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CUSTOMER PERCEPTIONS OF TECHNOLOGY-BASED BANKING SERVICES:INFLUENCE OF DEMOGRAPHIC VARIABLES

Abstract:

Due to technological advancements and innovation, technology-based banking has gained importance as an alternative means of providing services to customers. As a result the understanding and measuring of service quality of technology-based banking has become an indispensable marketing management imperative to bank managers over the recent years. The aim of this paper was to investigate if there are significant differences on customer perceptions of technology-based banking services by certain demographic variables, namely, age and gender. A structured questionnaire was completed by one hundred and eighty customers (n=180). Using a factor analysis procedure seven factors that influence customer perceptions of online banking service quality were extracted. ANOVA was then applied to examine the differences among the means of the socio-biographic variables with regard to their perceptions of the different service dimensions of technology-based banking services. The study revealed that there were significant differences among the different age groups while no significant differences were observed between males and females. The younger age group (under 20 years) seem to rate the quality of the technology-based banking services lower with respect to the following factors: factor 1 (assurance, trust and appeal), factor 5 (fulfilment) and factor 6 (speed and accuracy). Factor 4 (accessibility), was, however, viewed favourably by this age group. Their older and more mature counterparts (50-59 years old) perceived factor 5 (fulfilment) more favourably than did the younger age cohorts. These findings could be used for monitoring and measuring the service levels of online banking service quality to identify areas of improvement.

Keywords:

Customer perceptions, technology-based banking, service quality, ANOVA, age and gender

JEL Classification: M31

Introduction

In the last fifteen years a number of interrelated socio-economic and technological trends have led to the emergence and continuous growth of electronic forms of service. Electronic services, also known as high-technology services, can be defined as knowledge intensive services or composite service offers, interactively co-produced by the customer, through or with the help of electronic communication media (Kasper, Helsdingen, & Gabbot, 2006; Akinyele & Olorunleke, 2010). Santos (2003) asserts that electronic service has been increasingly recognised by both researchers and practitioners as being one of the key drivers of success in e-commerce. Similarly Lovelock and Wright (1999) observe that there is an industry-wide shift from high-contact bank branches to low-contact banking such as telephone and ATM banking. In the banking industry, innovative technology-based products and services such as cellphone banking, landline telephone banking, internet banking and automated teller machine (ATM) banking are not only seen as innovative technologies for providing financial services to existing bank customers, but also essential technologies in expanding the provision of banking products and services to poor consumers who are generally 'unbanked' in the South African economy (Berndt, Saunders & Petzer, 2010).

Over the past decade, there has been a growing body of work focusing on conceptualising, measuring, and managing of service quality and its effects in electronic environments. Akin to research on service quality in traditional (bricks and mortar) retail and service environments, the conceptualisation and measurement of quality in electronic services (or e-service quality) has emerged as a strategic issue (Carlson & O`Cass, 2011). Several researchers have identified different sets of dimensions for electronic service quality as they develop instruments to measure electronic service quality. The differences between service quality in traditional and electronic commerce is the absence of interpersonal contact in the case of e-services (Bressolles & Durrieu, 2010). This important difference has implications for the dimensions that should be used when evaluating e-service quality. There is growing evidence of variation in the outcomes of different studies on the dimensions of e-service quality that have surfaced in the attempt to address the key dimensions of service quality, directly or indirectly, of electronic services (Han & Baek, 2004; Parasuraman, Zeithaml & Berry, 2005).

Service Quality of Technology-based Banking Services

Al-Alawi (2005) notes that banks have been providing services electronically to consumers for more than a decade. Examples include Electronic Funds Transfers (EFT), whether for small payments or large corporate management systems, as well as Automated Teller Machines (ATM) for withdrawing cash and convenient account access. Major banks around the world have invested and are still investing in providing technology-based banking services. This is because as a new cost-effective delivery channel, driven by cost reduction, it increases market share and is used as a customer retention strategy (Centeno, 2004). In spite of the great benefits online banking provides, Al-Alawi (2005) advises that it is essential that banks consider the risks associated with it. One significant step that banks must take before going through any transformation is to ensure the proper handling of online banking risk.

Various researchers have researched the effects of customers' demographic characteristics such as age, gender, race, level of income and level of education on

their attitude towards technology based banking services and maintain that demographic characteristics play a significant role in influencing customers' attitude towards such services (Maduku & Mpinganjira 2012). Previous studies have proposed that there is an inverse relationship between age and acceptance of technology based services (Harrison & Rainer 1992; Tsikriktsis 2004). Parasuraman (2000) found that customers who own or subscribe to technology products and services were more technologically ready than customers who did not own or subscribe to technologies. Odumeru (2012) is of the view that age has an impact on the adoption and acceptance of technology-based banking products and services. Furthermore the author's findings suggest that technology-based banking products and services are popular among the younger generation and its use starts to decline from the age of 50 years. In a similar study undertaken by Gan, Clemes, Limsombunchai and Weng (2006), it was revealed that the non-electronic banking customers were older than the electronic banking users and a higher proportion of retired respondents dominated the non-electronic banking group when compared with the electronic banking group, corroborating the greater inclination of younger people to use Internet banking than their older counterparts. Kadir, Rahmani & Masinaei, (2011) however, found that age played no role on how the different age groups evaluate technology-based banking services.

Purpose of the Study
The purpose of this paper is to investigate if there are significant differences on customer perceptions of technology-based banking services by demographic variables, namely, age and gender in Gauteng province, South Africa.

Research Design
A quantitative approach was used in addressing the research objective. Du Plessis and Rousseau (2007) view a quantitative approach as systematic and structured, aimed at obtaining information from respondents in a direct, open manner. Results obtained from such an approach are easily quantifiable and has a potentially high degree of accuracy.

Sampling and sampling techniques
A non-probability sampling technique was employed to reach the target population. Since it was difficult to obtain a sample frame for the study, snowball sampling was used to generate an initial sample of online bank customers. These initial customers were requested to identify other potential respondents who were online bank customers to participate in the study. Consistent with sample sizes in similar studies conducted on online banking services using a non-probability sampling technique (Pikkarainen, Pikkarainen, Karjaluoto, & Pahnila, 2004; Santos, 2003; Akinyele & Olorunleke, 2010; Ombati, Mangatu, Nyamwange & Nyaoa, 2010), the sample size for this study was set at 200 of customers who use technology-based banking services in Gauteng province, South Africa. Hundred and eighty of the completed questionnaires were used in the analysis.

Measuring instrument and data collection
The instrument was pre-tested with ten respondents in order to assess the flow of the questions, the time required to complete the questionnaire and to evaluate respondent interest and attention. In addition, a pilot study was conducted to check whether any changes needed to be made to the questionnaire before using it for the main study.

Data analysis
The data were analysed using the Statistical Package for Social Sciences (SPSS 20.0). Descriptive statistics were first used to establish a demographic profile of the respondents. Second, the data was subjected to exploratory factor analysis to identify the factors of technology-based banking service quality as perceived by the participants. ANOVA was then applied to examine the differences among the means of the socio-biographic variables with regard to their perceptions of the different service dimensions of technology-based banking service. The results of the analysis are presented in the following section.

Results and discussion

Demographic profile of the sample
Of the 200 potential respondents who were approached to participate in the survey; 180 completed the questionnaire. In terms of gender there were 58.3% (n=105) male and 41.7 % (n=75) female respondents. Most of the respondents were married (40.6%; n= 73). The age group 30-39 years comprised the largest group (36.7%; n=66), followed by the age group 20-29 years (25.6%; n=46), age group 40-49 years (22.2%; n=40) and age group 50-59 years (13.9 %; n=25). A small percentage (1.7%; n=3) of those that used Internet banking was below the age of 20 years. Approximately 41% (n=73) of the respondents indicated that they accessed the Internet through their employers`` network and 33.3 % (n=60) accessed it at home through fixed line or wireless broadband. Approximately 24.4% (n=44) of the respondents still used dial-up access from their homes

Scale reliability
The internal consistency of the scale was ascertained by using the coefficient of Cronbach alpha (Leo, Bennett & Härtel 2005). Coefficient Cronbach alpha values were computed for each construct and the overall reliability of the scale that was used in measuring online banking services. A reliability benchmark value of 0.70 and above was regarded as acceptable (Santos, 1999). The Cronbach alpha values are reported in Table 1. The overall Cronbach **α** value of the online banking scale was 0.939 implying high reliability. The reliabilities of the individual factors ranged from 0.780 to 0.949, which were considered satisfactory (Malhotra, 2004).

Table 1: Scale reliability

Dimension description/ construct	Number of items	Cronbach Alpha (α)
Online banking service quality scale		
Factor 1: Assurance, trust and appeal	12	0.949
Factor 2: Responsiveness	4	0.780
Factor 3: Ease of use	3	0.846
Factor 4: Accessibility	4	0.805
Factor 5: Fulfilment	4	0.795
Factor 6: Speed and accuracy	3	0.789
Factor 7: Contact	2	0.851
Overall reliability: Online banking scale	32	0.939

ANOVA – Seven factors of technology-based banking services and gender
Table 2 reports the analysis of variance by both genders for the seven factors. ANOVA was performed in order to establish whether there are any significant differences between males and females in evaluating technology-based banking services. The ANOVA results showed no significant differences ($p<0.05$) between males and females in terms of their evaluation of the seven factors. Hence, no further analysis was undertaken.

Table 2: ANOVA – Online banking service quality dimensions and gender

Factors		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	T	Df
Factor 1 (assurance, trust and appeal)	Equal variances assumed	0.773	0.380	-0.357	178
	Equal variances not assumed			-0.353	152.798
Factor 3 (responsiveness)	Equal variances assumed	0.003	0.957	-0.158	178
	Equal variances not assumed			-0.159	164.273
Factor 3 (ease of use)	Equal variances assumed	0.172	0.679	-0.198	178
	Equal variances not assumed			-0.198	159.291
Factor 4 (accessibility)	Equal variances assumed	0.346	0.557	1.154	178
	Equal variances not assumed			1.148	156.223
Factor 5 (fulfilment)	Equal variances assumed	0.297	0.587	1.294	178
	Equal variances not assumed			1.275	150.488
Factor 6 (speed and accuracy)	Equal variances assumed	0.072	0.789	1.011	178
	Equal variances not assumed			0.99	146.796
Factor 7 (contact)	Equal variances assumed	0.621	0.432	-0.766	178
	Equal variances not assumed			-0.76	155.268

Seven factors of technology-based banking services and age
In examining the means (Table 3) obtained by the different age groups, ANOVA analysis revealed that there exist significant differences in how the different age groups evaluate technology-based banking services. The F-test, as illustrated in Table 3, is used statistically to evaluate the differences between the group means. Of the seven factors, five show significant variances. The results presented in Table 3 show that significant differences ($p<0.05$) exist among five of the factors, namely: factor 1 (assurance, trust and appeal), factor 3 (ease of use), factor 4 (accessibility), factor 5

(fulfilment) and factor 6 (speed and accuracy). The one-way analysis of variance did not show differences of means for factor 2 (responsiveness) and factor 7 (contact) in relation to the independent variable (age of respondents).

Table 3: ANOVA – Online banking service quality dimensions and age

Factors	Groups	Sum of Squares	Df	Mean Square	F	Sig.
Factor 1 (assurance, trust and appeal)	Between Groups	5.10	4	1.27	3.28	0.01*
	Within Groups	68.08	175	0.38		
Factor 2 (responsiveness)	Between Groups	3.39	4	0.84	2.15	0.07
	Within Groups	69.01	175	0.39		
Factor 3 (ease of use)	Between Groups	3.90	4	0.97	2.51	0.04*
	Within Groups	68.04	175	0.38		
Factor 4 (accessibility)	Between Groups	5.56	4	1.39	2.87	0.02*
	Within Groups	84.71	175	0.48		
Factor 5 (fulfilment)	Between Groups	15.53	4	3.88	10.55	0.00*
	Within Groups	64.37	175	0.36		
Factor 6 (speed and accuracy)	Between Groups	6.33	4	1.58	3.52	0.01*
	Within Groups	78.77	175	0.45		
Factor 7 (contact)	Between Groups	1.77	4	0.44	0.73	0.56
	Within Groups	104.95	175	0.60		

Because significant variations were revealed by the different age groups in their evaluation of the seven online service quality dimensions, it was necessary to conduct a *post hoc* multiple comparison test to establish which age groups have significant mean differences in relation to the different factors. The results of the *post hoc* analysis are reported in Table 4.

Table 4: Post Hoc analysis - Online banking service quality dimensions and age

Dependent variable	(I) A3 (age)	(J) A3 (age)	Mean Differences (I-J)	Std. Error	Sig.
Factor 1 (assurance, trust and appeal)	1 (under 20 years) ($\bar{x} = 2.97$)	2 (20-29 years) ($\bar{x} = 4.21$)	-1.23973*	0.37167	0.001
		3 (30-39	-1.10732*	0.36821	0.003

Dependent variable	(I) A3 (age)	(J) A3 (age)	Mean Differences (I-J)	Std. Error	Sig.
		years) ($\bar{x}$ = 4.08)			
		4 (40-49 years) ($\bar{x}$ = 4.07)	-1.09236*	0.37337	0.004
		5 (50-59 years) ($\bar{x}$ = 4.27)	-1.29444*	0.38111	0.001
Factor 3 (ease of use)	2 (20-29 years) ($\bar{x}$ = 4.06)	5 (50-59 years) ($\bar{x}$ = 4.43)	-0.37022	0.15494	0.018
	3 (30-39 years) ($\bar{x}$ = 3.99)		-0.43758	0.14644	0.003
	4 (40-49 years) ($\bar{x}$ = 4.09)		-0.33625	0.15898	0.036
Factor 4 (accessibility)	1 (under 20) ($\bar{x}$ = 4.78)	2 (20-29 years) ($\bar{x}$ = 4.16)	-1.38164*	0.4146	0.001
		3 (30-39 years) ($\bar{x}$ = 4.09)	-1.31313	0.41073	0.002
		4 (40-49 years) ($\bar{x}$ = 4.07)	-1.29722	0.41649	0.002
		5 (50-59 years) ($\bar{x}$ = 4.17)	-1.39556	0.42512	0.001
Factor 5 (fulfilment)	1 (under 20) ($\bar{x}$ = 2.08)	2 (20-29 years) ($\bar{x}$ = 3.94)	-1.85688*	0.36142	0.000
		3 (30-39 years) ($\bar{x}$ = 4.11)	-2.0303	0.35805	0.000
		4 (40-49 years) ($\bar{x}$ = 4.18)	-2.09167	0.36307	0.000
		5 (50-59 years) ($\bar{x}$ = 4.38)	-2.29667	0.37059	0.000
Factor 6 (speed and accuracy)	1 (under 20) ($\bar{x}$ = 2.78)	2 (20-29 years) ($\bar{x}$ = 4.05)	-1.27295	0.39978	0.002

Dependent variable	(I) A3 (age)	(J) A3 (age)	Mean Differences (I-J)	Std. Error	Sig.
		3 (30-39 years) ($\bar{x}$ = 4.17)	-1.38889[*]	0.39606	0.001
		4 (40-49 years) ($\bar{x}$ = 3.96)	-1.18889[*]	0.40161	0.003
		5 (50-59 years) ($\bar{x}$ = 4.17)	-1.39556[*]	0.40993	0.001

The *post hoc* test indicates that differences exist among customers of different age groups with respect to factor 1 (**assurance, trust and appeal**). The respondents under 20 years of age ($\bar{x}$ = 2.97) differed from the other age groups, namely respondents aged 20-29 years ($\bar{x}$ = 4.21), respondents aged 30-39 years ($\bar{x}$ = 4.08), respondents aged 40-49 years ($\bar{x}$ = 4.07) and respondents aged 50-59 years ($\bar{x}$ = 4.27). It is evident from the mean scores that the respondents under 20 years of age gave lower scores for factor 1 (assurance, trust and appeal) compared with those respondents who were relatively older. This could be a result of having higher expectations in as far as assurance, trust and appeal of the bank`s websites is concerned. The younger cohort did not find the bank`s websites aesthetically and visually appealing. Their exposure as young people to a wide range of websites, perhaps more visually appealing websites such as the social media (e.g. facebook and twitter) could have contributed to their having higher expectations regarding the aesthetic design of websites, and consequently they gave the banks a lower score on this factor. Design which enhances the usability of websites was found to be an important facet of service quality and customer satisfaction (Yoon, 2010:1297). The study of Poon (2007:66) explains that flashy graphics are generally criticised by the older age group as being time-wasting and intrusive, while the youngsters perceive that innovative use of colour, animation and graphics on the websites contribute to the technological entertainment value. This suggests that multimedia friendliness is less important to the older age groups in the usage of e-banking facilities. Overall, the results of this study suggest that younger users of online banking were more concerned with issues of assurance, trust and appeal than their older counterparts were. In contrast, the study of Kadir *et al.* (2011) reported no relationship between age factors and the trust and assurance dimension of online banking services.

Significant differences were noted in the mean values scored with regard to factor 3 (**ease of use**) by the age group 50-59 years old ($\bar{x}$ = 4.43) compared with other age groups, namely age group 20-29 years ($\bar{x}$ = 4.06), age group 30-39 years ($\bar{x}$ = 3.99) and age group 40-49 years ($\bar{x}$ = 4.09). The results imply that ease of use of online banking is viewed more favourably by respondents of age group 50-59 years than by the other age groups. This could be as a result of having either lower expectations or more realistic expectations regarding the effort of using the bank`s website for transactions. The older age cohort (50-59 years old) also found the organisation and structure of the content of online banking easy to understand and follow in conducting their transactions. The study of Kadir *et al.* (2011), however, found that age does not

have an impact on how the different age groups evaluate online banking service with regard to ease of use.

Significant differences were observed upon examination of the way in which the different age groups scored factor 4 (**accessibility**). Respondents under 20 years of age scored the accessibility dimensions more favourably ($\bar{x}$ = 4.78) than did respondents who were 20-29 years old ($\bar{x}$ = 4.16), 30-39 years old ($\bar{x}$ = 4.09), 40-49 years old ($\bar{x}$ = 4.07) and 50-59 years old ($\bar{x}$ = 4.17). This result explains that, in comparison with relatively older people, those online banking users that are younger, (i.e. aged less than 20 years) find banking websites more accessible. Accessibility included service attributes such as the loading and the freezing of the websites during transactions, which can more easily be adapted and manipulated by younger age groups than by their older counterparts. As is consistent with the findings of Odumeru (2012), in this study age has an impact on the adoption and acceptance of e-banking. The findings further suggest that Internet banking is popular among the younger generation and its use starts to decline from the age of 50 years.

The *post hoc* test further indicates that differences exist among customers with respect to factor 5 (**fulfilment**). The inspection showed that means scored by respondents under the age of 20 years ($\bar{x}$ = 2.08) was much lower than those scored by respondents aged 20-29 years ($\bar{x}$ = 3.94), respondents aged 30-39 years ($\bar{x}$ = 4.11), respondents aged 40-49 years ($\bar{x}$ = 4.18) and respondents aged 50-59 years ($\bar{x}$ = 4.38). This factor comprised aspects such as functionality, promises by the bank and accuracy of transactions that take place via internet banking. Naturally, the younger age group, having higher expectations, given their keen interest in technology and specifically the Internet, were not impressed by the functionality of the banks` websites, as evidenced by their low scoring on this service attribute. On the other hand, their older and more mature counterparts, having modest and realistic expectations, were easily fulfilled by the online banking services when compared with respondents younger than 20 years of age.

Finally, the *post hoc* test revealed that customers` evaluation of online banking is significantly different among the respondents with respect to factor 6 (**speed and accuracy**). The mean scored by respondents under the age of 20 years old ($\bar{x}$ = 2.08) was once again much lower than the means for those respondents aged 20-29 years ($\bar{x}$ = 4.05), 30-39 years ($\bar{x}$ = 4.17), 40-49 years ($\bar{x}$ = 3.96) and 50-59 years ($\bar{x}$ = 4.17). One plausible explanation could be that the under-20 age group, being vibrant and technology-friendly find that Internet banking does not live up to their expectations especially with regard to speed, as they are more accustomed to Internet usages such as gaming websites (Play Station), which are very interactive and embedded with high-speed applications. In a study undertaken by Gan, Clemes, Limsombunchai and Weng (2006), it was revealed that the non-electronic banking customers were older than the electronic banking users and a higher proportion of retired respondents dominated the non-electronic banking group when compared with the electronic banking group, corroborating the greater inclination of younger people to use Internet banking than their older counterparts.

In examining the impact of the two socio-demographic variables, namely age and gender, on the evaluation of the dimensions of technology-based banking service quality, ANOVA reveals that there were significant differences among the different age

groups while no significant differences were observed between males and females. The younger age group (under 20 years) seem to rate the quality of the online banking service lower with respect to the following factors: factor 1 (assurance, trust and appeal), factor 5 (fulfilment) and factor 6 (speed and accuracy). Factor 4 (accessibility), was, however, viewed favourably by this age group. Their older and more mature counterparts (50-59 years old) perceived factor 5 (fulfilment) more favourably than did the younger age cohorts.

Limitations and Implications for Future Research

Customers from Southern Gauteng who made use of online banking facilities of commercial banks constituted the population for the study. While the dimensions that were extracted in this study were in congruence with other studies undertaken in other parts of the world, taking into account that South Africa is comprised of different sub-markets, each with distinct characteristics, it would be unrealistic to generalise the findings revealed in the study to other regions of the country. Future research could contribute to analysis of consumer behaviour by adding other perception variables that may influence technology-based banking service quality. A quantitative research design was employed in this research. Future research may consider both a qualitative and quantitative analysis using triangulation methodology. The study was not organisation/bank-specific. For more practical purposes, future endeavours could be focused in organisation/bank specific studies.

Conclusion

Technology, government regulation and deregulation, and increasing customer sophistication are forcing financial service institutions to re-evaluate their current business practices in light of a changing and competitive business environment. Banks are forced to develop and use alternative service channels with the aim of building bigger market share, improving customers' perceptions of service quality and achieving customer loyalty. The absence of interpersonal contact and the replacement of human-to-human interaction with human-to-machine interaction have a serious implication on which dimensions to be used when evaluating service quality in an online setting. Thus, an understanding of the dimensionality and the perception thereof by different demographic variables such as age and gender is of crucial importance to banks. Accordingly, the study seeks to make a contribution to the body of knowledge on the understanding, measurement and management of service quality of technology-based banking services in South Africa as perceived by these demographic variables. Similarly, the study also aimed to contribute to marketing practitioners who could benefit from the findings of the research by utilising appropriately technology-supported services as a competitive edge in today`s fast pace business environment where consumers are becoming increasingly demanding and sophisticated.

References

Akinci, S., Atilgan-Inan, E. & Aksoy, S. 2010. Re-Assessment of E-S-QUAL and E-RecS-QUAL in a Pure Service Setting. *Journal of Business Research*, 63(3): 232-240.

Akinyele, S. T. & Olorunleke, K. 2010. Technology and service quality in the banking industry: An empirical study of various factors in electronic banking services. *International Business Management,* 4: 209-221.

Barnes, S. & Vidgen, R. 2003. Measuring Website quality improvements: A case study of the forum of strategic improvement. *Industrial Management and Data Systems*, 103(5): 297-309.

Berndt, A.D., Saunders, S.G. & Petzer, D.J. 2010. Readiness for banking technologies in developing Countries, *Southern African Business Review* 14(3): 47-76.

Bressolles, G.& Durrieu, D. 2010. A typology of online buyers for French wine Websites based on electronic service quality dimensions. *International Journal of Wine*, 22(4): 335-348.

Carlson, J. & O`Cass, A. 2011. Developing a framework for understanding e-service quality, its antecedents, consequences, and mediators. *Managing Service Quality,* 21(3): 264-285.

Du Plessis, F. & Rousseau, G.G. 2007. *Buyer Behaviour: Understanding Consumer Psychology and Marketing*. Cape Town: Oxford University Press Southern Africa.

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

Han, S. & Baek, S. 2004. Antecedents and consequences of service quality in online banking: An application of the SERVQUAL instrument. *Advances in Consumer Research,* 31: 208-214.

Harrison, A.W. & Rainer Jr, R.K. 1992. The influence of individual differences on skill in end-user computing, *Journal of Management Information Systems*, 9(1): 93-111.

Jun, M. & Cai, S. 2001. The key determinants of internet banking service quality: A content analysis, *International Journal of Bank Marketing,* 19(7): 276-291.

Kadir, A. H., Rahmani, N. & Masinaei, R. 2011. Impacts of service quality on customer satisfaction: Study of Online banking and ATM services in Malaysia. *International Journal of Trade, Economics and Finance*, 2(1): 1-9.

Kasper, H., Van Helsdingen, P. & Gabbot, M. 2006. *Services Marketing Management: A Strategic Perspective.* London: John Wiley & Sons, Ltd.

Leo, C., Bennett, R. & Härtel, C. E. J. 2005. Cross-cultural differences in consumer decision-making styles. *Journal of Cross-Cultural Management.* 12(3): 33-63.

Loiacono, E. T., Chen, D. Q. & Goodhue, D. L. 2002. WebQual revisited: predicting the intent to reuse a web site. *Eighth Americas Conference on Information Systems,* 301-309.

Lovelock, C. & Wright, J. 2004. *Services Marketing: People, Technology, Strategy*. New York: Pearson Prentice- Hall.

Maduku, D.K. & Mpinganjira, M. 2012. Empirical investigation into customers' attitude towards usage of cell phone banking in Gauteng, South Africa, *Journal of Contemporary Management*, 9: 172-189.

Malhotra, N.K. 2004. *Marketing research: An Applied Orientation*. 4th ed. Upper Saddle River, New Jersey: Pearson Education Prentice Hall.

Ombati, T.O., Mangatu, P.O., Nyamwange, S.O. & Nyaoa, R. B. 2010. Technology and service quality in the banking industry. *African Journal of Business and Management (AJBUMA),* 1: 151-164.

Parasuraman, A. 2000. Technology Readiness Index (TRI): A multiple-item scale to measure readiness to embrace new technologies, *Journal of Service Research*, 2(4): 307-320.

Parasuraman, A., Zeithaml, V. & Malhotra, A. 2005. E-S-QUAL: A multiple-item scale for assessing electronic service quality. *Journal of Service Research,* 7(3): 213-233.

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

Poon, W. 2007. Users' adoption of e-banking services: The Malaysian Perspective. *Journal of Business & Industrial Marketing*, 23(1): 59 -69.

Santos, F. 2003. E-service quality: A model of virtual service quality dimensions. *Managing Service Quality,* 13(3): 233-246.

Tsikriktsis, N. 2004. A technology readiness-based taxonomy of customers: A replication and extension, *Journal of Service Research*, 7(1): 42-52.

Yang, H & Tsai, F. 2007. General E-S-QUAL Scales Applied To Websites Satisfaction and Loyalty Model. *Communications of the International Information Management Association (IIMA),* 7(2): 115-126.

Yang, Z. & Fang, X. 2004. Online service quality dimensions and their relationships satisfaction: A content analysis of customer reviews of securities brokerage services. *International Journal of Service Industry Management,* 15(3): 302- 325.