Journal of Internet Banking and Commerce

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

*Journal of Internet Banking and Commerce, December 2013, vol. 18, no.*3
(*http://www.arraydev.com/commerce/jibc/*)

Internet Banking Users's Competence and its Influence On Usage Satisfaction – A View from India

VIJAYAKUMAR RAJARATHINAM, **MBA, M.Phil**
Research Scholar, Anna University of Technology, Coimbatore, India
Postal Address: **23, Ashok Nagar, Kovaipudur, Coimbatore 641 042**
Author's Personal/Organizational Website: **www.act.edu.in**
Email: **vijayjones@gmail.com**
Vijayakumar Rajarathinam is a doctoral research scholar and works for Agni College of Technology, Chennai, India. His areas of interest are E-Banking, Banking Services, Financial Institutions and issues related to Banking.

CHANDRA KUMAR MANGALAM, **MBA. Ph.D**
Asst.Professor, Department of Management Studies, Anna University, Coimbatore, India
Postal Address: **Jothipuram, Coimbatore, Tamil Nadu , India**
Email: **ckmaucbe@gmail.com**
Dr Chandra Kumar Mangalam is a Associate Professor in the Department of Management Studies, Anna University Regional Centre, Coimbatore, India. His areas of research are consumer usage behavior of net banking, consumer confusion in high involvement products and e-banking users confusions.

Abstract

Competitive pressures, emergence of internet technology pressurized many of the Indian banks to undergo tremendous changes and offer technology based services to their customers. Especially innovative development in Information and Communication Technology resulted in the new dimensional Indian banks to offer banking services through electronic services and computerized manners which resulted in the dawn of ATM, Internet banking, Mobile banking summed up as Electronic Banking. Electronic Banking is a radical technological innovation with potential to change the structure and nature of banking from "bricks and mortar" into a "clicks and mortar". There has been substantial growth in Internet Banking. Research on the reason for its growth has been

few and apart though some of the research indicates adoption of internet banking depends on the competency, technical experience and self efficacy of the consumers. This has necessitated the need to research further for better understanding of the consumer's usage and their satisfaction.

Keywords: **banking; information and communication technology (ICT); Electronic Banking; Internet Banking;**

INTRODUCTION

Competitive pressures, emergence of internet technology pressurized many of the Indian banks to undergo tremendous changes and offer technology based services to their customers. Especially innovative development in Information and Communication Technology resulted in the new dimensional Indian banks. Now banks come to the doorstep of the consumer, offering tailor-made banking solutions to the customer and also go a step ahead day by day to operate their services every nuke and corner of India. These situations pressurized the Indian banks to offer the banking services through electronic services and computerized manners which resulted in the dawn of ATM, Internet banking, Mobile banking.

Internet banking (IB) is a radical technological innovation with potential to change the structure and nature of banking from "bricks and mortar" into a "clicks and mortar". Internet Banking made a huge positive contribution in integrating Indian Banks with the banking system of the rest of the world in a much faster and effective manner. (Internet Banking In India, by GS Narayanan, http://ezinearticles.com/?Internet-Banking-In-India&id=4956192) But usage rate of net banking highly depends upon the services offered by the banks, factors influencing to using internet banking and knowledge of the users to how to handle it properly. There has been substantial growth in Internet Banking. Research on the reason for its growth has been few and apart though some of the research indicates adoption of internet banking depends on the competency, technical experience and self efficacy of the consumers. This has necessitated the need to research further for better understanding of the consumer's usage and their satisfaction.

REVIEW OF LITERATURE

Bayus (1987) argued that technology usage skills and prior experience influences customers' eagerness in adopting new technologies. He also pointed out that next generation of a technology has a positive influence on the usage when two technologies are complimentary. DeLone, (1988) and Igbaria et al., (1995) research studies observe that consumers' beliefs and attitude on information technology adoption is influenced by previous technological skill or prior computer experience. Campeau et al, (1999) in their research observed that new technology adoption is influenced by technology self-efficacy.

Au et al. (2000) and Agarwal et al., (2000) assumed that understanding of new technologies and technically skilled customers better understand their consequences than others. Trocchia and Janda (2000) argued that users past experience and usage competency with particular technologies is associated with consumers' adoption rate of the Internet related technologies

Jayawardhena and Foley (2000) argued that typical Internet banking user has been identified as a high involved person, with good education and skill belonging to the upper middle class. Lee and Lee (2001) employed the use of banking service as a proxy variable indicating consumers' need for banking service. They indicated that heavy users of banking services might adopt Internet banking as a convenient option that can save time and effort. However, if consumers have no experience of previous banking technologies, they might find it hard to adopt recent banking technology. They might not be comfortable and lack the confidence to use Internet banking, even though they think Internet banking is necessary.

Polatoglu and Ekin (2001) and Black et al. (2001) views are contradictory to each other. While Polatoglu and Ekin record that well-educated people with familiarity in the Internet and e-mail, would not find Internet banking to be complex and it is useful, Black argued that consumer's experience with computers and the complexity in conducting financial transactions over the Internet was inversely related.

Karjaluoto et al. (2002) also subscribed to the views in his research observations that prior computer experience and skills such as excellence in handling internet, e-mail, and e-payment had the most noteworthy impact on online banking usage. Technology experience, such as ATM, e-ID, teletext, and automats, were significant factors for attitude toward online banking among Finland bank consumers. Wang et al., (2003) indicated that the individual differences in computer self-efficacy formed significant positive effects on the behavioral intention to adopt Internet Banking through perceived usefulness and ease of use.

Gerrard and Cunningham (2003) studied the characteristics of online banking in Singapore and found that computer experience or computer proficiency was an influential factor for adoption of online banking. According to the study of Laforet and Li (2005) perception of risks as well as lower level competency in computer and technological skills are the main factors causing obstruction in online banking acceptance.

Guriting, Chunwen, Ndu, (2007) found that the strong determinants of the behavioral intention to adopt internet banking are perceived usefulness and perceived ease of use. Computer self-efficacy is an individual's judgment of their computer competence. It is emphasized that computer self efficacy reflects individual perceptions and abilities to fulfill job requirements of computer competence, which is not related to practical computer skills Computer self-efficacy focuses on an individual's perceived ability in computer related situations and refers to judgments of capacity to accomplish a computer related job.

Annamalah, Sanmugam, (2008) study results reveal that perceived usefulness, perceived ease of use, and self efficacy have a significant association with intention to

use Internet banking among Malaysian consumers. Murali Raman et, al .,(2008) results show that Internet banking users and non-users have different expectation towards e-service quality preferences. Analysis of variance in E-Service Quality Preferences among Internet Banking Adopters (light, medium, and heavy users) does not vary. The only difference is in the "incentive" variable preference. The medium and heavy users might not need as much incentive as the light user. The medium and heavy users are the early adopters who already rely and realize the importance of Internet banking. It is different with light user where incentive should be given appropriately to them.

Neha Dixit, Saroj K. Datta(2010) in their research observe that in spite of their security and privacy concern, adult customers are willing to adopt online banking if banks provide them necessary guidance which indicated that consumers who lack electronic banking skill may slowly adopt internet banking and banks should take necessary steps to upgraded their usage skills by the respective banks. Redelinghuis and Rensleigh(2010) in their research in South Africa have concluded that even though value-adding endeavors will ensure that customers experience and perception on their internet banking experience to be enriching, lack of computer education and awareness campaigns and diverse cultures and languages slowly impact the consumers to adopt electronic banking activities.

Elisha Menson Auta(2010) in her study in Nigeria shows that the customers have security and , access concerns and no enough knowledge regarding e-banking services rendered by banking sector in Nigeria, having a major negative effect in the usage of internet banking. Wadie Nasri (2011) says that risk, security and prior internet knowledge is also an important factor influencing customers adopting internet banking after convenience.

RESEARCH OBJECTIVES AND HYPOTHESIS

Similar to any technology driven product, internet banking has also varied responses and preferences. The researcher attempts to understand if there exist any motivating factors for internet usage and what is the competency level that motivates usage of internet banking.

India as a country is demographically highly varied country which leads to different levels of internet banking usage. The researcher tries to find the relationship between consumer's level of competency and Internet banking usage frequency and the association between consumers usage competency and their usage satisfaction

METHODOLOGY

The researcher used the structured questionnaire to obtain the research data from bank customers of various banks located in Coimbatore district, Tamilnadu, India. The convenience sampling method was used to capture the relevant information from the users of net banking. A total of 300 questionnaires were randomly administered to customers and 206 questionnaires turned to be valid data, which comprised of frequent and infrequent users of internet banking. Data obtained from questionnaire were analyzed using simple percentage analysis and one-way analysis of variance. SPSS

package was used for data compilation and analysis, while descriptive statistics were computed and used in the interpretation of findings.

Demographic profile of the respondents

The sample size of 206 internet banking service users includes 116(56.31%) male and 90 (43.69%) female. In which 54.32 %(44) female consumers and 45.68% (37) male samples were having beginners level knowledge in handling net banking which accounted as 81. Among 114 moderate users of net banking, 66.67% of them were male and 33.33% of respondents were female net banking users. Out of 11 excellent users 72.73% of them were female consumers and 27.27% of the net banking users were male.

Out of 206 samples, 34(40%) of the beginners, 47(55.29%) of the moderate and 4(4.71%) of the samples are having excellence in internet banking, residing in urban areas which accounted as 85. Out of 88 semi urban residents, 44(50%) of them were having moderate internet banking knowledge, followed by 39(44.32%) of them were learners of internet banking related activities whereas 5(5.68%) of them opined that they having excellent knowledge in handling internet banking related activities. Among 33 rural respondents, 23(69.70%) of them were average level proficient's in electronic banking, followed by 8(24.42%) and 2(6.06%) of them were having beginners and excellent knowledge in using electronic related banking activities.

The study reveals that 22(48.89%) of the beginners, 19(42.22%) of the moderators and 4(8.89%) of the excellent users of internet banking fall in the age category of below 21 years which accounted as 45 responses. 53(60.23%) of the moderate internet banking users, followed by 36.63% of the beginners and 3.41% of the excellent users were in the age group of 21-30 years.

Among 31 to 40 years old consumers(55 samples) , 60% of the internet banking users were only having average knowledge on electronic banking, followed by 32.73% of them were beginners where as only 7.27% of the samples were excellent in using internet banking. Out of 15 samples who fell in the age category of 41 – 50 years, 53.33% of them were moderate users and 46.67% of them were beginners of internet banking activities. Out of 206 consumers, only 3 of them were in the age of above 51 years which include 66.67% of the beginners and 33.33% of them technically strong in dealing with electronic banking.

Motivational factors for choosing internet banking amongst beginners, moderate users and excellent users of net banking

Growth and usage of internet banking in a country depends on many factors, such as success of internet access, motivation features, household growth of internet usage, legal and regulatory framework and consumer's usage skills. Net-banking can offer numerous benefits which in turn motivate individual consumers to adopt or quit the net banking.

In this study researcher assessed the beginners, moderate and excellent users of net banking view about the factors motivating to choose the net banking services. For this the researcher considered the factors like anywhere at any time, ease of use, additional benefits, safety and security, quick direct access of banking services, cost effectiveness

and status symbol to the customers for which they may be relatively satisfied than that of manual system of banking. Among the seven factors, which factor influenced and motivated the beginners, moderate and excellent net banking consumers, was analyzed using one-way ANOVAS by the researcher.

Hypothesis 1: There is no significant difference between internet banking usage competency and motivating factors

Analysis of variance between consumer usage competency and various motivating factors for choosing internet banking and descriptive mean scores of various motivating factors						
ANOVA		Sum of Squares	Df	Mean Square	F	Sig.
Anywhere at any time	Between Groups	46.89	2.00	23.44	18.34	0.00
	Within Groups	259.45	203.00	1.28		
	Total	306.33	205.00			
Ease of use	Between Groups	17.79	2.00	8.90	6.02	0.00
	Within Groups	300.05	203.00	1.48		
	Total	317.84	205.00			
Additional benefits	Between Groups	29.66	2.00	14.83	8.93	0.00
	Within Groups	337.17	203.00	1.66		
	Total	366.83	205.00			
safety and security	Between Groups	16.44	2.00	8.22	4.35	0.01
	Within Groups	383.49	203.00	1.89		
	Total	399.93	205.00			
Quick direct access of banking services	Between Groups	25.73	2.00	12.86	6.13	0.00
	Within Groups	425.75	203.00	2.10		
	Total	451.48	205.00			
Cost effectiveness	Between Groups	47.89	2.00	23.94	13.06	0.00
	Within Groups	372.22	203.00	1.83		
	Total	420.10	205.00			
Status symbol	Between Groups	23.72	2.00	11.86	6.22	0.00
	Within Groups	387.33	203.00	1.91		
	Total	411.05	205.00			
Descriptive						
Mean						
Anywhere at any time	Beginners	2.28				
	Moderator	1.44				
	Excellent	2.91				
Ease of use	Beginners	2.48				
	Moderator	2.03				
	Excellent	3.09				
Additional benefits	Beginners	2.77				

	Moderator	2.01
	Excellent	2.82
	Beginners	2.94
	Moderator	2.36
Safety and security	Excellent	2.36
Quick direct access of banking services	Beginners	2.89
	Moderator	2.19
	Excellent	3.00
	Beginners	3.19
	Moderator	2.29
Cost effectiveness	Excellent	3.64
	Beginners	3.22
	Moderator	2.53
Status symbol	Excellent	3.09

Table 1 Influence of motivating factors Analysis

The framed hypothesis is fully rejected as it expounds that there is significant difference between mean of internet banking usage competency and motivating factors. Various usage competent consumers are influenced by different motivating factors during the time of choosing net banking. From the descriptive analysis, it is evident that the excellent users were influenced by cost effectiveness, quick direct access of banking services, additional benefits, ease of use and any time at anywhere whereas status symbol and safety & security were more considered by the beginners of net banking.

Frequency of internet banking usage and consumer internet banking competency

The table depicts that 66.67% of the beginners were occasional users of internet banking, followed by 16.05% of them were once in a month users whereas 7.41% and 6.17% of the beginners were once in a week and fifteen days once users of net banking respectively and once in a day users were only 3.70%. Among 114 moderate users, fifteen days once users and monthly one time users were very less which accounted as 4.39% , once in a day users(21.05%) were slightly lower than once in a week users(23.68%) whereas 46.49% of the average users were only occasional users.

Among 11 excellent users, occasional users are slightly higher than the other frequency of users which is accounted as 45.46%. Once in a day, week and fifteen days users were accounted as 54.54%. Further, in order to find the degree association between consumers e-banking usage competency and frequency of usage of various e-banking services, cross tabulation were performed.

Frequency of Internet Banking and Consumer internet banking competency		Beginners	Moderate users	excellent users	Total
Once in a day	Count	3.00	24.00	2.00	29.00
	%	3.70	21.05	18.18	100.00

Once in week	Count	6.00	27.00	2.00	35.00
	%	7.41	23.68	18.18	100.00
Once in fortnight	Count	5.00	5.00	2.00	12.00
	%	6.17	4.39	18.18	100.00
Once in month	Count	13.00	5.00	0.00	18.00
	%	16.05%	4.39	0.00	100.00
Occasionally	Count	54.00	53.00	5.00	112.00
	%	66.67	46.49	45.46	100.00
Total	Count	81.00	114.00	11.00	206.00
	%	39.32	55.34	5.34	100.00

Table 2 Usage and Competency Analysis

It is highlighted from the above table 3 that 66.67% of the beginners, 46.49 % of the moderate competent and also 45.45% of the excellent competent were infrequent users of Internet banking. Out of 11 excellent users, each two samples usage frequency fall in the once in a day, once in a week, once in fortnight respectively.16.05% of the beginner using their Internet banking services once in a month while 23.68% of the moderate usage competency consumers using their respective banks internet bank service once in week.

Hypothesis 2: There is no significant relationship between consumer's level of competency and Internet banking usage frequency. Since the chi-square value is 0.00, which is lesser than the 0.005, the hypothesis was rejected. As a result it can be concluded that, there is good association between consumer's level of competency and their frequency of internet banking usage.

In order to find the relationship between consumer's usage competency and frequency of using internet banking, a Chi-square test was performed and the result of the test is shown in the table 3.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	33.065 (a)	8.00	0.00
Likelihood Ratio	35.42	8.00	0.00
Linear-by-Linear Association	9.89	1.00	0.00
N of Valid Cases	206.00		
a-5 cells (33.3%) have expected count less than 5. The minimum expected count is .64.			

Table 3 Usage competency and usage satisfaction results

Consumer e-banking usage competency and usage satisfaction

Table 4 shows that e-banking consumers rating about their usage competency on Internet banking services offered by their respective banks. 55.34% (114) samples were opined that they have moderate knowledge and competency in handling of internet banking services, followed by 39.32%(81) respondents were novice consumers whereas meager 5.34%(11) of the respondents consider them as excellent competent in handling internet banking services like online transaction, e-purchase and e-payment , e-ticketing and etc.

E-banking usage competency		
	Frequency	Percent
Beginner	81.00	39.32
Moderate	114.00	55.34
Excellent	11.00	5.34
Total	206.00	100.00

Table 4 E-Banking usage competency

In order to find the significant difference between the e-banking usage competency and usage satisfaction perceived by the e-banking users, an ANOVA test was performed and the result of the test is shown below.

Hypothesis 3: There is no significant difference between internet banking users' competency and usage satisfaction

Descriptive				
	N	Mean	Std. Deviation	Std. Error
Beginner	81.00	2.26	0.91	0.10
Moderate	114.00	2.40	1.17	0.11
Excellent	11.00	3.36	1.29	0.39
Total	206.00	2.40	1.10	0.08

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11.82	2.00	5.91	5.05	0.007
Within Groups	237.54	203.00	1.17		
Total	249.36	205.00			

Post hoc Test	Multiple Comparisons

Dependent Variable	(I) Skill rating	(J) Skill rating	Mean Difference (I-J)	Std. Error	Sig.
Level of satisfaction	Beginners	Moderate users	0.14	0.16	0.63
		excellent users	1.10	0.35	0.00
	Moderate users	Beginners	0.14	0.16	0.63
		Excellent users	0.96	0.34	0.01
	Excellent users	Moderate users	0.96	0.34	0.01
		Beginners	1.10	0.35	0.00
*The mean difference is significant at the .05 level.					

Table 5 ANOVA Test

The F value 5.05 for the mean difference in usage satisfaction between various usage competency of e-banking consumers is significant ($p<0.005$). It emphasis that there is significant difference between e-banking usage competency of the consumers and usage satisfaction. The post hoc test reveals that excellent users of various e-banking operations have more satisfaction than their other counterparts: Moderate and beginners level competency. Hence, the hypothesis is not accepted.

FINDINGS AND CONCLUSION

The test results indicate that users were influenced by factors such as quick direct access, ease of use, anytime anywhere banking, status symbol, safety & security. The influence of the factors varied from the type of users.

Consumers have different levels of competency in internet banking usage. The higher the consumers felt about their competency in handling internet banking, higher was their frequency in usage of internet banking. Also highly competent internet banking users had high levels of usage satisfaction. Moderate and novice of internet banking users had relatively lesser levels of usage satisfaction.

In the current scenario Indian customers are moving towards Internet banking, slowly but steadily. Most of the Indian banks have started providing Internet banking services. But success rate of electronic banking depends on the various aspects of banking services and motivating factors of consumers to choose internet banking. Here researcher classified the customer into three groups on the basis of opinion about internet banking competency – excellent users, moderate users and beginners. From this, majority of the respondents were occasional users and chi-square test results indicate that frequency of net banking usage associates with user's competency.

Further moderate users and beginners were more occasional user than the excellent users of net banking. Once in a day and weekly users have moderate knowledge which is slightly higher than the other two categories. In the entire age category consumer with excellent skill in net banking is very lesser than other two group. It means that all the age group of samples are having average and beginners level knowledge in using net banking.

Internet-banking service is considered a new era in banking, which banks spend considerable amount of money on it to make it available to their customers at their nearest location. Reach each and every user of banking and offer value added services, many of the Indian banks are locating their branches and services even in tiny villages of India. But usage rate highly differ on the basis of competency of handling electronic aspects of banking .This study evidences that excellent users of internet banking were very less in urban, semi-urban and rural areas whereas consumers with moderate knowledge are slightly higher than the novice consumers who currently live in urban, semi-urban and rural area.

Anywhere at any time, Ease of use, Additional benefits, Quick direct access of banking services and Cost effectiveness features were more considered by excellent users whereas Status symbol, safety and security were more considered by the beginners of net banking at the time of choosing net banking facilities. Further, excellent users of net banking operations have more satisfaction than moderate users and beginners of net banking. Hence, lack of usage competency could be one of the factors for having a low rate of net banking usage and satisfaction. Hence it is strongly believed that continuously educating, training the banking customers with how to use the net banking services will definitely increase the rate of using Internet Banking services and satisfaction. This means that banks need to ensure their Internet Banking systems are well secured, reliable and user-friendly, and need to better promote and familiarize their customers about the Internet Banking.

REFERENCES

Agarwal, R., Sambamurthy, v. & Stair, R. M. (2000) Research Report: The Evolving Relationship Between General and Specific Computer Self- Efficacy-An Empirical Assessment. Information Systems Research, VOL.11, NO.4, 418-430.

Agarwal, R., Sambamurthy, V., and Stair, R.M. (2000). Research Report: the Evolving Relationship betweenGeneral and Specific Computer Self-Efficacy-an Empirical Assessment. Information Systems Research, 11 (4), 418-30. doi:10.1287/isre.11.4.418.11876, http://dx.doi.org/10.1287/isre.11.4.418.11876

Bayus, B. L. (1987). Forecasting sales of new contingent products: An application to the compact disc market. Journal of Product Innovation Management, 4(December), 243-255.

Black, N.J., Lockett, A., Winklhofer, H., & Ennew, C. (2001). The adoption of Internet financial services: A qualitative study. International Journal of Retail & Distribution Management, 29(8), 390-398.

Chou, D., and Chou, A.Y. (2000). A Guide to the Internet Revolution in Banking. Information SystemsManagement, 17 (2), 51-7. doi:10.1201/1078/43191.17.2.20000301/31227.6, http://dx.doi.org/10.1201/1078/43191.17.2.20000301/31227.6

Compeau, D.R., Higgins, C.A. and Huff, S. (1999) Social Cognitive Theory and Individual Reaction to Computing Technology: A Longitudinal Study, MIS Quarterly, 23, 2, 145-158.

Gerrard, P., and Cunningham, J.B. (2003). The Diffusion of Internet Banking among Singapore consumers. International Journal of Bank Marketing, 21 (1), 16-28. doi:10.1108/02652320310457776, http://dx.doi.org/10.1108/02652320310457776

Guriting, G., Chunwen, G., Ndu, N. N. O. (2007). Computer self-efficacy levels, perceptions and adoption of online banking. International Journal of Services Technology and Management, 8(1), 54-61.

Hong, W., Thong, J.Y.L., Wong, W.M., and Tam, K.Y. (2001). Determinants of User Acceptance of Digital Libraries: An Empirical Examination of Individual Differences and System Characteristics. Journal of Management Information Systems, 18(3), 97-124.

Igbaria, M. & Iivari, J. (1995) The Effects of Self-efficacy on Computer Usage. Omega, International Management Science, VOL.23, NO.6, 587-605.

Johnson, R.D., and Marakas, G.M. (2000). Research Report: the Role of Behavior Modeling in Computer Skills Acquisition-Toward Refinement of the Model. Information Systems Research, 11(4), 402-417.doi:10.1287/isre.11.4.402.11869, http://dx.doi.org/10.1287/isre.11.4.402.11869

Laforet, S. and Li, X., (2005), “Consumers’ attitudes towards online and mobile banking in China” International Journal of Bank Marketing, Vol. 23 No. 5, pp. 362-380.

Karjaluoto, H., Mattila, M., & Pento, T. (2002). Factors underlying attitude formation towards online banking in Finland. International Journal of Bank Marketing, 20(6), 261-272.

Lee, E., & Lee, J. (2001). Consumer adoption of Internet banking: Need-based and/or skill based? Marketing Management Journal, Spring.

Polatoglu, V.N. & Ekin, S. (2001). An empirical investigation of the Turkish consumers’ acceptance of Internet banking services. International Journal of Bank Marketing, 19(4), 156-165.

Somkiat Mansumitrchai, Husam-Aldin N. AL-Malkawi (2011) International Journal of Business and Management Vol. 6, No. 9; September 2011 , 155 – 169 .

Zaigham Mahmood Attitudes towards the use of E-banking: Result of a Pilot Survey, Communications of the IBIMA ,Volume 8, 2009 170 – 174 , ISSN: 1943-7765 , http://www.ibimapublishing.com/journals/CIBIMA/volume8/v8n23.pdf

Thamarai Selvan N,.Senthil Arasu B, Sivagnanasundaram M, Role Of Existing Channels On Customer Adoption Of New Channels: A Case Of ATM and Internet Banking, EJISDC (2011) 45, 1, 1-15.

Wang, Y., Wang, Y., Lin, H., and Tang, T. (2003). Determinants of User Acceptance of Internet Banking: An Empirical Study. International Journal of Service Industry Management, 14 (5), 501-19. doi:10.1108/09564230310500192, http://dx.doi.org/10.1108/09564230310500192