

Predicting retail banking customers' attitude towards Internet banking services in South Africa

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A B S T R A C T

This paper investigates the predictors of retail banking customers' attitude towards the adoption of Internet banking services in South Africa. This study extended the Technology Acceptance Model (TAM) by including trust, subjective norm and demographic variables, and presents an empirical validation in South Africa. The results suggest that perceived usefulness, perceived ease of use and trust have significant positive relationships with attitude, while subjective norm has a relationship with attitude, albeit a moderate relationship. Consumers' trust of the Internet banking system emerged as the strongest predictor of their attitude, while demographic variables were found to be weak and poor predictors of customers' attitude. Moreover, the results indicated that, even though customers are sceptical of the Internet banking system, they intend to start using/continue using the service. The managerial implications of these findings on efforts aimed at increasing the adoption of Internet banking use among retail banking customers in South Africa and others operating in similar contexts are noted in this paper. This research also adds value to existing studies of Internet banking in South Africa. Moreover, it makes a contribution to the current literature on customers' attitude towards Internet banking services, which is largely under-researched in South Africa.

Key words: Internet banking, retail banking, attitude, technology acceptance model, South Africa

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Introduction

In the past, the banking industry was made up of a large number of relatively small firms trading in distinctive geographical local markets. Their traditional business, which consisted of taking deposits and giving loans, was delivered through face-to-face contacts with their clients in brick-and-mortar premises. The challenge to expand and capture a larger share of the banking market, in addition to meeting the challenges of increasing costs, demanding customers and growing competition, has driven banks to consider a more revolutionary approach to delivering their banking services (Arnaboldi & Claeys 2008: 3). Consequently, many financial institutions have clearly embarked on the development of technology-driven strategies, which they hope will be translated in terms of customer preference and, therefore, higher returns and higher market penetration (Moutinho & Curry 1994: 191). In other words, a move has been made towards using electronic delivery channels such as the Internet, telephone and mobile phone in private banking (Karjaluoto, Mattila & Pento 2002: 261).

The trend in the financial services industry has been to gradually replace over-the-counter banking with new electronic delivery channels (Thornton & White 2002: 59; Yu & Guo 2008: 8). As a result, recent years (particularly since 1995) have seen many banks embrace electronic banking in order to make banking easier for their customers and also to allow them to offer new services. This reduces the need for customers to visit branch offices (Hernández-Murillo, Llobert & Fuentes 2012). Furthermore, by adopting electronic banking, customers not only enjoy banking services that are accessible, regardless of time and location, but they also enjoy better business terms such as lower commission rates, reliable service quality and time-saving benefits (Yu & Guo 2008: 9).

Despite the convenience and other benefits that these services offer, many customers do not use online banking (Cai, Yang & Cude 2008: 151). According to Singh (2004: 193), South African banks face a significant challenge in terms of encouraging customers to bank online. As Internet banking has become advanced and integral to the provision of banking services to retail customers, banks have seized opportunities to offer more banking services to their customers. Bobbitt and Dabholkar (2001: 425) advised that marketers need to be aware of what affects consumers' attitude and behaviour towards using the technology. Understanding the predictors of customers' attitude is imperative, as it is argued that this attitude has a strong, direct and positive effect on consumers' intentions to actually use the new technology or system (see Hernandez & Mazzon 2007; Eriksson & Nielson 2007; Jaruwachirathanakul & Fink 2005; Bobbitt & Dabholkar 2001).

Banks in South Africa, like elsewhere, are crafting and implementing various strategies to attract new customers and also to increase existing customers' use of Internet banking services. To encourage the use of Internet banking, Herington and Weaver (2007: 415), for instance, noted that banks are both rewarding customers for using online services and penalising customers for using offline services. Thus South African retail banks, like banks elsewhere, charge premium fees for customers who perform banking services over the counter rather than doing the transaction over the Internet. However, too little is being done to identify and predict the factors that influence customers' attitude towards Internet banking services. The available South African studies on Internet banking (see Brown et al. 2004; Green & Van Belle 2003; Singh 2004; Wu 2005) either fall short of examining customers' attitude towards the service or do not consider a wide range of variables. Therefore gaps exist in our understanding of predictors of customers' attitude towards Internet banking in South Africa.

The aim of this paper is to fill this gap by extending the Technology Acceptance Model (Davis 1989) to empirically investigate the factors that influence retail banking customers' attitude towards Internet banking services in South Africa. The underlying model employed in this research will help to better understand the predictors of attitudinal factors that will possibly provide assistance in the diffusion of Internet banking technology by offering leverage points to enhance its adoption in South Africa and other banks operating in similar contexts.

Literature review

Worldwide use of the Internet by business has increased dramatically in recent years. Varadarajan and Yadav (2009: 12) observed that in a growing number of organisations, much, if not all, marketing appears to be Internet-enabled. Many commentators now claim that the Internet is leading to a new period in marketing (see Jones 2009; Thandos, Christos & Nicos 2010; Payton 2009; Todaro 2007). The banking industry is one of the earliest adopters of Internet technology. According to Arnaboldi and Claeys (2008: 2), the Internet, as a new channel for the delivery of financial services, has prompted the financial services industry to completely re-organise its structure. Currently, an increasing number of banks are offering their services over the Internet.

Internet banking (IB) is therefore defined as a banking service that allows customers to access and perform financial transactions on their bank account from their computers with an Internet connection to the bank website, using web browser software such as Netscape Navigator or Microsoft Internet Explorer (Ongkasuwan &

Tantichattanon 2002). At an advanced level, Internet banking is called transactional online banking, because it involves the provision of facilities such as access to accounts, transfer of funds and purchasing of financial products or services over the Internet (Sathye 1999: 325).

The Internet offers banks opportunities to (1) generate additional revenue, (2) build, maintain and develop long-term client relationships through easy access to a broad and increasing array of products, (3) extend marketing and (4) increase cost-saving (see Al-Sukkar 2005; Liao & Cheung 2003). Singer, Douglas and Avery (2010) add that Internet banking also allows banks to easily sell higher-margin non-traditional products (such as insurance, brokerage services and so on) to their customers, thus increasing their business volumes. Furthermore, Giannakoudi (2009: 207) noted that the consistent presence of a bank on the Internet, apart from being a low-cost form of advertisement worldwide, allows even small banks to expand their businesses geographically without being obliged to invest large amounts of money in establishing new branches. In this way, the customer base is broadened, permitting banks to compete in markets that were previously too geographically remote or financially inexpedient to be approached and exploited. A study by ABA Bank Marketing (2010) into online banking access indicates that online banking has enabled consumers to pay greater attention to their finances than before. The study further reveals that online banking has become essential in helping consumers to manage their finances. Customers' attitude towards Internet banking satisfies a personal motive, and at the same time affects their perception and banking habits.

Attitude can therefore be considered as one of the vital concepts in the study of consumer behaviour as, according to the literature, it is the direct determinant of this behaviour (see Castaneda, Rodriguez & Luque 2009; Ajzen & Fishbein 1980; Fishbein & Ajzen 1975). Bogozzi (2001: 173) argues that the most basic attitude theory, which has been widely considered to have a significant theoretical and practical approach, is the Theory of Reasoned Action (TRA) postulated by Fishbein and Ajzen (1975) and Ajzen and Fishbein (1980). This theory is grounded on three precepts: behavioural intention (BI), attitude (A) and subjective norm (SN). This theory proposes that a person's behavioural intention is influenced by the person's attitude (that is, the person's assessment of a favourable or unfavourable outcome from carrying out the behaviour) and subjective norm (such as the perceived social coercion to carry out or not to carry out the behaviour) [$BI=A+SI$]. The practical value of the TRA stems from its broad application, "designed to explain virtually any human behaviour" (Ajzen & Fishbein 1980: 89). Hence it has been applied in a variety of contexts including: recycling (Jones 1990); nutrition (Shepherd & Towler

1992); public land management (Bright, Fishbein & Manfredi 1993); voting (Singh, Leong, Tan & Wong 2001); and condom use (Bosomprah 2001), among others.

Buoyed by the success of the TRA in predicting behaviour across a variety of contexts, Davis (1989) propounded the Technology Acceptance Model (TAM), which is less general and designed specifically to explain computer usage behaviour. The TAM uses the TRA as a theoretical basis for specifying the causal linkages between two key beliefs: perceived usefulness (U) and perceived ease of use (EOU), and users' attitudes (A), behavioural intention (BI) and actual computer adoption behaviour (Davis, Bogozzi & Warshaw 1989: 984). Ease of use (EOU) is "the degree to which the ... user expects the target system to be free of effort" (Davis et al. 1989: 985). Perceived usefulness (U) is the user's "subjective probability that using a specific application system will increase his or her job performance within an organizational context". According to this theory, U is influenced by EOU. Both EOU and U predict attitude (A), which is defined as the user's evaluation of the desirability of his or her using the system. A and U influence the individual's intention to use the system (BI). Actual use of the system is predicted by BI.

Pikkarainen, Pikkarainen, Karjaluoto and Pahnala (2004: 226) note that the TAM has been tested in many studies and that its ability to explain attitude towards using information technology is better than other models. Consequently, various researchers have applied the TAM to predict customers' attitude towards Internet banking (see Arunkumar 2008; Dahlberg 2006; Laforet & Li 2005; Walker & Johnson 2005) and cellphone banking (Gu, Lee & Suh 2009; Maduku & Mpinganjira 2012). Sharp (2007: 3) attributes the success of the TAM and its prolific usage by IS researchers to the reality that: (1) the TAM provides specific focus on information technology; (2) has demonstrated validity and reliability; and (3) has accumulated a research tradition. Polančič, Heričko and Rozman (2010: 156) add that the TAM's ability to be used in both adoption and post-adoption behaviour, as the fourth attribute, has accounted for its wide employment in studying user adoption of information technology (IT).

Conceptual framework and research hypotheses

The central aspect of the conceptual framework for this study is based on the TAM (Davis et al. 1989). The reason for this choice is that the TAM is arguably the most parsimonious, widely accepted and functional model for studying IT adoption and its use (Srite & Karahanna 2006: 680). Although there is overwhelming support in the literature regarding the suitability of the TAM in explaining user acceptance of various IT systems, Moon and Kim (2001: 217) note that the TAM's fundamental constructs do not fully reflect the particular influences of technological and usage-

context factors that may alter the users' acceptance. Consequently, various studies on customers' attitude towards adopting e-banking (see Al-Somali, Gholami & Clegg 2009; Al-Sukkar 2005; Karjaluoto et al. 2002; Pikkaraine et al. 2004; Sathye 1999; Suh & Han 2002) have included factors such as trust, subjective norm, demographic variables, self-efficacy, quality of Internet/mobile connectivity, culture, customers' awareness of the benefits, perceived playfulness, perceived enjoyment, and such like. This study, however, included demographic variables, subjective norm and customers' trust of the Internet banking system, in addition to the TAM's original variables, to examine their influence on customers' attitude towards and usage of Internet banking services in South Africa (Figure 1).

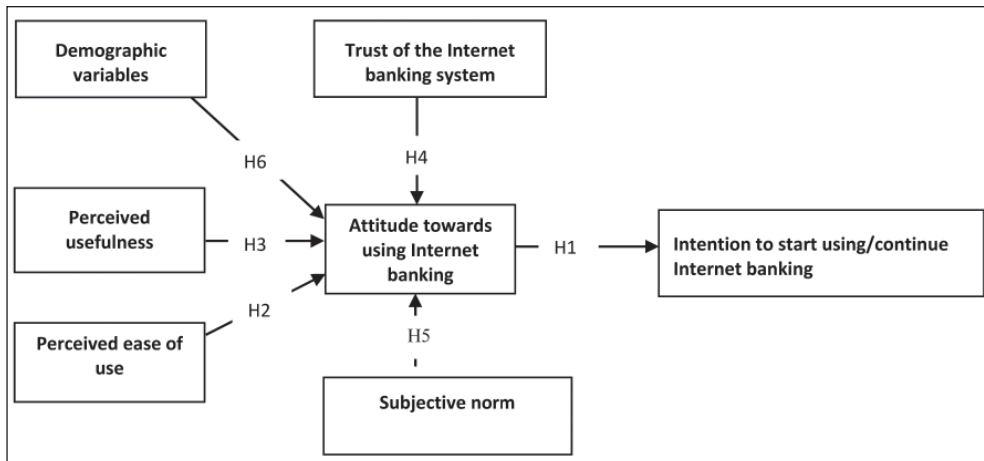


Figure 1: Research model

Attitude is a central concept in explaining the behavioural intention of humans (Sommer 2011: 91). Intention-based models such as the Theory of Reasoned Action, the Theory of Planned Behaviour and the Technology Acceptance Model have been used successfully by many researchers (see Ajzen 1991; Davis, 1989; Davis et al. 1989; Taylor & Todd, 1995) to investigate the relationship between attitude and intention. The results have consistently demonstrated that a person's behavioural intention is driven by his or her attitude towards the object. Customers' attitudes are significant factors affecting their behaviour in accepting or rejecting technology (Sarлак & Hastiani 2011: 1740). As a result, an individual's attitude towards Internet banking services is expected to influence his/her intention to start using/continue using the service. Well-researched findings by Al-Somali, Gholami and Clegg (2009); Lee (2009), Karjaluoto et al. (2002), Maduku and Mpinganjira (2012); Pikkarainen et

al. (2004) and Al-Sukkar (2005) have all emphasised the central role of attitude in determining behavioural intention towards electronic banking services. Hence the following hypotheses were proposed (Figure 1):

H1: Customers' attitude towards Internet banking services has a significant positive effect on their intention to start using/continue using the service.

Perceived ease of use is a construct tied to an individual's assessment of the effort involved in the process of using the system (Venkatesh & Davis 2000: 299). The effect of perceived ease of use on the adoption of, and intention to continue using, retail banking services was supported in a number of studies (such as Al-Sukkar & Hasan 2005; Chan & Lu 2004; Kamel & Hassan 2003; Kolodinsky & Hogarth 2001; Kolodinsky, Hogarth & Hilgert 2001; Ravi, Carr & Sagar 2007; and Vatanasombut, Lgbaria, Stylianou & Rodgers 2008). This led to the formulation of the next hypothesis for the study:

H2: Perceived ease of use has a significant positive effect on customers' attitude towards Internet banking.

Many empirical studies have provided evidence of the significant effect of perceived usefulness on customers' attitude towards electronic banking (Chen & Barnes 2007; Gao, Rohm, Sultan & Huang 2012; Venkatesh, Speier & Morris 2002, to mention a few). In other studies, Maduku and Mpinganjira (2012: 224) found a significantly positive relationship between perceived usefulness and attitude towards cellphone banking. When customers' notice obvious benefits offered by Internet banking, they are more likely to have a positive attitude towards the service. The third hypothesis was thus proposed:

H3: Perceived usefulness has a significant positive effect on customers' attitude towards Internet banking services.

According to Al-Somali et al. (2009: 135), customers' trust in Internet banking significantly affects their attitudes, which play an essential role in enhancing their behavioural intention to use or continue using Internet banking. Liu, Jack, June and Chun (2004: 137) noted that the lack of trust in online transactions and Web vendors represents a significant obstacle to the market penetration of e-banking channels. Furthermore, recent researchers emphasise the critical influence of trust on customers' attitude towards online banking (see Alsajjan & Dennis 2009; Al-Somali et al. 2009; Karjaluo et al. 2002; Maduku & Mpinganjira 2012; Yousafzai, Pallister & Foxall 2010). Thus we arrived at the fourth hypothesis:

H4: Customers' level of trust in the Internet banking system significantly influences their attitude towards the service.

Lee (2009: 132) noted that consumers' behaviour can be influenced by various social entities including friends, family, neighbours, colleagues, superiors and so on. Subjective norm describes the social influence that may affect a person's intention to use Internet banking services (Ravi et al. 2007). It denotes customers' belief about how the people whom they esteem in their personal frame of reference will perceive their acceptance of Internet banking. Davis et al. (1989: 899) underscore the relevance of subjective norm in user acceptance of IT when they reiterate that people in certain circumstances use technology to comply with others' mandates or expectations contrary to their own feelings and beliefs. Moreover, customers may have a positive or negative attitude towards Internet banking because of the perception of friends, family members, peers or superiors. Therefore, it is noted that social pressure to conduct Internet banking will have a positive significant impact on their attitude towards Internet banking. Hence the fifth hypothesis was proposed:

H5: There is a significant positive relationship between subjective norm and customers' attitude towards Internet banking.

Various researchers have investigated the effects of customers' demographic characteristics such as age, gender, race, level of income and level of education on their attitude towards electronic banking services and maintain that demographic characteristics play a significant role in influencing customers' attitude towards online banking (see Al-Somali et al. 2009; Maduku & Mpinganjira 2012). A study conducted by Porter and Donthu (2006: 1004) further emphasised that age, education, income and race are associated differentially with certain beliefs about the Internet, and that these beliefs mediate consumer attitudes towards and ultimate use of Internet banking services. Based on this background, this study also hypothesised that:

H6: Customers' demographic characteristics (age, gender, level of income and level of education) have a crucial impact on their attitude towards Internet banking.

In order to test this hypothesis, the following sub-hypotheses were proposed:

H6a: Younger customers have a more positive attitude towards Internet banking than older customers.

H6b: Customers with high levels of education have a more positive attitude towards Internet banking than those with low levels of education.

H6c: Customers with high income levels have a significantly more positive attitude towards Internet banking than those with low levels of income.

Research methods

Data collection

The survey method was used for collecting data to test the hypotheses. Data collection took place in the Gauteng province of South Africa. Gauteng was chosen because it is known as the country's economic powerhouse, responsible for over a third of South Africa's GDP (CGLGSA 2011). It also ranks among the main centres in the world hierarchy of urban areas and is the most urbanised province in South Africa (Shilowa 2005). Moreover, the province is a microcosm of South Africa because of its cosmopolitan nature.

The target population of the study is defined as retail banking customers in the Gauteng province of South Africa. Since there was no readily available sampling frame, non-probability sampling in the form of convenience sampling was used. Hence, the final respondents in this study were selected because they happened to be in the designated malls where the survey took place and were willing to cooperate with the researcher. During working hours, questionnaires were administered by research assistants at the selected malls to customers of the four big banks (Absa, Standard Bank, Nedbank and First National Bank). A total of 700 questionnaires were issued; however, only 394 usable responses were obtained, representing an effective response rate of 56%. This sample size was in line with the time and financial limitations of the research as well as sample sizes used in previous related studies conducted by Giovanis, Binioris and Polychronopoulos (2012: 35) where 280 responses were realised, as well as that of Ndubisi and Sinti (2006: 19) where 382 responses were realised. Table 1 presents demographic information about the respondents in terms of gender, age, race, level of education and level of income.

Measurements

This research made use of self-administered questionnaires through the mall intercept technique. Respondents were intercepted in designated malls in Gauteng province and given a structured questionnaire to complete. The final questionnaire designed for this study contained two sections:

- Section A of the questionnaire started with a screening question, which was necessary to ensure that only respondents with bank accounts with the selected banks responded to the questionnaire. The section also contained questions that sought to determine respondents' current use or non-use of Internet banking services, the particular services utilised and the frequency of their utilisation. This

section also included questions aimed at gathering demographic information such as gender, age, level of education and income. The questions in this section were measured using nominal and ordinal scales.

- In Section B of the questionnaire, questions aimed at measuring the main constructs used in the study (apart from the demographic information) were asked. The measures used to operationalise the constructs employed in the research model and questionnaire were adapted from previous studies, with minor changes to tailor them to an Internet banking context. The construct of perceived usefulness (containing five items), and trust of the system (containing four items) were measured using scales adapted from Nor (2005). Perceived ease of use (containing four items) was measured with scales adapted from studies conducted by Nor (2005) and Pikkarainen et al. (2005). The four items used to measure subjective norm were modified from Torkzadeh and Van Dyke (2002). All items were measured using a five-point Likert response format ranging from 1 ('strongly disagree') to 5 ('strongly agree').

The questionnaire was reviewed by a sample of individuals with extensive experience and understanding of e-banking; minor additions and changes were made according to their recommendations. Moreover, it was pre-tested using a convenience sample of banking customers, with the aim of testing for problems related to interpretation and understanding of questions used and determining the average time that would be taken to complete the survey. These measures were taken in order to validate the instrument and to confirm content validity.

The collected data were analysed using version 18 of SPSS (Statistical Package for Social Sciences). A number of statistical techniques were used to analyse the data, including descriptive statistics, correlation analysis, independent sample t-testing and multiple regression analysis.

Results and discussion

Table 1 presents a summary of the results of the demographic characteristics of the respondents. As can be seen from the table, a total of 204 respondents (51.8% of the total sample) were male, while 190 (48.2%) were female. Moreover, at 153 (38.8%) the age group between 18 and 29 years had the highest number in the age category. With regard to Internet banking usage among the respondents, 202 (51.3%) of the respondents stated that they use Internet banking, while 192 (48.7%) indicated that they do not.

Table 1: Demographic profile of respondents

Respondents' characteristics	Number of respondents who answered (n=394)	Percentage
Gender		
Male	204	51.8
Female	190	48.2
Age		
18–29	153	38.8
30–39	121	30.7
40–49	75	19.0
50–59	27	6.9
60–69	15	3.8
70+	3	0.3
Race		
African	180	45.7
Coloured	63	16.0
Indian	52	13.2
White	99	25.1
Gross monthly income (in ZAR)		
0–2 500	67	17.0
2 501–5 000	68	17.3
5 001–7 500	78	19.8
7 501–10 000	53	13.5
10 001–12 500	39	9.9
12 501–15 000	21	5.3
15 001–17 500	16	4.1
17 501–20 000	17	4.3
20 001–22 500	10	2.5
22 501+	25	6.3
Internet banking use		
Yes	202	51.3
No	192	48.7

Data reliability and validity

Data reliability

The research instrument was first tested for its reliability before being employed in the main analysis. The Cronbach's alpha coefficient (α) was used. The Cronbach's alpha is widely believed to indirectly indicate the degree to which a set of items measures a single, one-dimensional construct (Al-Dujaili 2011: 11). As can be seen from Table 2, the values of the Cronbach's alpha range from 0.932 to 0.959. This exceeds the minimum alpha value of 0.6 suggested by Hair et al. (2011: 446). Consequently, it is concluded that the constructs of the research instrument are highly reliable.

Table 2: Cronbach's alpha coefficient of reliability

Construct	Number of items	Sample reliability using Cronbach's alpha (α)
Perceived ease of use	4	0.953
Perceived usefulness	5	0.951
Trust of the Internet banking system	4	0.935
Subjective norm	4	0.932
Attitude	5	0.951
Behavioural intention	2	0.959

Data validity

Factor analysis, using principal component analysis (PCA), was employed to ascertain the convergent validity of the measurement scales used. The Kaiser-Meyer-Olkin (KMO) measure of sample adequacy produces an index that ranges between 0 and 1, and values closer to 1 are better (under 0.5 is unacceptable). In this study, the KMO for the test of sample adequacy produced a value of 0.93. Since this value is above 0.5, it satisfies the condition for factor analysis (Hair et al. 2011: 443) and was accepted. Each of the values in Table 3 had an eigen value of more than 1 and could explain 92.26 per cent of the total variance. To have construct validity, Hair et al. (2011: 444) suggest that factor loadings be statistically significant and achieve a factor loading of 0.50 or higher, with an ideal lower cut-off point of 0.70. According to Table 3, the factor loadings in this study range between 0.822 and 0.982; these high values indicate that the items being measured converge into a single construct and that the items are statistically significant.

Descriptive statistics

The purpose of this study was to determine customers' perceptions of the usefulness (perceived usefulness) and perceived ease of use of Internet banking. According to Table 3, respondents perceive Internet banking services to be useful. The overall means and standard deviation for the perceived usefulness construct had mean values near 4 (agreement), which means that respondents generally perceive Internet banking services as useful. Customers feel that Internet banking explicitly makes it easier for them to do their banking by enabling them to do it quickly, more conveniently and more effectively. Moreover, they also agree that Internet banking is useful in conduct-

Table 3: Factor analysis and descriptive statistics

Factor Loading	Constructs	Mean	Standard deviation
	Perceived ease of use	3.70	1.104
.943	I think it is easy to learn how to use Internet banking	3.61	1.221
.942	I think it is easy to get Internet banking to do what I want it to do	3.63	1.169
.965	I think it is easy to become skilful at using Internet banking	3.73	1.133
.897	Overall, I think Internet banking is easy to use	3.82	1.186
	Perceived usefulness	3.94	.950
.934	Internet banking makes it easier to do banking activities	3.91	1.073
.938	Internet Banking enables one to do banking activities more quickly	3.93	1.065
.934	I think Internet banking enables one to complete banking activities more conveniently	3.90	1.046
.876	I think Internet banking allows one to manage banking activities more efficiently	3.92	1.00
.891	I think Internet banking is useful in conducting banking activities	4.04	1.004
	Trust of the Internet banking system	3.31	1.027
.822	I think Internet banking has enough safeguards to make me feel comfortable using it	3.28	1.130
.869	I feel assured that legal structures adequately protect me from problems associated with using Internet banking services	3.18	1.119
.871	I feel confident that technological advances (such as encryption) on the Internet make it safe for me to use Internet banking	3.33	1.088
.839	In general the Internet is a safe environment in which to transact banking activities	3.45	1.150
	Subjective norm	3.48	1.055
.894	People who influence my behaviour believe I should use Internet banking	3.44	1.162
.931	People who are important to me believe I should use Internet banking	3.48	1.157
.932	People whose opinions I value believe I should use Internet banking	3.49	1.152
.889	People who influence my decisions think I should use Internet banking	3.50	1.159
	Attitude	3.80	1.046
.896	Using Internet banking is a good idea	3.78	1.150
.953	I like the idea of using Internet banking	3.78	1.190
.951	Using Internet banking is a pleasant idea	3.78	1.117
.933	Using Internet banking is an appealing idea	3.83	1.092
.842	Using Internet banking is an exciting idea	3.78	1.179
	Behavioural intention	3.86	1.196
.982	I intend to start/continue using Internet banking services in the future	3.78	1.263
.982	I will use Internet banking services regularly in the future	3.78	1.215

ing banking activities. This concurs with an observation by Frangos (2009: 157), who emphasised that the only reason why customers use Internet banking is because they find the service more useful in conducting their banking activities.

With regard to perceived ease of use, respondents perceive Internet banking services as easy to use. The overall mean and standard deviation scores for perceived ease of use were 3.70 and 1.104 respectively. However, in comparing the overall mean and standard deviation values for perceived usefulness and perceived ease of use, the researcher noticed that the values for perceived usefulness were higher than for perceived ease of use. In other words, although customers generally perceive Internet banking to be useful and easy to use, their perception of usefulness is higher than for perceived ease of use. The results of the individual items used to measure perceived usefulness emphasise this even further. For all five items, the mean value for perceived usefulness was greater than perceived ease of use.

The outcome of the analysis portrays customers' lower levels of trust in the Internet banking system, with an overall mean of 3.31. On an item-by-item basis, the highest mean value was 3.45, while the lowest mean was 3.18. In particular, customers believe that the Internet is a safe environment in which to conduct banking activities; however, they are sceptical about legal structures adequately protecting them from problems associated with using Internet banking. Moreover, in comparing the mean values of trust with the other constructs employed in the study, it is noteworthy that trust is least comparable with the other constructs.

With respect to subjective norm, the overall mean value of 3.48 shows that customers' attitude towards Internet banking is hardly influenced by the people important to them. This is evidenced by the fact that all items used to measure this construct showed low mean values, with 3.50 being the highest. This means that customers barely agree with the statements that measured this construct. This result contradicts the findings of research conducted by Yaghoubi and Bahmani (2010: 162) among Iranian Internet banking customers, which found a very strong relationship between subjective norm and customers' attitude towards Internet banking services.

Even though customers have low levels of trust in the Internet banking system, the results of the analysis showed that they generally have a strong positive attitude towards Internet banking, with an overall mean of 3.80. In particular, customers generally agree that Internet banking is a good idea (3.78), likeable (3.78), a pleasant idea (3.78), an appealing idea (3.83) and an exciting idea (3.78). Respondents showed a positive behavioural intention to start or continue using Internet banking. On an item-by-item analysis, customers were positive in terms of their decision to start or continue using Internet banking (3.86), as well as their intention to use Internet banking regularly (3.78). These mean scores indicate that customers have a positive

intention towards Internet banking. This finding contradicts a study conducted by Gerrard, Cunningham and Devlin (2006) among Singaporean customers that noted that customers in that country have a negative intention towards Internet banking usage because of trust and security issues.

Examination of the research hypotheses

A correlation analysis was conducted on all variables to explore the relationship between them. The Pearson product moment correlation was used to test hypotheses H1, H2, H3, H4 and H5. The bivariate correlation procedure was subjected to two-tailed tests of statistical significance at two different levels: highly significant ($p < .01$) and significant ($p < .05$). It is notable that, in interpreting the correlation results, the coefficient is used to measure the size of an effect, and the sign (either positive or negative) of the coefficient must be considered. According to Lester (2007: 1039), a correlation coefficient of less than 0.1 (or > -0.1) is considered unsubstantial or negligible; between 0.1 and 0.3 (or between -0.3 and -0.1) is considered small/weak; between 0.3 and 0.5 (or -0.5 and -0.3) indicates a moderate effect; and 0.5 or larger (or ≤ -0.5) is considered large. In testing hypothesis 6, Spearman's rho was employed. This is because ordinal scales were used to measure age, level of education and level of income. Comrey and Lee (2007: 170) note that when working with this type of data, researchers use Spearman's rho to determine whether or not correlations exist between variables. The writers further state that, as with Pearson's correlation coefficient, Spearman's rho describes the magnitude and direction of the association between two variables. Table 4 presents the results of the correlation analysis.

The results indicate that there is a strong and positive relationship between customers' attitude and intention to start using or continue using Internet banking services (.779). H1 was therefore accepted, thus implying that customers who have a positive attitude towards Internet banking are likely to want to start using or continue using the service if they are already users. This is consistent with the propositions under the Technology Acceptance Model as well as empirical findings by Al-Somali et al. (2004), Lee (2009), Karjaluoto et al. (2002) and Al-Sukkar (2005) that underscored the centrality of attitude in determining behavioural intention.

This study found strong empirical support for H2, namely that there is a significant positive relationship between perceived ease of use and attitude towards Internet banking. Similar strong support was found for H3, namely that there is a significant positive relationship between perceived usefulness and attitude towards Internet banking. Thus it is argued that perceived ease of use and perceived usefulness both positively influence attitude. These findings are also in accordance with the propo-

Table 4: Results of correlation analysis

Hypotheses	Statistical analysis technique used	Result of the analysis	Comment
H1. Customers' attitude and intention to start using/continue using Internet banking	Pearson correlation Sig. (2-tailed) <i>N</i>	.799** .000 394	Accepted
H2. Perceived ease of use and attitude towards Internet banking	Pearson correlation Sig. (2-tailed) <i>N</i>	.703** .000 394	Accepted
H3. Perceived usefulness and attitude towards Internet banking	Pearson correlation Sig. (2-tailed) <i>N</i>	.703** .000 394	Accepted
H4. Trust of the Internet banking system and attitude towards Internet banking	Pearson correlation Sig. (2-tailed) <i>N</i>	.720** .000 394	Accepted
H5. Subjective norm and attitude	Pearson correlation Sig. (2-tailed) <i>N</i>	.542** .000 394	Accepted
H6. Demographic variables and attitude towards Internet banking			
H6a. Age and attitude towards Internet banking	Spearman's rho Sig. (2-tailed) <i>N</i>	-.105* .041 394	Rejected
H6b. Education and attitude towards Internet banking	Spearman's rho Sig. (2-tailed) <i>N</i>	.178** .000 394	Accepted
H6c. Income and attitude towards Internet banking	Spearman's rho Sig. (2-tailed) <i>N</i>	.119* .020 394	Rejected

sitions of the Technology Acceptance Model as well as the findings of empirical studies concerning the relationship between perceived ease of use, perceived usefulness and attitude towards e-banking. Studies by Al-Somali et al. (2009), Lee (2009), Karjaluoto et al. (2002), Pikkarainen et al. (2004), Sharp (2007), Al-Sukkar (2005) and Taylor and Todd (1995) have all demonstrated that perceived ease of use and perceived usefulness significantly influence customers' attitude towards online banking. Moreover, the results of the analysis showed a strong positive correlation

between attitude and trust of the Internet banking system; H4 was therefore accepted. This shows that customers with high levels of trust in the Internet banking system displayed corresponding high levels of positive attitude towards Internet banking services.

The results showed that there is a significant positive relationship between subjective norm and attitude towards Internet banking. This provided support for the acceptance of H5. However, the effect size of 0.542 is considered to be moderate. This means that the most important people to the customer play some positive role in influencing their attitude towards Internet banking services. Nevertheless, Taylor and Todd (1995: 149) found that subjective norm was influential in affecting the adoption of an innovation in its early stages of introduction when users have only limited direct experience from which to develop attitudes. These observations may provide an explanation for the significant but moderate relationships between subjective norm and attitude.

With respect to customers' demographic variables and attitude towards Internet banking, the results of the analysis denoted a weak negative relationship between age and attitude towards Internet banking ($r = -0.105$), hence H6a was not accepted. A significant positive relationship was obtained between customers' level of education and attitude towards Internet banking ($r = .178, p < 0.000$). H6b was therefore accepted. However, it is notable that the relationship between level of education and attitude towards Internet banking was weak. Moreover, the results of the analysis also pointed to a statistically insignificant but positive relationship between customers' level of income and attitude towards Internet banking ($r = .119, p > 0.05$); H6c, namely that customers with high income levels have a more significant positive relationship with Internet banking than those with low income levels, was thus rejected. Moreover, as with level of education, the relationship between level of income and attitude towards Internet banking was weak. This indicates that demographic factors are not good predictors of attitude towards Internet banking services.

Predicting attitude

The study utilised multiple regression analysis to ascertain the extent to which perceived usefulness, perceived ease of use, trust and subjective norm could help predict attitude towards Internet banking. According to Nach (2009: 134), regression analyses are an appropriate analysis when the goal of research is to assess the extent of a relationship among a set of dichotomous or interval/ratio predictor variables on an interval/ratio criterion variable. Black (2011: 583) defines regression analysis as a statistical technique that attempts to predict the values of one variable using the

value of one or more other variables. The variable that is being predicted is called the dependent variable, and the variables that are being used as predictors of the dependent variable are called independent variables. Allen (2005: 5) notes that regression analysis enables researchers to assess how accurately an independent variable predicts the dependent variable. Furthermore, the author observes that regression analysis enables researchers to simultaneously examine both the form and the accuracy of a relationship.

It is noteworthy that demographic variables were not entered into the regression model. This is mainly because the results of the correlation analysis already showed a weak correlation between demographic factors and attitude. Table 5 presents a summary of the multiple regression analysis results obtained.

Table 5: Multiple regression analysis

Independent variable	Not standardised		Standardised	t	Sig
	Beta (β)	Standard error	Beta (β)		
Constant	.197	.146		1.352	.177
Perceived usefulness	.239	.059	.216	4.073	.000
Perceived ease of use	.138	.054	.145	2.558	.011
Subjective norm	.050	.040	.051	1.253	.211
Trust	.561	.054	.489	10.424	.000
Equation					
<i>R</i>	.813				
<i>R</i> ²	.661				
<i>F</i>	179.551***				

According to the results of the multiple regression analysis, as presented in Table 5, trust is the most valuable factor in explaining customers' attitude towards Internet banking. This is evident in that it has the highest standardised beta coefficient value (.489) compared to all the other predictors. Subjective norm is the least valuable factor of the four considered in the model. It has the lowest standardised beta coefficient value (.051) compared to all other predictors. Furthermore, its p-value of 0.211 is greater than the .05 level and indicates no statistical significance. The *R*² value of the model shows that, when combined, the four predictors have a high explanatory power, as they are able to account for 66.1% of the variance in customers' attitude towards Internet banking.

Conclusion and recommendation

The author's primary purpose in this study was to investigate the factors that predict retail banking customers' attitudes towards Internet banking in South Africa. The overarching theoretical framework for this research is the Technology Acceptance Model (TAM). In order to cater for deficiencies in the TAM, the model included other factors that are important antecedents of attitude towards Internet banking, as noted from the literature review. These factors included trust of the Internet banking system, subjective norm and customer demographics.

Deductions from the findings of this study suggest that although customers have low levels of trust in conducting banking activities over the Internet system, they have a positive attitude towards Internet banking services as well as positive intentions to start using/continue using the service. The study also found that customers perceived Internet banking to be useful for conducting banking activities. Customers feel that Internet banking makes it easier to perform banking activities and enables them to perform banking activities more quickly and efficiently. Moreover, the study found that, in general, customers perceive Internet banking as relatively easy to use. However, the influence of the customers' most important people on the formation of their attitude towards Internet banking services is rather limited. While differences in attitude may exist between customers in different demographic groups, demographic factors alone are insufficient predictors of customers' attitude.

In predicting customers' attitude towards Internet banking, perceived usefulness, perceived ease of use and trust were found to contribute substantially to variance in attitude towards Internet banking, with trust being the most significant factor influencing attitude towards Internet banking. The conclusion was reached from the findings that attitude towards Internet banking is influenced by multiple factors. Of the many factors, trust exerts the greatest influence.

The results of the analysis have wider implications for South African banks in their efforts to attract new customers to use Internet banking services and to increase the frequency of use among current users. It is essential, from a strategic perspective, for South African banks to understand the factors that influence their retail banking customers' attitude towards Internet banking within their environmental context. This will enable them to deploy strategies to promote increased customer acceptance and thereby provide significant returns on their investment in providing Internet banking services. Many previous studies in other countries have widely held perceived usefulness and perceived ease of use to be factors that affect attitude towards the adoption of new information technologies, including Internet banking. However, among the factors examined in this study, trust emerged as the most critical factor in influencing attitude towards Internet banking. This implies that in order to

increase the adoption of Internet banking among customers in South Africa, banks must devote significant resources to providing heightened state-of-the-art security measures aimed at improving security and removing any weaknesses from their Internet banking systems, and making customers aware by regularly communicating such improvements to them.

The findings of this study suggest that, although attitude differences may exist among customers in different demographic categories, demographic factors in general are not strong predictors of customers' attitude towards Internet banking. These findings could be valuable to the South African banking industry, especially in relation to rectifying stereotyping surrounding the relationship between demographic factors and attitude towards Internet banking usage. Furthermore, in order to increase the adoption of Internet banking services among customers, South African banks need to embrace an inclusive promotion strategy that targets all customers, instead of developing separate marketing strategies for various demographic groups.

This study, like any other, has its limitations. The use of non-probability sampling techniques in selecting respondents, and the fact that the study was only conducted in the Gauteng province of South Africa, have serious implications for the generalisability of the results. Although the sample size is sufficiently large, the generalisability of the findings from this study needs to be treated with caution. Future studies could therefore be conducted in other parts of the country and/or probability sampling methods could be used in order to test for any differences that arise and improve the generalisability of the findings.

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