



Journal of Internet Banking and Commerce

An open access Internet journal (http://www.arraydev.com/commerce/jibc/)

Journal of Internet Banking and Commerce, April 2011, vol. 16, no.1 (<u>http://www.arraydev.com/commerce/jibc/</u>)

Is Mauritius Ready to E-Bank?

From A Customer and Banking Perspective

VERENA TANDRAYEN-RAGOOBUR, PhD

Lecturer, Department of Economics and Statistics, University of Mauritius, Mauritius

Postal Address: **Department of Economics and Statistics, Faculty of Social Studies** and Humanities, University of Mauritius, Mauritius

Author's Personal/Organizational Website: www.uom.ac.mu

Email: v.tandrayen@uom.ac.mu

Dr Verena Tandrayen-Ragoobur is Lecturer at the University of Mauritius. Her areas of interest are International Trade, International Finance, Labour Market, Gender Mainstreaming, Poverty and Economic Development. Her research publications include papers in the Review of Development Economics and the International Research Journal of Finance and Economics

ANISHA AYRGA

Research Assistant, University of Mauritius Postal Address: Department of Economics and Statistics, Faculty of Social Studies and Humanities, University of Mauritius, Mauritius Author's Personal/Organizational Website: <u>www.uom.ac.mu</u>

Email: aniisha@live.com

Miss Anisha Ayrga is a research assistant. Her current research interests are International Trade, Gender Mainstreaming, Labour Market and Poverty.

Abstract

The objective of the paper is to analyse the supply and demand for internet banking in a small island economy of Mauritius. The study first probes into the extent to which internet banking is adopted among Mauritians and investigates the factors that drive the use of this new delivery channel. We examine whether the adoption of internet banking is influenced by consumer individual characteristics as well as perceived ease of use, perceived security and privacy and reluctance to change. Second, we analyse the impact of internet banking on banks' performance and the hurdles they encounter in encouraging clients to use this new technology. Our consumer survey covers a sample of 400 individuals of different age groups and educational levels in both urban and rural areas. The second survey focuses on the two largest banks in Mauritius. Logistic regression method to survey data was used. Our results reveal that perceived ease of use and perceived security and privacy were important factors that influence the use of internet banking among customers. However, reluctance to change is a major obstacle to the use of internet banking. This problem has been further encountered by banks in encouraging customers' adoption of their internet banking service.

Keywords: Internet Banking, Consumer Behaviour, Mauritius

© Verena Tandrayen-Ragoobur and Anisha Ayrga, 2011

INTRODUCTION

With rising globalisation, fierce competition and technological developments, the trading and investment environment have changed dramatically over the years. Today, electronic commerce plays a predominant role in trading activities with the spread of internet activities and improvement in information technologies. The banking industry, in particular, has been significantly influenced by the evolution of technology. Fierce competition between banks, has forced them to find new and profitable areas where to expand. Rising numbers of financial institutions are introducing and expanding their offerings of electronic banking products. Banks have augmented their distribution networks with transactional websites, which allow customers to open accounts, apply for loans, check balances, transfer funds, and make and receive payment over the internet. Some institutions view internet banking as a way to lower costs or to create new revenue streams by attracting additional customers and selling more services to current customers. Other institutions have begun to offer electronic banking services as a defensive step out of concern that current customers may switch to another financial institution with more advanced electronic banking services. While growth in online trading attests to the popularity of online brokerage services, it is less clear that there exists substantial demand for online commercial banking products.

The Information and Communication Technologies (ICT) sector holds high promises for small island economies, like Mauritius. Sustained economic development of the country is pinned on its ability to access the appropriate information and transform it into new products and services to compete on the global market. From a monocrop economy, based on sugar production, Mauritius has over the years, diversified its economy to manufacturing and services. To date, the services sector contributes to around 68 percent of GDP. The ICT Sector has been contributing a 6 percent of GDP in 2009 and it has been projected that the sector will contribute up to 8 percent of GDP by 2011. The Information Development Index for Mauritius has improved from 3.30 in 2008 to 3.44 in 2009. This was a direct effect as a result of improvements of ICT infrastructure and access. In 2008, there were nine internet service providers and 67.5 percent of households with computer had access to Internet. The tariff for internet connection per minute using dial up access (off peak time) was Rs 0.27 in 2009. In 2009, the number of internet subscribers attained 286,000, which is an increase of 43.4% relative to 199,500 in 2008. The number of Mauritians using internet banking was 131,628 in June 2010, representing a 21 percent rise relative to December 2009.

Internet banking which involves the use of internet as a delivery channel for banking services is now used to perform various banking transactions and provides the opportunity to customers to conduct banking transactions at their convenience. A number of studies have been carried out relating to issues in the wider context of e-banking (Balachandher et al., 2000; Suganthi et al., 2001; Padachi et al., 2008), particularly in relation to the rationales and benefits of internet banking, customer loyalty and service quality. Most studies have discussed only one side of the coin in analysing the adoption of internet banking where they have focused either on the customer perspective or its implication on the bank's performance.

The objective of the paper is to analyse the supply and demand for internet banking in the small island economy of Mauritius. Using a survey of 400 individuals and logistic regression model, we first investigate the behavioural intention of consumers to use - 4 -

internet banking in Mauritius. We examine whether the adoption of internet banking is influenced by individual characteristics namely sex, age, marital status, degree of exposure to internet banking, income, education as well as perceived ease of use, perceived security and privacy and reluctance to change. In addition, we identify the internet banking services mostly used by customers in our sample. Third, we compare the profile of the internet banking users to the non-internet banking users. Fourth, the factors causing the non-adoption of internet banking are discussed. Lastly, we analyse the factors that drove banks to adopt internet banking and the resulting impact on their performance.

The paper is structured as follows. Section 2 reviews the literature on internet banking while section 3 sets out the theoretical framework. Section 4 discusses the data, sampling strategy and econometric modelling used. Section 5 reveals the findings and we finally conclude in section 6 with some policy implications.

LITERATURE SURVEY

The concept of electronic banking has been defined in many ways (Daniel, 1999; Karjaluoto, 2002) namely as the delivery of banks' information and services to customers via different delivery platforms that can be used with different terminal devices such as a personal computer and a mobile phone with browser or desktop software, telephone or digital television. Electronic banking is a larger concept than banking via the internet (Karjaluoto, 2002) and the internet is a main delivery channel for electronic banking and its value to customers and banks is continuously increasing (Karjaluoto, 2002; Mattila, 2001).

It is important to identify factors that cause people to accept new technologies and information systems and use them. Several theories are offered in this respect, such as Theory of Reasoned Action (Fishbein and Ajzen, 1975), Technology Adoption Model (Davis, 1989), Theory of Innovation Diffusion (Rogers, 1983), and Theory of Planned Behaviour (Ajzen, 1991), and Decomposed Theory of Planned Behaviour (Taylor and Todd, 1995). These models are discussed to investigate the attitudes of consumers to use internet banking services. The Theory of Reasoned Action is one of the most important theories that are used to explain human behaviours (Pedersen, 2005). Behavioural intention to use technology is explained by people's attitudes toward that behaviour and subjective norms. If the behaviour is voluntarily controlled by the individual, it can accurately explain the factors influencing technology adoption (Laukkanen and Cruz, 2009).

The theory of planned behaviour (Ajzen, 1991) extends on the former by adding perceived behavioural control into the model as a determinant of behavioural intention and behaviour. This theory also predicts involuntary behaviours. It determines the impacts of three factors namely attitude, subjective norms and perceived behaviour control on how individual's tend to behave (Rao and Troshani, 2007). Attitude is the general feeling of people about the desirability or undesirability of a particular issue or behaviour. Subjective norm refers to individual's perception related to opinions of society about doing or not doing the behaviour (Taylor and Todd, 1995). The construct

perceived control of behavior is the individual's perception about ease or difficulty of doing behaviour and indicates the individual's perceptions about required skills, resources, and opportunities in doing the behaviour. From the technology acceptance model (Davis, 1989), behavioural intention is in turn, explained by the attitude towards the use of the system, which is described as the perceived usefulness and its perceived ease of use. Perceived ease of use refers to the degree to which a person believes that using a particular system would be free of effort, while perceived usefulness refers to the degree to which a person believes that using a particular system would be free of effort, while perceived usefulness refers to the degree to which a person believes that using a particular technology will enhance his performance.

Taylor and Todd (1995) extend the theory of planned behaviour by breaking down the structure of attitude, subjective norm and perceived behavioural control (Luarn and Lin, 2005). This resulted in increased power to explain behavioural intentions and accurate understanding of behavioural events (Pedersen, 2005). According to their decomposed theory of planned behaviour, the behaviour to use a new service for instance is determined by the intention to use and perceived behavioural control. Intention to use, in turn, is determined by the attitude toward behaviour, subjective norm and perceived behavioral control. Attitude comprises of perceived ease of use, perceived usefulness¹ and compatibility. Compatibility refers to the degree to which an innovation is perceived as being consistent with existing values, past experiences, and needs of potential adopters (Moor and Benbasat, 1991). Al-Majali and Nik Mat (2010) decomposed the subjective norms further into two normative beliefs namely family influences and mass media influences. Family influences emphasize on the relationship between the people under the family control where from parents, a person acquires an orientation toward religion, politics and economics, and a sense of personal ambition, self worth, and love. Mass media influences are non-personal communication channels such as print media, broadcast media, and network media (Kotler, 2006). Perceived behaviour control is composed of three control beliefs: self-efficacy, government support and technology support. Self-efficacy refers to individual's self-confidence in his or her ability to perform a behaviour (Compeau and Higgins, 1995). Government support can play an intervention and leadership role in the diffusion of innovation (Tan and Teo, 2000). Finally, technology support becomes easily and readily available as e-commerce applications such as internet banking services become more feasible (Shih and Fang, 2004).

Internet banking brings a number of benefits for both the provider and the customer. From the bank's perspective these are mainly related to cost savings (Sathye 1999; Robinson, 2000) and internet banking remains one of the cheapest and more efficient delivery channels (Pikkarainen et al., 2004). Other rationales for the adoption of such services are related to competition as it helps to retain existing customers and attract new ones (Robinson, 2000). Further, mass customization, more effective marketing and communication at lower costs are among the benefits of internet banking services (Tuchila, 2000). Benefits for the end users are numerous and include mainly convenience of the service (time saved and globally accessible service), lower cost of transaction and more frequent monitoring of accounts among others (Pikkarainen et al., 2004). For businesses and enterprises, in particular, internet banking is seen as a means to better administer funds (Tuchila. 2000) as well as there is quick and

¹ Same as defined by Davis (1989)

- 6 -

continuous access to information which helps in reducing costs. However, in many cases, customers are still reluctant to use of internet banking, as they are concerned with security aspects of the system. Further, internet banking requires access to a computer and access to the internet which is an additional cost to the client. Moreover, customers may not be IT conversant to use internet banking. Nsouli and Schaechter (2002) argue that internet banking is not only susceptible to the risks involved in the normal banking business but it also increases them with additional risk elements such as compliance, transactional, liquidity and reputation risks.

Behavioural intention has a positive influence on internet banking services adoption in Singapore and Thailand respectively (Tan and Teo, 2000; Shih and Fang, 2004). Tan and Teo (2000) found that attitude is a significant predictor of behavioural intention towards internet banking services. Other studies (Suh and Han, 2002; Celik 2008; Nor and Pearson, 2008) found significant and positive relationship between perceived ease of use, perceived usefulness, attitude and internet banking services adoption.

Eriksson, Kerem and Nilson (2008) examine innovation adoption in the context of internet banking in Estonia which is one of the highest levels of internet banking in the world. Based on a survey of 1,831 bank's customers, they note that relative advantage and complexity have the strongest influence in the adoption of internet banking. Perceived risk and compatibility have significant, but weak, negative effects on adoption. They proved that the factors influencing the use of internet banking are unique and not mixed with factors influencing banking in general. In addition, a similar study by Lallmahamood (2007) for Malaysia shows that perceived security and privacy have the most important impact on the intention to use internet banking in a sample of 187 customers. Padachi et al. (2008) observe that inter account transfer, payment to other personal account, transfer to credit card account, recharge mobile phones amongst others were the mostly used services among 200 customers in Mauritius. Ease of use, trust, cost of computers, internet accessibility and security concerns are important elements for the adoption of internet banking.

Hemandez and Mazzon (2006) show that relative advantage control, compatibility with lifestyle, image, subjective norm, self-efficacy, relative advantage of security and privacy, demonstrability and trialability influence Brazilians to use internet banking. Kolodinsky et al. (2004) show that relative advantage, complexity/simplicity, compatibility, observability, risk tolerance, and product involvement are important variables that affect the decision of adoption or intention to adopt three e-banking technologies in US. However, it has also been noted that income, assets, education, gender and marital status, and age also affect adoption. Gerrard and Cunningham (2003) study the diffusion of the internet banking in Singapore. Out of a survey of 240 individuals, they observe that 46 per cent used internet banking as the population is well-educated and is familiar with personal computers and the internet.

THEORETICAL FRAMEWORK

We extend the technology acceptance model (Davis, 1989) and explain behavioural intention by the consumer attitude towards the use of internet banking services through perceived usefulness, perceived ease of use, individual characteristics of the consumer and reluctance to change. Individual characteristics of the consumers are represented

by age, sex, marital status, occupation and education among others. Reluctance to change is one important aspect of Mauritian behaviour towards new technology or products on the market. The resistance to change arises from a number of factors namely the lack of or limited access to the internet and high computer and internet costs. In addition, customers are not IT conversant and they are also concerned on the security aspects of the system. These factors are well anchored in the Mauritian society and our proposed theoretical framework is presented in Figure 1 below.

- 7 -

Figure 1: The Model



DATA, SAMPLING STRATEGY AND ECONOMETRIC MODELLING

The objective of this paper is to analyse the supply and demand for internet banking in a small island economy of Mauritius. First, we investigate the behavioural intention of Mauritian to use internet banking. We extend on the technology acceptance model (Davis, 1989) to examine the effects of perceived security and privacy, perceived usefulness, perceived eased of use, reluctance to change and specific customer characteristics on the intention to use internet banking users to the non-internet banking users. Third, we identify the internet banking services mostly used by customers and the most important factors causing the non-adoption of internet banking. Lastly, we analyse the motivations behind the adoption of internet banking by banks and the resulting impact on their performance.

Data and Sampling Strategy

Two surveys were carried out. The first one focuses on the banking sector in Mauritius to analyse the motivation of banks to adopt internet banking and therefore the impact of this new service on their performance. The second survey relates to the consumer perspective of using internet banking and 400 individuals were surveyed across the island.

- 8 -

From the bank perspective, the two largest banks in Mauritius were surveyed namely the Mauritius Commercial Bank which has the highest market share followed by the number two in the banking sector which is the State Bank of Mauritius. The survey was targeted to high officials in the two banks.

With respect to the consumer survey, questionnaires were designed and distributed to Mauritians of different age group and of different educational level attained across the island (university campus, shopping mall, city centre). The questionnaire was pre-tested initially with few people working in different sectors to ensure consistency and relevance to the Mauritian case. Minor changes were implemented before carrying out the final interview. For the purpose of the survey, a stratified sampling strategy was applied where the characteristics of individuals are used as the basis of selection, most often chosen to reflect the diversity and breadth of the sample population.

The stratified sample is obtained by independently selecting a separate simple random sample from each population stratum. The population is divided into different groups based on characteristics such as gender, location of the respondent that is whether he or she lives in the urban or rural region and age of the person. We adopt Yamane (1967) formula to calculate our sample size. Based on a 95 per cent confidence level and P value being 0.5, we use the following formulae which generates $n = \frac{N}{1+N(e)^2} = \frac{(1,200,000-13827)}{1+((1,200,000-13827)(0.05)^2)} = 399.86$ where *n* is the sample size, *N*

is the population size and *e* is the level of precision. The actual population of Mauritius is 1.2 million which we adjust by excluding those below 18 years who do not have a bank account and will thus not use internet banking services. In this respect a sample of 400 individuals were selected from the population.

The survey instrument was divided into three sections. The first section concentrates on the general profile of the respondent including his/her age group, sex, region where he/she lives, education level and profession, income group and the number of years he/she has a bank account. In the second section, issues such as internet facility and internet banking were addressed. They were also asked the reasons for using and not using internet banking services and also the different purposes of this new service. The third section relates more to the perception of the individual on internet banking facility.

Econometric Modelling

From our survey data, we use logistic regression method and principle factor analysis. Logistic regression, is used as an alternative to the discriminant analysis and crosstabs in cases of various deformations in assumptions like the normality assumption (Tathdil, 1992). Thus, the following model was used.

$$IB_{i} = \alpha_{0} + v_{1}Age + v_{2}Sex + v_{3}MariralSta tus_{i} + v_{4} Re gion_{i} + v_{5}Occupation_{i} + v_{6}InternetHo me_{i} + v_{7}InternetWo rk_{i} + v_{8}Education_{i} + v_{9}Income_{i} + v_{10}Security Pr ivacy_{t} + v_{11}EaseofUse_{i} + v_{12}Usefu ln ess_{i} + v_{13} Re luc tan ce_{i} + \varepsilon_{i} (1)$$

where *IB* is a dummy variable taking a value of 1 if the customer uses internet banking

- 9 -

and 0 otherwise, Sex is 1 if the respondent is male and 0 if female and Marital Status indicates if the person is married in which case dummy being one or otherwise. In addition, Region denotes where the respondent is presently living, dummy being 1 if he/she is in the urban region and 0 if the person lives in the rural region. In addition, Occupation indicates the job status of the customer and includes civil servants, managers, IT-related professionals, technicians and students. Students being the benchmark dummy in this case, whereby, they are considered as unemployed.

InternetHome and *InternetWork* are internet access at home and at work respectively, dummy equal 1 if access is available in each case and 0, otherwise. *Education* considers the education level of the respondent in terms of primary, secondary and tertiary education. Income measures the income level of the customer, we consider those individuals who earn more than Rs 30,000 (in which case dummy equal to 1) and those with income less than Rs 30,000.

SecurityPrivacy is an index used to measure the perceived security and privacy of internet banking (Taylor and Todd, 1995). It consists of 5 elements namely the financial security of internet banking, the trust which individuals have in the service, privacy protection of the customer, security level password and the presence of a third party to validate the Bank's identity. *Ease of Use* is also an index based on Davis (1989), which contains 4 elements namely internet banking is easy to use, simple, has a user-friendly website and is a flexible system for interaction.

Usefulness as per our model covers 3 characteristics which are easy to perform banking transactions; time saving and a range of services are provided by the banks. We augment Davis (1989) model by considering an additional variable which is pertinent in Mauritius, in particular that is the reluctance to change. *Reluctance* is an index which includes the fact that people do not want to use the new technology and second they do not know how to use it. The individual across the survey is denoted by *i* and ε is the error term.

DATA ANALYSIS AND FINDINGS

Data Analysis

From our survey of 400 respondents, we note that 56 percent are female and the rest 44 percent are male. In fact, the Mauritian population aged above 17 years is female dominated. In addition, 57 percent of the respondents live in rural region while 43 percent reside in cities. It is a good distribution of the bank customers surveyed across the island. Further in Figure 1 below, we observe the age distribution of respondents and note that around 42 percent are between 18 and 25 years while 34 percent are in the age group 26 to 35 years. Only around 10 percent of the bank customers surveyed are aged above 46 years.



Figure 1: Age Group of Surveyed Individuals

Mauritius having a highly educated population with one of the highest literacy rate in the Sub Saharan African region, we examine the educational profile of the respondents. From the sample, 42 percent attained secondary education level. A large percentage has attended or still attending tertiary institutions. Further, we examine the income levels of the respondents and note as from Figure 2 below that a larger proportion (25 percent) earn around Rs 5,000-10,000 whilst 22 percent are in the income bracket of Rs 20,000-30,000. Only 13 percent earn more than Rs30,000 where as 21 percent falls in the lowest income group.



Figure 2: Income Level of Respondents

When assessing the profile of Mauritians in their intention of using internet banking, we consider the number of years they had a bank account. The data reveals that 30 percent had a bank account for a period of 10 to 15 years while around 22 percent had been using banking services for more than 15 years. 30 percent of the respondents had a bank account only in the last five years or less. The number of years they have been using banking services would affect their likely use of internet banking. In effect, we note that 30 per cent use internet banking in the sample, which is significant for a small island economy.

Profile of Internet Banking Users vs. Non Internet Banking Users

From table 1 below, we note that on average the profile of the internet banking user is one is more likely to be single, educated, aged between 18 to 25, and live in the cities. The internet banking user is also one who has internet access at home and at work. For the internet banking customer, perceived security and privacy, perceived ease of use and perceived usefulness are among the most important elements that have driven the use of this service. In addition, reluctance to change is one element which causes people not to move towards the use of this banking facility as the mean is larger in the cause of non-internet banking users.

Table 1: Characteristics of Internet Banking and Non-Internet Banking Users				
	IB (Mean)	No IB (Mean)		
Age 18 to 25 years	0.51	0.37		
Age 26 to 35 years	0.32	0.36		
Age 36 and above	0.10	0.15		
Sex	0.50	0.42		
City	0.47	0.41		
Married	0.36	0.52		
Internet access at home	0.82	0.67		
Internet access at work	0.69	0.57		
Security-Privacy	0.70	0.41		
Ease of Use	0.75	0.46		
Usefulness	0.74	0.54		
Education	0.68	0.51		
Reluctance to Change	0.31	0.36		
Occupation: IT Professionals	0.09	0.04		
Manager	0.09	0.03		
Civil Servant	0.21	0.30		
Technical	0.34	0.40		
Income level	0.05	0.08		
Number of Observations	117	279		

Table 4. Characteristics of Internet Danking and New Internet Danking Heare

Source: Computed

Findings

Results from a Customer Perspective

Our results are shown in Table 2 below. We observe that customers having internet access at home are more likely to use internet banking. In fact, in 2009, there were 286,000 internet subscribers in Mauritius which represented a rise of 43.4 per cent relative to 2008 and 67.5 per cent of households with computer had access to internet in the same year. Further, the low cost of internet connection per minute which is only 27 cents has encouraged people to have internet access at home and make use of internet banking facilities. However, internet access at work does not appear to affect significantly the use of internet banking.

Internet Banking	Coefficient Robust Std Errors		Marginal Effects	
Age18-25	0.690	0.673	0.135	
Age 26-35	0.257	0.574	0.049	
Age 36-46	0.156	0.629	0.030	
Sex	0.162	0.296	0.031	
Region	0.112	0.284	0.021	
Marital Status	-0.327	0.397	-0.062	
Education	0.706**	0.334	0.131	
Internet At Home	0.589*	0.348	0.105	
Internet At Work	0.110	0.294	0.021	
Security and Privacy	0.884***	0.308	0.167	
Ease of Use	1.085***	0.370	0.200	
Usefulness	-0.112	0.372	-0.021	
Reluctance to Change	-0.848***	0.294	-0.150	
IT Professionals	1.006* 0.602		0.225	
Managers	0.967*	0.593	0.215	
Civil Servants	0.247	0.522	0.048	
Technicians	0.637	0.433 0.124		
Income Level	-0.902	0.610 0.014		
Constant	-3.296***	0.835	-	
No of Observations	348	Pseudo R-squared	0.27	

Table 2	2: I	Logit	Regression	Results
---------	------	-------	------------	---------

Source: Computed

Our findings also reveal that education plays a major role in influencing the adoption of internet banking. More educated people are more likely to use internet banking facilities as they are more acquainted with a computer and the internet. Perceived ease of use and perceived security and privacy are significant factors that induce consumers to use internet banking. This finding is in line with Lallmahamood (2007), Celik (2008) and Nor and Pearson (2008). Convenience measured by perceived usefulness is however not significant. Our results further confirms our theoretical reasoning where reluctance to

change prevents individuals to use this new banking service. The effect is rather important and substantiates the negative influence on the adoption of internet banking. Many individuals do not want to adopt the new technology and simply argue that they do not know how to use the service. The incentive to learn may also be inexistent. Our results also show that those people with an income level exceeding Rs 30,000 are not interested in using internet banking. We note in the survey that those in this income bracket are mainly people in the age group, exceeding 46 years and are not eager to adopt a new technology. Managers and IT professionals are more likely to use internet banking because of their acquaintance to the new system and most probably their higher educational background. The other variables like age, sex, region and marital status are not significant. We also observe that 20 percent of consumers use internet banking facilities to view their accounts and 9 per cent to make foreign transfers. 7 per cent of consumers make online payments, transfer funds to credit card accounts, and make payment to other personal accounts and by office check. Further, around 5 per cent request current account statements.

Results from a Banking Perspective

The results from our bank survey reveal that internet banking is part of the banks' business strategy to attract more customers. It benefits the banks in a number of ways, namely time saving, lower costs, provision of better services to customers and also they have more time to develop new services. Banks' performance has also improved since there is less paper work and less stress as well as less long queues.

The main problems which banks faced in encouraging the use of this new technology is the ignorance of clients and their unwillingness to shift to the new system. Most customers prefer face to face interaction and they have a negative attitude towards security aspects. This further confirms our previous finding on the negative effect of reluctance to change on the adoption of internet banking. Banks also argue that Mauritius is ready and capable in terms of technology and security aspects to extend internet banking services across all banks in the island.

Although banks stand to derive benefits from involvement in electronic banking transactions, they are also exposed to some significant new risks. Some of these risks are strategic; that is banks may be unable to adapt successfully to changes in the business environment created by electronic banking. Others are operational-including conditions in which the computers and network technology that support electronic banking could malfunction. In relation to banking on the Internet, there is also the increased risk of unauthorised access to and alteration of information. Risks may be heightened where a bank does not adequately educate its customers about security precautions.

CONCLUSION

Financial institutions are developing new electronic banking products for their retail customers. The probability that these efforts will succeed can be enhanced if managers at these institutions focus the promotion of the new services toward those customers who are most likely to find them attractive. Research elsewhere (Al-Majali and Nik Mat 2010; Lallmahamood 2007; Celik 2008 and Nor and Pearson 2008) has demonstrated

an association between customers' demographic and financial characteristics and their demand for electronic banking services.

This study extends on Davis (1989) model and show that the adoption and use of internet banking in a small island economy like Mauritius are affected by different factors. From our survey of 400 customers, we observe that reluctance to change impedes the use of internet banking while perceived ease of use and perceived security and privacy have a positive influence. Internet access at home further helps the use of internet banking while internet access at the place of work does not have any significant effect. We also note that different IT professionals and managers are more likely to use internet banking services relative to those in the public sector or technicians. The results from our survey on the two main banks in Mauritius namely the Mauritius Commercial Bank and the State Bank of Mauritius reveal that the performance of banks have improved with the implementation of this new technology. Time and cost saving are important aspects of performance improvement in these banks. One major constraint which banks face in encouraging people to adopt internet banking services is the ignorance of clients and their unwillingness to shift to the new system. So reluctance to change appears as a major problem that hinders the use of internet banking in Mauritius.

To promote internet banking, there is a need to devise new marketing campaign so as to target more elderly people informing them of the facilities of this service. Banks can include a chat forum on their websites as a solution. The chat forum can be a place where adopters can post their experience of internet banking and also banks can provide a customer care service in the chat forum which will be helpful for users. Security aspects are also important. In Mauritius, commercial banks offering the service have very good security features for their online system. Third party assurance such as VeriSign shows that the website is secure. Moreover, the government has established Authorities such as Cyber Crime Unit and has enacted severe laws for online frauds. So, banks should make an awareness campaign of the security aspects of their online services to encourage the use on internet banking. Making internet banking easy to understand and more accessible to the old generations as well as promoting its security aspects can enhance the use of internet banking in Mauritius.

REFERENCES

- Al-Majali. M, Nik Kamariah Nik Mat (2010). Application of decomposed theory of planned behavior on internet banking adoption in Jordan. *Journal of Internet Banking and Commerce*, 15(2).
- Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50, 197-211.
- Balachandher, K.G.; Santha, V.; Norhazlin, I.; and Prasad, R. (2000). E-banking in Malaysia: A note on evolution of services and consumer reactions. *Journal of International Banking and Commerce* 5(1), 34-45.
- Celik, H. (2008). What determines Turkish customers' acceptance of internet banking? *Marketing*, 26(5), 353-370.
- Compeau, D. and Higgins, C (1995). Application of social cognitive theory to training for computer skills. *Information Systems Research*, 6(2), 118-143.
- Daniel, E. (1999). Provision of electronic banking in the UK and the Republic of Ireland. *International Journal of Bank Marketing*, 17(2), 72 83.
- Davis, F.D., Bagozzi, R.P., Warshaw, P.R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35(8), 982-1003
- Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of computer technology. *MIS Quarterly*, 13(3), 319-340.
- Eriksson, Kerem and Nilson (2008). The adoption of commercial innovations in the former Central and Eastern European markets: The case of internet banking in Estonia. *The International Journal of Bank Marketing*, 26(3), 5-14.
- Fishbein, M., Ajzen, I. (1975). Belief, attitudes, intention and behavior: An Introduction to theory and research. Reading, MA: Addison-Wesley.
- Gerrard, P.J. and Barton Cunningham, J.B. (2003). The diffusion of internet banking among Singapore consumers. *The International Journal of Bank Marketing*, 21(1), 16-28.
- Hemandez, J.M.C. and Mazzon J.A. (2006). Adoption of internet banking: proposition and implementation of an integrated methodology approach. *International Journal of Bank Marketing*, 25(2), 72-88.
- Jeanne M. Hogarth and Marianne A. Hilgert (2004). The adoption of electronic banking technologies by US consumers. *International Journal of Bank Marketing*, 22(4), 238 259
- Karjaluoto, H. (2002). Electronic banking in Finland: Consumers beliefs, attitudes, intentions and behaviours. Unpublished doctorial dissertion, University of Jyväskylä
- Kolodinsky, J.M., Hogarth, J.M. and Hilgert, M.A. (2004). The adoption of electronic banking technologies by US consumers. *The International Journal of Bank Marketing*, 22(4), 238-245.
- Kose, A. (2009). Determination of reasons affecting the use of internet banking through logistic regression analysis. *Journal of Global Strategic Management*, 6, 1-10.
- Lallmahamood, M. (2007). An examination of individual's perceived security and privacy of the internet in Malaysia and the influence of this on their Intention to use e-commerce: Using an extension of the technology acceptance model. *Journal of Internet Banking and Commerce*, 12(3).
- Laukkanen, T. and Cruz, P. (2009). Comparing consumer resistance to mobile banking in Finland and Portugal. in Filipe, J. and Obaidat, M.S. (Eds), e-Business and

Telecommunications, Springer, Berlin, 89-98.

- Luarn, P. and Lin, H. (2005). Toward an understanding of the behavioural intention to use mobile banking. *Computers in Human Behaviour*, V.
- Mattila, M. (2001). Essays on customers in the dawn of interactive banking. Unpublished doctoral dissertion, University of Jyväskylä, Jyväskylä.
- Moore, G.C. and Benbasat, I (1991). Development of an instrument to measure the Perceptions of Adopting an Information Technology Innovation. *Information Systems Research*, 2(3), 192-222.
- Nor, K., & Pearson, J. (2008). An exploratory study into the adoption of internet banking in a developing country: Malaysia. *Journal of Internet Commerce*, 7(1), 29-73.
- Nsouli, S.M., Schaechter, S. (2002). Challenges of the e-banking revolution. *Finance and Development*, 39(3).
- Padachi, K., Rojid, S. and Seetanah, B. (2008). Analyzing the factors that influence the adoption of internet banking in Mauritius. *Proceedings of the 2007 Computer Science and IT Education Conference*.
- Pedersen, P.E. (2005). Adoption of mobile internet services: an exploratory study of mobile commerce early adopters. *Journal of Organizational Computing*, 15(2), 203-22.
- Pikkarainen, T.; Pikkarainen, K.; Karjaluoto, H. and Pahnila, S. (2004). Consumer acceptance of online banking: an extension of the technology acceptance model. *Internet Research*,14(3), 224–235.
- Rao,S. and Troshani, I. (2007). A conceptual framework and propositions for the acceptance of mobile services. *Journal of Theoretical and Applied Electronic Commerce Research*, 2(2), 61-73.
- Robinson, G. (2000). Bank to the future. Internet Magazine.
- Rogers, E.M. (1983). Diffusion of innovations. The Free Press, New York, NY.
- Riivari, J. (2005). Mobile banking: a powerful new marketing and CRM tool for financial service companies all over Europe. *Journal of Financial Services Marketing*,10 (1), 11-20.
- Sathye, M. (1999). Adoption of internet banking by Australian consumers: an empirical investigation. *International Journal of Bank Marketing*, 17(7), 324-334.
- Sciglimpaglia, D. and Ely, D. (2002). Internet banking: A customer-centric perspective. *Proceedings of the 35th Hawaii International Conference on System Sciences*, 1-10.
- Suganthi, B.; Balachandher, S. and Balachandran, K.G. (2001). E-banking patronage: An empirical investigation of Malaysia. *Journal of International Banking and Commerce*.6(1), 43-54.
- Tan, M., & Teo, T. (2000). Factors influencing the adoption of Internet banking. Journal of the Association for Information Sciences, 1, 1-42.
- Tathdil, Hüseyin, (1992). Uygulamal Çok Dekenli statistiksel Analiz, Cem Web Ofset, Ankara,Türkiye.
- Taylor, S. and Todd, P.A. (1995). Understanding information technology usage: a test of competing models. *Information Systems Research*, 6(2), 144-176.
- Tuchila, R. (2000). Servicii bancare prin internet. *E-finance Romania*