47				0.40							
7. Prior *involvement* with banking technology	0.50				0.48							
8. Willingness to *accept online risks*	0.34				0.30							
9. Area of residence	0.25				0.22							
10. Willingness to *change/accept change* of service channel (variety seeking behaviour)	0.78				0.52							
11. *Desire to control* choice of service channel	0.25				0.24							
Web-channel readiness (WCibR) (H3 & H4)		9.476	8	0.037		7.466	8	0.050				
1. Perceived convenience of the web-channel	0.60				0.65							
2. Perceived usefulness (relevance) of the web-channel	0.45				0.67							

3. Perceived ease-of-use of the web-channel	0.60			0.52				
4. Adequate information & guidance on the web-channel	0.60			0.54				
5. Effective marketing communication of IB uses & benefits	0.55			0.50				
6. Processing/navigation speed & accuracy of IB services	0.48			0.56				
7. Security & privacy guarantee (trustworthiness)	0.61			0.51				
8. Channel costs (no extra or hidden channel costs)	0.67			0.40				
Attitude on Intention (H5)		61.405	1	0.000				
1. Attitude toward IB				0.50				
Attitude & Intention on Adoption Behaviour (H6)					42.853	2	0.000	
1. Attitude toward IB					0.58			
2. Intention to adopt IB					0.60			

Source: The survey

Table 9: Logistic regression test results of the goodness-of-fit, usefulness, and performance of the final model:

Model worthiness tests (block 1)	X^2	df	Sig.	Classification accuracy (% correct)	Model sensitivity (% of correct prediction)	Model predictive value (% of predictive ability)
Omnibus test of model coefficients (sig. must be *less* than 0.05)	62.274	17	0.000			
Hosmer-Lemeshow goodness of fit (sig. must be *greater* than 0.05)	8.424	8	0.393			
Model's ability to correctly classify all categories (overall % of all cases) (Block 0 = 75.3%)				78		
Model sensitivity 1: IB users in the data correctly predicted by the model as users					96	
Model sensitivity 2: IB non-users in the data correctly predicted by the model as non-users					79	
Value of positive prediction (or ability of the model in predicting the positive IB adoption characteristic observed in the data)						78.4
Value of negative prediction (or ability of the model in predicting the negative IB adoption characteristic observed in the data)						71

Source: The survey

Table 10: Logistic regression results of the ability of *customer readiness (CibR)* and *web-channel readiness (WCibR)* in the final model to collectively predict positive Internet banking *adoption behaviour*:

Customer readiness (CibR) variables (n = 493)	IB adoption behaviour						95% CI for odds ratio	
	B-value	SE	Wald	df	Sig. (< 0.05)	Odds ratio	Upper	Lower
1. Prior knowledge of computer & the Internet	0.003	0.230	0.000	1	0.989	1.003	0.639	1.575
2. Prior experience with computer & the Internet	0.226	0.180	1.570	1	0.210	1.253	0.880	1.784
3. Level of formal education	- 0.219	0.123	3.188	1	0.074	0.803	0.632	1.022
4. Regular income	0.357	0.121	8.622	1	0.003	1.428	1.126	1.812
5. Customer access to computer & the Internet	- 0.016	0.124	0.016	1	0.899	0.984	0.771	1.256
6. Awareness of IB option, uses, and benefits	0.438	0.162	7.329	1	0.007	1.549	1.128	2.126
7. Prior involvement with banking technology in general	0.362	0.149	5.933	1	0.015	0.696	0.520	0.932
8. Willingness to accept online risks	0.095	0.140	0.464	1	0.496	1.100	0.836	1.447
9. Willingness to change/accept change of service channel	- 0.118	0.187	0.400	1	0.527	0.888	0.616	1.282
Constant	0.040	0.482	0.007	1	0.934	1.041		
Web-channel readiness (WCibR) variables (n = 493)								
1. Perceived convenience of the IB web-channel	0.570	0.301	3.582	1	0.058	1.768	0.980	3.191
2. Perceived usefulness (relevance) of the IB web-channel	0.502	0.282	3.181	1	0.075	0.605	0.348	1.051
3. Perceived ease-of-use of the IB web-channel	1.065	0.286	13.835	1	0.000	2.900	1.655	5.082
4. Adequate information & guidance on the IB web-channel	0.398	0.307	1.675	1	0.196	0.672	0.368	1.227
5. Effective marketing communication of IB uses & benefits	0.164	0.299	0.299	1	0.585	0.849	0.472	1.527
6. Processing/navigation speed & accuracy of IB services	- 0.277	0.289	0.921	1	0.337	0.758	0.430	1.335
7. Perceived security & privacy guarantee (trustworthiness)	0.750	0.318	5.565	1	0.018	2.116	1.135	3.946
8. Perceived channel cost (no extra or hidden channel costs)	- 0.998	0.312	10.191	1	0.001	0.369	0.200	0.680
Constant	0.841	0.391	4.628	1	0.031	2.320		

Source: The survey

APPENDICES

Appendix 1a:

Factor analysis results of the *customer readiness (CibR)* variables' data reduction test:

Variables	Factor loading scores
1. Awareness of IB, its benefits and Advantages.	.631
2. Prior experience of using computers and the Internet.	.597
3. Prior knowledge of computer and the Internet.	.585
4. Level of formal education	.574
5. Regular income	.569
6. Customer access to a computer and the Internet.	.542
7. Desire to control IB and other banking service channels.	.534
8. Prior involvement with banking technology in general.	.533
9. Willingness to accept risks	.469
10. Willingness to change (to technology-based banking)	.466
11. Area of residence	.461
1. Employment status 2. Age 3. Marital/relationship status 4. Technology Self-efficacy 5. Gender	Suppressed variables

[a]**Extraction Method:** Principal Component Analysis. (1 component extracted).

Appendix 1b:

Factor analysis results of the *Web-channel readiness (WCibR)* variables' data reduction test:

Variables	Factor loading scores
1. Perceived to be useful for customers' banking needs.	.790
2. Perceived to be convenient and time-saving for customers.	.746
3. Effective marketing communication of IB benefits and advantages.	.744
4. Perceived to be fast and accurate in processing and navigation.	.740
5. Perceived to be easy to register for, to try, and to use.	.699
6. Adequate information and guidance.	.688
7. Guaranteed privacy and security of transactions (trustworthy)	.658
8. Involves no extra or hidden Channel Costs.	.581
9. Adequate legal/regulatory policies guiding IB.	.317
1. Availability of enabling infrastructure (electricity, computer, Internet, etc.)	Suppressed variable

[a]**Extraction Method:** Principal Component Analysis. (1 component extracted).

Appendix 2a:
KMO and Bartlett's Test of the web-channel readiness construct:

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.857
Bartlett's Test of Sphericity	Approx. Chi-Square	1669.973
	df	45
	Sig.	.000

Appendix 2b:
KMO and Bartlett's Test of the customer readiness construct:

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.714
Bartlett's Test of Sphericity	Approx. Chi-Square	1838.797
	df	120
	Sig.	.000