An Emerging Banking Technology and Its Adoption by Indian Consumers

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Abstract: Information technology is considered as the key driver for the changes taking place around the world and in the future development of financial services and banking is one of the most important among them. With the rapid growth of the internet most banks are attempting to attract and retain customers in this highly competitive market through providing various e-banking services. Electronic banking service is becoming increasingly significant in providing customers with a convenient and interactive service. The objective of this study is to explore factors such as reduced cost of transaction processing, improved payment efficiency, convenience, ease usage, enhanced banker customer relationship, less transaction time, awareness and access to internet facility that shape the customer decision in adoption of e-banking service and to check the customer's level of satisfaction with respect to electronic banking services provided by Indian banks. The customers using banking services with the different e-channels are more satisfied but the lack of awareness and security is a major issue in the spread of e-banking services. The paper also aims to examine the current status of banking e-services, identity its strengths and weaknesses, and use the findings in formulating future recommendations to make a contribution to knowledge in the chosen area. The paper concludes with suggestion to make e-banking services more effective in the future.

Keywords: Attitude, Business, Consumers, Internet, Web advertising.

I. Introduction to the Topic

Banks plays an essential role in our life. E-Banking has been a next development stage of banking industry selling its services & products via electronic & communication networks directly to customers. These include Automated Teller Machines (ATMs), personal computer, private & public network, internet, mobile devices & telephones. The services of e-Banking offered are outside the normal banking hours. It has opened banks for business 24x7. The daily banking activities can be performed without waiting for long hours in queue and that too efficiently. The adoption of new know-how by the banks can boost their income by providing customer-made products & novelty in services and in addition lessen the cost of current services & furthermore improves the efficiency. The cost mindful banks in the country have therefore keenly well thought-out the use of internet as a medium for giving services. All the banks render hi-tech services and started by private banks and MNC banks e.g. ATMs, internet banking, credit cards & online banking etc. Public sector banks followed the private banks in their hi-tech initiatives & services. The estimation of Mckinsey says that by shifting completely to electronic payment systems, there could be annual savings of about $ 6.3 billion in India.

II. E-Banking Technologies

There are various service which has been provide by the Indian banks in the modern era of the fast moving environment to the customer so that the people can access the operations of the bank without visiting any branch of the bank. The services are as follows:

- Net/Online Banking
- Automated Teller Machine
- Credit Cards, Debit Cards
- Telephone Banking
- RTGS, EFT, ECS

III. Objectives of the Study

The various objectives of the study are to assess the impact of adoption of electronic banking technologies:

- To study the impact of demographic characteristics of consumers on adoption of ATM & Internet banking.
- To identify the services which are frequently used by the consumers?

IV. Scope of the Study

Electronic banking has been trembling and determining the financial sector globally. Thus it has become very vital to know the issue electronic banking. The scopes of the study are:

- To know and understand electronic banking and its evolution.
- To analyze the practicability and finding out suitable business model.
- To assess the present position of electronic banking worldwide.
- To study the influence of characteristics of consumers on adoption of ATM & internet banking.

V. Literature Review

In actuality getting a new idea adopted is often difficult even when it has some relative advantages. So common problem associated with innovation is how to speed up the rate of its adoption. In this regard, Rogers proposed a model of the diffusion of innovations that included five characteristics postulated to influence consumer acceptance of new innovation i.e., Relative advantage, Compatibility, Complexity, Trialibility, Observability.

A. Methodology of the Study

The study is based on both primary and secondary data. The primary data is collected from 500 customers of prime locations of Mathura district. The sample data comprised of people consisting of different age group, gender, qualifications, residential locality, & occupation.

B. Sample Size

A total number of questionnaires distributed were 500 but only 437 were recovered out of which 407 were usable on the basis of their completeness & truthfulness.

VI. Null Hypothesis

H_0**:** There is no significant impact of demographic characteristics of consumers on the adoption of ATM & internet banking.

VII. Alternate Hypothesis

H_1: There is significant impact of demographic characteristics of consumers on the adoption of ATM & internet banking.

Hence,

$$H_0: \mu_1 = \mu_2$$
$$H_1: \mu_1 \# \mu_2$$

Data collected gives results that**;** H_1 is accepted and H_0 is rejected i.e. there shall be significant impact of demographic characteristics of consumers on the adoption of ATM & internet banking.

So, in the study, alternative hypothesis (H_1) is accepted.

VIII. Tools and Techniques Used

Primary Data Collection Through: Questionnaire, Interviews.

Secondary Data Collection Through: Internet, Magazines.

Sampling Method: Convenience Sampling.

Method of Analysis: Chi square test: Testing the independence of two attribute in a contingency table.

IX. Data Analysis and Interpretation

The following data, after collection, has been analyzed in accordance with the objective given for the purpose of the research work. The results are summarized in Tables I(a), I(b), II(a), & II(b). The findings are in accordance with hypotheses made in the present research.

Table I: Adoption of ATM

Characteristic		Non Adopter	Adopter	Total N	Chi Square
Gender	Male	17.1%	82.9%	245	$X^2 = 27.98$ P = 0.000
	Female	50.9%	49.1%	53	
Age	Less than 30 years	5.9%	94.1%	101	$X^2 = 50.10$ P = 0.000
	30-50 years	25.7%	74.3%	152	
	51-60 years	42.9%	57.1%	35	
	More than 60 years	90.9%	10.0%	10	
Locality	Urban	13.7%	86.3%	190	$X^2 = 26.43$ P = 0.000
	Rural	39.8%	60.2%	108	
Qualification	Undergraduate	36.5%	63.5%	115	$X^2 = 18.93$ P = 0.000
	Graduate	15.8%	84.2%	95	
	Postgraduate	13.6%	86.4%	88	
Monthly Family Income	Less than 10,000	31.6%	68.4%	98	$X^2 = 8.07$ P = 0.000
	10,000-20,000	20.4%	79.6%	113	
	20,001-40,000	21.3%	78.7%	61	
	More than 40,000	7.7%	92.3%	26	

TABLE II: SERVICES USED THROUGH ATM

Characteristic		Cash Withdrawal	Banking Services	All Services	Total N	Chi Square
Gender	Male	68.0%	21.2%	10.8%	203	$X^2 = 9.20$ P = 0.01
	Female	96.2%	0%	3.8%	26	
Age	Less than 30 years	54.7%	28.4%	16.8%	95	$X^2 = 22.43$ P = 0.001
	30-50 years	83.2%	12.4%	4.4%	113	
	51-60 years	80.0%	10.0%	10.0%	20	
	Above 60 years	100%	0%	0%	1	
Locality	Urban	63.4%	23.2%	13.4%	164	$X^2 = 17.37$ P = 0.000
	Rural	90.8%	7.7%	1.5%	65	
Qualification	Undergraduate	57.5%	28.8%	13.7%	73	
	Graduate	81.3%	11.3%	7.5%	80	
	Postgraduate	73.7%	17.1%	9.2%	76	
Monthly Family Income	Less than 10,000	58.2%	26.9%	14.9%	67	$X^2 = 10.47$ P = 0.106
	10,000-20,000	78.9%	15.6%	5.6%	90	
	20,001-40,000	75.0%	16.7%	8.3%	48	
	More than 40,000	70.8%	12.5%	16.7%	24	

TABLE III: ADOPTION OF INTERNET BANKING

Characteristic		Non Adopter	Adopter	Total N	Chi Square
Gender	Male	77.0%	23.0%	139	$X^2 = 50.10$ P = 0.074
	Female	90.9%	9.1%	33	
Age	Less than 30 years	65.5%	34.5%	58	$X^2 = 11.48$ P = 0.009
	30-50 years	85.9%	14.1%	92	
	51-60 years	87.5%	12.5%	16	
	More than 60 years	100%	0.00%	06	
Locality	Urban	76.5%	23.5%	132	$X^2 = 3.44$ P = 0.063
	Rural	90.0%	10.0%	40	
Qualification	Undergraduate	89.1%	10.9%	46	$X^2 = 9.12$ P = 0.01
	Graduate	85.7%	14.3%	56	
	Postgraduate	68.6%	31.4%	70	
Monthly Family Income	Less than 10,000	87.5%	12.5%	40	$X^2 = 12.24$ P = 0.007
	10,000-20,000	86.2%	13.8%	65	
	20,001-40,000	75.6%	24.4%	45	
	More than 40,000	54.5%	45.5%	22	

TABLE IV: SERVICES USED THROUGH INTERNET BANKING

Characteristic		Informational Services	Banking Transactional Services	All Services	Total N	Chi Square
Gender	Male	37.5%	25.0%	37.5%	32	$X^2 = 1.35$ P = 0.510
	Female	66.7%	0%	33.3%	20	
Age	Under 30 years	40.0%	30.0%	33.0%	20	$X^2 = 5.29$ P = 0.259
	30-50 years	30.8%	15.4%	53.8%	13	
	51-60 years	100%	0%	0%	2	
	Above 60 years	0%	0%	0%	0	

Locality	Urban	35.5%	22.6%	41.9%	31	$X^2 = 3.07$ P = 0.216
	Rural	75.0%	25.0%	0%	4	
Qualification	Undergraduate	80.0%	20.0%	0%	5	$X^2 = 8.39$ P = 0.078
	Graduate	62.5%	12.5%	25.0%	8	
	Postgraduate	22.7%	27.3%	50.0%	22	
Monthly Family Income	Less than 10,000	80.0%	0%	20.0%	5	$X^2 = 4.95$ P = 0.551
	10,000-20,000	33.3%	33.3%	33.3%	9	
	20,001-40,000	36.4%	18.2%	45.5%	11	
	More than 40,000	30.0%	30.0%	40.0%	10	

TABLE: I(a) GENDER AFFECTS THE ADOPTION OF ATM AND INTERNET BANKING

Gender	ATM Adopter	Internet Banking Adopter
Male	82.9%	23.0%
Female	49.1%	9.1%

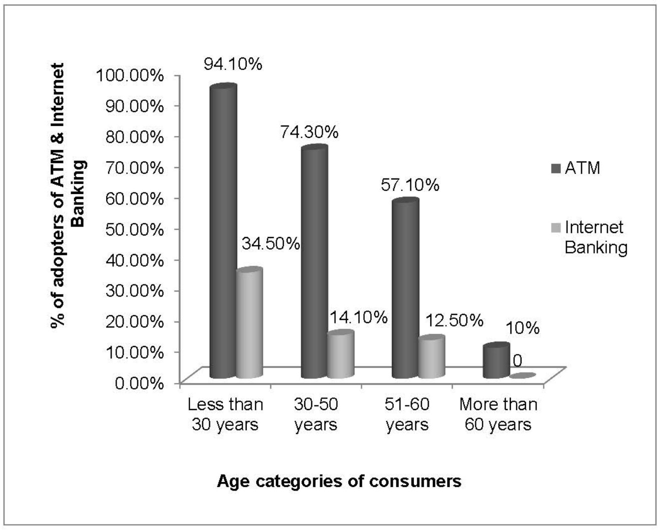


TABLE I(b): AGE INFLUENCE THE ATM AND INTERNET BANKING

Categories	ATM Adopter	Internet Banking Adopter
Less than 30 years	94.1 %	34.5%
30-50 years	74.3 %	14.1%
51- 60 years	57.1%	12.5%
Above 60 years	10.0%	0.00%

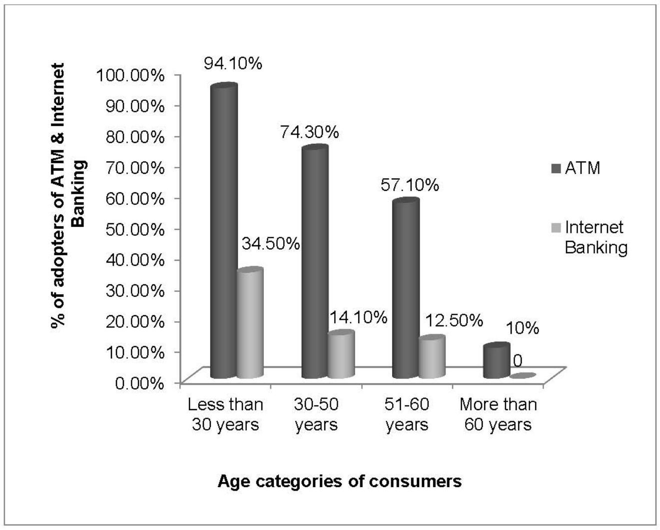


TABLE I(c): EFFECT OF LOCALITY ON ADOPTION OF ATM AND INTERNET BANKING

Locality	ATM Adopter	Internet Banking Adopter
Urban	86.3%	23.5%
Rural	60.2%	10.0%

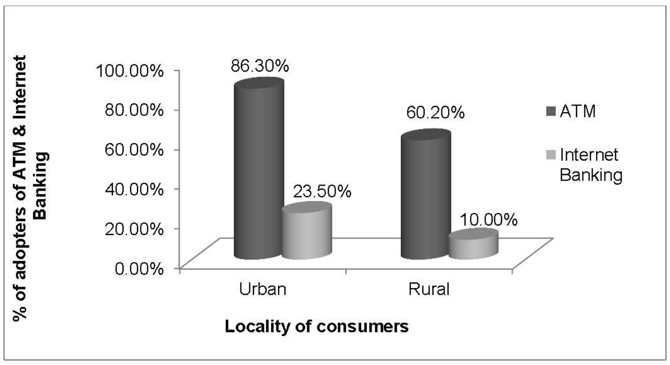


Table I(d): Education Qualification Affects the Use of ATM and Internet Banking

Education Level	ATM Adopter	Internet Banking Adopter
Under Graduation	63.5%	10.9%
Graduation	84.2%	14.3%
Post Graduation	86.4%	31.4%

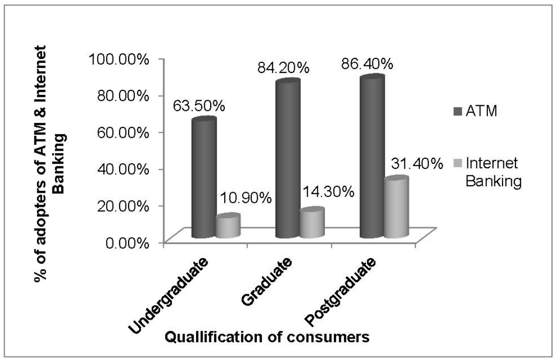
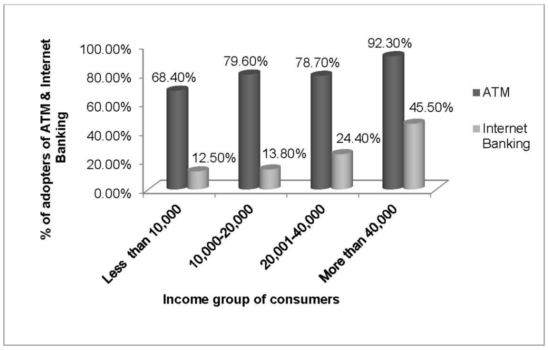


Table I(e): Monthly Family Income Influence the Adoption of ATM and Internet Banking

Income Group	ATM Adopter	Internet Banking Adopter
Less than 10,000	68.4%	12.5%
10,000-20,000	79.6%	13.8%
20,001- 40,000	78.7%	24.4%
Above 40,000	92.3%	45.5%



Demographic Factors and ATM and Internet Banking Services:-

Table II(a): Gender of the Consumers

	Services	Male	Female
ATM	Cash withdrawal	68.0%	96.2%
	Banking services	21.2%	0%
	All services	10.8%	3.8%
Internet Banking	Information services	37.5%	66.7%
	Banking transactional services	25.0%	0%
	All services	37.5%	33.3%

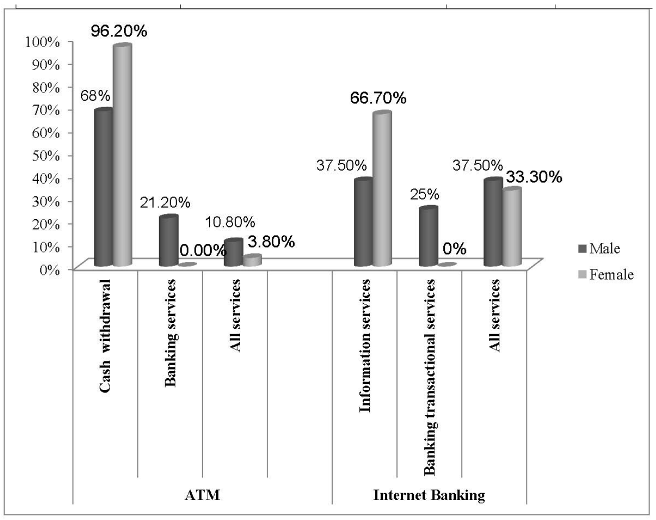


Table II(b): Age of the Consumers

	Services	Under 30 Years	30-50 Years	51-60 Years	Above 60 Years
ATM	Cash withdrawal	54.7%	83.2%	80.0%	100%
	Banking services	28.4%	12.4%	10.0%	0%
	All services	16.8%	4.4%	10.0%	0%
Internet Banking	Information services	40.0%	30.8%	100%	0%
	Banking transactional services	30.0%	15.4%	0%	0%
	All services	30.0%	53.8%	0%	0%

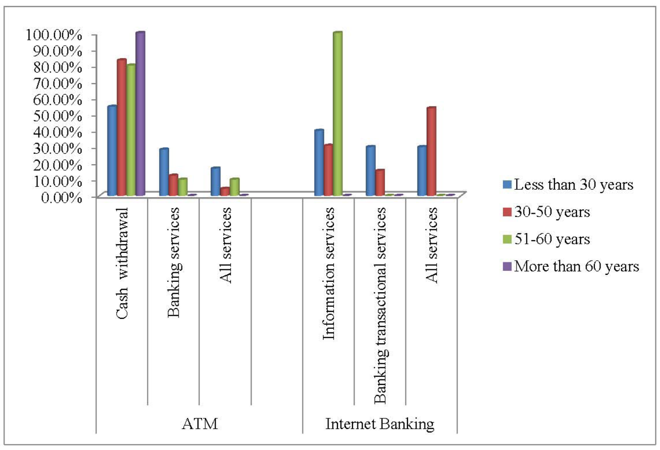


TABLE II(c): LOCALITY OF CONSUMERS

	Services	Urban	Rural
ATM	Cash withdrawal	63.4%	90.8%
	Banking services	23.2%	7.7%
	All services	13.4%	1.5%
Internet Banking	Information services	35.5%	75.0%
	Banking transactional services	22.6%	25.0%
	All services	41.9%	0%

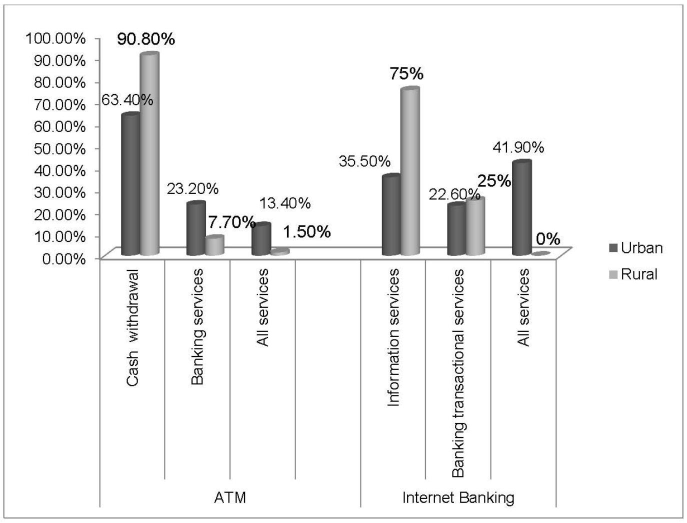


TABLE II(d): QUALIFICATION OF CONSUMERS

	Services	Under Graduation	Graduation	Post Graduation
ATM	Cash withdrawal	57.5%	81.3%	73.7%
	Banking services	28.8%	11.3%	17.1%
	All services	13.7%	7.5%	9.2%
Internet Banking	Information services	80.0%	62.5%	22.7%
	Banking transactional services	20.0%	12.5%	27.3%
	All services	0%	25.0%	50.0%

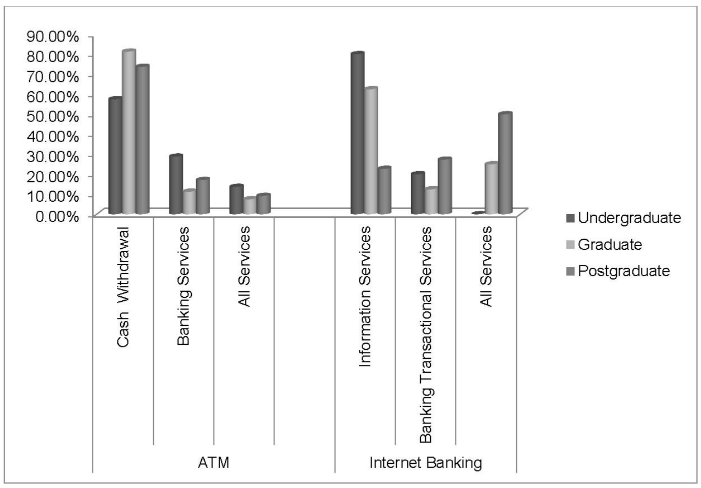
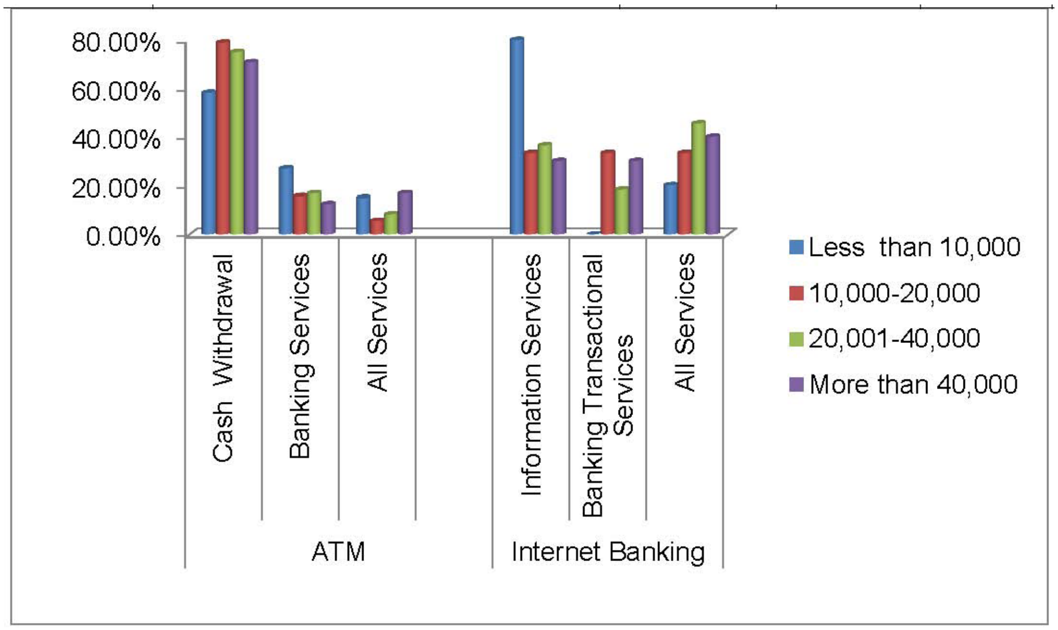


TABLE II(e): INCOME OF CONSUMERS

	Services	Less Than 10,000	10,000-20,000	20,001-40,000	More Than 40,000
ATM	Cash withdrawal	58.2%	78.9%	75.0%	70.8%
	Banking services	26.9%	15.6%	16.7%	12.5%
	All services	14.9%	5.6%	8.3%	16.7%
Internet Banking	Information services	80.0%	33.3%	36.4%	30.0%
	Banking transactional services	0%	33.3%	18.2%	30.0%
	All services	20.0%	33.3%	45.5%	40.0%



X. MAJOR FINDINGS

- Male consumers use electronic banking technologies more than the female consumers.
- Young consumers use electronic banking frequently than the old age consumers.
- Young consumers feel more confident & comfortable with the new technologies.
- Consumers in the urban area use ATM & internet banking more than the consumers in the rural area. The findings can be justifiable in the light of poor availability of ATM machines & electronic & communication devices in the rural area than the urban area.
- Income & education level are positively related to the adoption of new technology. Consumers of high income group use more than the consumers of low income group in the same way well educated consumers use technologies more comfortably than the consumers of low education status.

XI. CONCLUSION

It can be concluded here that ATMs have reasonably good presence in the urban areas as compared to the rural areas due to lesser number of consumers. The internet banking is negligible in the rural area due to the poor availability of infrastructure & non offering of internet banking by the banks in the rural area. The study also found the influence of age on the adoption of ATM & internet banking. Young consumers are more convergent & confident with the technology as compared to the old age consumers. Gender also affects the use of technology in a significant way because most of the outside work has been by the male members of the family in the Indian culture so use of technology for the banking operations is more popular in the male as compared to the female. Education level is positively related to the use of ATM & internet banking technologies. This study also highlights that family income does not affect the adoption of new technology. Electronic banking will realize its full potential when the following key elements fall in place:

- Internet access becomes more widespread in the country.
- The emergence of low cost interactive access terminals for home as well as interactive home information services, e.g. set lop boxes to convert TV sets into computer terminals.
- Security aspects of transactions over the electronic banking improve.
- Cyber Laws are implemented to give legal sanction and validity to electronic signatures.

The following limitations are observed during the research:

The study is based on primary data (questionnaire) so it might be possible that information provided by respondents may not be hundred percent true.

- Respondents often unwilling to response.
- Busy schedule of the persons.
- Respondent were not interested in giving their personal information.
- Generally unawareness about E-Banking technologies in rural sector.

References

[1] D. Anderson, "Pop-up ads are no longer as popular with marketers," *Brandweek*, vol. 46, no. 5, p. 13, 2005.

[2] S. Bodre, "Consumers and advertising," *Indian Journal of Marketing*, vol. 14, no. 3, p. 16, 1983.

[3] L. K. Brackett, and B. N. Carr, "Cyberspace advertising vs. other media: Consumer vs. mature student attitudes," *Journal of Advertising Research*, vol. 41, no. 5, 2001.

[4] M. C. Burke, and J. A. Edell, "The impact of feelings on ad-based affect and cognition," *Journal of Marketing*, vol. 26, no. 1, pp. 69-83, 1989.

[5] J. L. Chandon, M. S. Chtourou, and D. R. Fortin, "Effects of configuration and exposure levels on responses to web advertisements," *Journal of Advertising Research*, vol. 43, no. 2, pp. 217-229, 2003.

[6] C. Cho, "Factors influencing clicking of banner ads on the www," *Cyber of Advertising*, vol. 33, no. 2, pp. 75-84, 2003.

[7] P. J. Danaher, and G. W. Mullarkey, "Factors affecting online advertising recall: A study of students," *Journal of Advertising Research*, vol. 43, no. 3, pp. 252-267, 2003.

[8] J. Deery, "TV.com: Participatory viewing on the web," *The Journal of Popular Culture*, vol. 37, no. 2, pp. 162-164, 2003.

[9] R. H. Ducoffe, "Advertising value and advertising on the web," *Journal of Advertising Research*, vol. 36, no. 5, pp. 21-35, 1996.

[10] L. K. Eastman, K. J. Eastman, and D. A. Eastman, "Issues in marketing online insurance products: An exploratory look at agents' use, attitudes, and views of the impact of the internet," *Risk Management and Insurance Review*, vol. 5, no. 2, pp. 117-134, 2002.

[11] M. Fishbein, and I. Ajzen, *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*, Reading, MA: Addison-Wesley, 1975.

[12] E. H. Garrett, and R. S. Woodworth, "*Statistics in Psychology and Education (6^{th} ed.)*," Bombay, India: Vakils, Feffer and Simons Pvt. Limited, 1981.

[13] W. Gong, and L. M. Maddox, "Measuring web advertising effectiveness in China," *Journal of Advertising Research*, vol. 43, no. 1, pp. 34-48, 2003.

[14] M. Hardey, "Life beyond the screen: Embodiment and identity through the internet," *The Sociological Review*, vol. 50, no. 4, pp. 570-585, 2002.

[15] J. Joines, C. Scherer, and D. Scheufele, "Exploring motivations for consumer web use and their implications for e-commerce," *Journal of Consumer Marketing*, vol. 20, no. 2, pp. 90-108, 2003.

[16] P. Kotler, *Marketing Management (Millennium Ed.)*. NJ: PHI Publication, 2000.

[17] R. J. Lutz, "Affective and cognitive antecedents of attitude toward the ad: A conceptual framework," *Information Systems Journal*, vol. 13, pp. 209-231, 2003.

[18] A. K. Machleit, and R. D. Wilson, "Emotional feelings and attitude toward the advertisement: The roles of brand familiarity and repetition," *Journal of Advertising*, vol. 17, no. 3, pp. 27-35, 1988.

[19] S. B. MacKenzie, and J. L. Richard, "An empirical examination of the structural antecedents of attitude toward the ad in an advertising pretesting context," *Journal of Marketing*, vol. 52, no. 2, pp. 48-65, 1989.

[20] S. B. MacKenzie, J. L. Richard, and E. B. George, "The role of attitude toward the ad as a mediator of advertising effectiveness: A test of competing explanations," *Journal of Marketing Research*, vol. 23, no. 2, pp. 130-143, 1986.

[21] B. A. S. Martin, J. L. V. Durme, M. Raulas, and M. Merisavo, "Email advertising: Exploratory insights from Finland," *Journal of Advertising Research*, vol. 43, no. 3, pp. 293-300, 2003.

[22] T. A. Shimp, "Attitude toward the ad as a mediator of consumer brand choice," *Journal of Advertising*, vol. 10, no. 2, pp. 9-15, 1981.

[23] J. Stone, and J. Han, "Behavioral segmentation in online advertising," *Journal of Marketing Research*, vol. 4, no. 2, pp. 11-16, 1999.