CUSTOMERS' SATISFACTION IN ATM SERVICE: AN EMPIRICAL EVIDENCES FROM PUBLIC AND PRIVATE SECTOR BANKS IN INDIA

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Abstract
The aim of this paper was to provide a preliminary comparative investigation of the customer satisfaction in ATM service of public and private sector banks in India. For this investigation primary data was collected from 150 respondents of public and private sector banks through a structured questionnaire. Collected data was analyzed according to the objectives of the present research and result of the statistical analysis indicates that private sector banks are providing more satisfactory ATM service as compared to public sector banks. Empirical evidences indicates that customers perception about Efficiency, Security and Responsiveness, Cost Effectiveness, Problem Handling and Compensation and Contact service related to ATM service is low in both public and privates sector banks (ranging between 3.00 to 3.50). Therefore both types of banks should aware about these aspects of ATM service to enhance customers' satisfaction.
 Keywords: ATM,Service quality, Brand perception, Perceived value, Satisfaction, Public and Private Banks, India

1. INTRODUCTION

In banking industry, e-services are revolutionizing the way business is conducted. Electronic based business models are replacing conventional banking system and almost of banks are rethinking business process designs and customer relationship management strategies. It is also known as e-banking, online banking which provides various alternative e-channels to using banking services i.e. ATM, credit card, debit card, internet banking, mobile banking, electronic fund transfer, electronic clearing services etc. however, as per Indian e-banking scenario ATM is most acknowledged than other e-channels.

The history of ATM can be traced back to the 1960s, when the first ATM machine was invented by John Shepherd-Barron he was managing director of De La Rue Instruments. That machine used by Barclays Bank (Barclays Bank in Enfield Town in North London, United Kingdom) in 27 June 1967 (Wikipedia E-encyclopedia). However, the first bank to introduce the ATM concept in India was the Hong Kong and Shanghai Banking Corporation (HSBC) in the year 1987 followed by Bank of India in 1988. According to R.B.I. annual report (2008-09) almost commercial banks are providing ATM facilities to its customers and to date 27,277 ATMs installed by public sector banks and 15320 ATMs installed by private sector banks in India.

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1.1. Research Gap

The review of literature suggest that most of the studies have been done on issues related to Internet banking in countries like USA, UK, Malaysia, Singapore Finland, Australia (Sathye, 1999; Mukti, 2000; Wang et al, 2003; Gerrard and Cunningham, 2006 etc.) However, not sufficient work has been done in India with regard to ATM service and customer satisfaction issues. The present study intends to know the determinants of customers' satisfaction in ATM service concern regarding Indian context.

1.2. Objectives of the Study

- To examine the customers' satisfaction in ATM service provided by Public and private sector banks.

- To analysis gap between expectation and perception of ATM service quality, brand perception and perceived value in ATM service of public and private sector banks.

- To offer valuable suggestions to improve ATM service of both public and private sector banks.

2. REVIEW OF LITERATURE

The marketing literature clears that, the customer satisfaction is measured via service quality and service quality measured by various measurement tools and instruments developed by various researchers and marketing consultancy organisations e.g. SERVQUAL, SERVPERF, SITQUAL, WEBQUAL, etc. A number of studies specifically address the role of satisfaction in service contexts. Research literature suggests that service quality is a more specific judgement which can lead to a broad evaluation of customer satisfaction (Oliver, 1993; Parasuraman et al, 1985, 1988, 2005; Cronin and Taylor, 1994). The higher level of perceived service quality results in increased customer satisfaction. When perceived service quality is less than expected service quality customer will be dissatisfied (Jain and Gupta, 2004). In e-service era e-service quality is important aspect of measuring customer satisfaction (Parasuraman et al, 2005, Loiacono and Goodhue, 2000; Yoo and Donthu, 2001; Zeithaml et al, 2000; Nadiri et al., 2009 etc.). Table no 1 reveals that there are various dimensions of service quality has been used by different researchers to assess service quality and customers' satisfaction.

Apart from service quality brand perception and perceived value also plays crucial role in customer satisfaction in service industry. Marketing literature examined positive link between the satisfaction and the brand image and brand perception (Woodruff et al., 1983; Wafa et al., 2009). An obtained *'Value'* of service also one of the most important factors affecting on customers satisfaction. There are close relationship between service value and customers satisfaction. Value may be conceptualized as arising from both quality and price or from what one gets and what one gives (Zeithml, 2002). Value increases as quality increases

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and as price/rent/charges or cost of transaction decreases. Therefore, in this study author has used three major dimensions e.g. service quality, brand perception and perceived value to assess customer satisfaction.

TABLE 1 - INSTRUMENTS AND SCALE AVAILABLE TO ASSESS SERVICE QUALITY

Scale	By	Dimensions	Method
SERVQUAL	Parasuraman, Zeithaml and Barry (1985; 1998)	Reliability, Responsiveness, Assurance, Empathy and Tangibles	Likert Scale
SERVFERF	Cronin and Taylor (1994)	Reliability, Responsiveness, Assurance, Empathy and Tangibles	Likert Scale
WebQual	Loiacono, Watson and Goodhue (2000)	Information fit to task, interactivity, trust, responsiveness, design, intuitiveness, visual appeal, innovativeness, websites flow, integrated communication, business process and viable substitute, accessibility, speed, navigability and site content.	Likert Scale
SITEQUAL	Yoo and Donthu (2001)	ease of use, aesthetic design, processing speed, and security	Likert Scale
e-SQ	Zeithaml, Parasuraman, and Malhotra (2000)	efficiency, reliability, fulfilment, privacy, responsiveness, compensation, and contact	Likert Scale
E-S-QUAL and E-RecS-QUAL	Parasuraman, Zeithaml and Malhotra in (2005)	Efficiency Fulfilment, System availability, Privacy, Responsiveness, Compensation and Contact	Likert Scale
GIQUAL	Tsoukatos and Rand (2007)	Responsiveness, Assurance, Empathy, Tangibles and Reliability	Likert Scale
BANKSERV	Akiran (2002)	polite, greet, help, promptness, neatness, apology, concern, mistake, security, informed, acctypes, advice, learn, know, servwhen, teller and staff number	Likert Scale
BANKZOT	Nadiri et al., (2009)	Desired, adequate, predicted and perceived service quality	Likert Scale
SOFTWARE Quality	Yang and Zhang (2009)	Completeness, Security, Adequacy, Simplicity, Self-descriptiveness, Functionality, Reliability, Facility, Efficiency etc.	Likert Scale
WEB-QUAL (Alternative)	Barnes and Vidgen (2002)	Usability, Design, Information, Trust, Empathy	Likert Scale
eTailQ	Wolfinbarger and Gilly (2003)	Design, Personalization, Fulfillment, reliability, privacy/security, customer service	Likert Scale

3. EXPECTATION-PERFORMANCE SCALE VS PERFORMANCE ONLY SCALE

Parasuraman, Zeithaml and Berry (1985; 1988; 2005) posited that Expectation-Performance Scale (Gap Analysis) is necessary to examine level of customer satisfaction in service industry. They argued that if there is expected quality of service and actual perceived performance is equal or near about equal there is customers can be satisfy, while a negative discrepancy between perceptions and expectations a 'performance-gap' as they call it causes dissatisfaction, a positive discrepancy leads to consumer delight. However, Cronin and Taylor (1992; 1994) argued that customer satisfaction can be obtainable with low quality, whenever one's expectations in a given situation are low and performance is adequate to the task. Emergency situation fit this scenario well. Similarly, dissatisfaction with high quality can ensue when some element of the service delivery is not up to personal expectations. Therefore performance only scale is suitable to assess service quality and customer satisfaction. Various researchers has used performance only

scale and proved that it is an excellent for measuring service quality and customer satisfaction i.e. Pont and McQuilken, 2002; Brady et al. (2002); Andronikidisa and Bellou (2010); Jain and Gupta (2004); Cohen et al. (2006) Many empirical studies proved its validity, reliability, methodological soundness, superiority and psychometric soundness of the SERVPERF scale. More specifically Lianxi, (2004) and Aaron and Robin (2010) mentioned that the performance-only measurement of service quality (SERVPERF) as determinants of consumer satisfaction and subsequent behavioral intentions associated with banking services. Therefore this study focused on performance only scale to measuring service quality and customer satisfaction in e-banking.

4. HYPOTHESIS OF THE STUDY

- **Hypothesis 1(null)**: Quality of ATM service provided by public and private sector banks is not differing.

- **Hypothesis 1(alt.)**: Quality of ATM service provided by public and private sector banks is differing.

- **Hypothesis 2 (null)**: Brand perception in ATM service provided by public and private sector banks is not differing.

- **Hypothesis 2 (alt.)**: Brand perception in ATM service provided by public and private sector banks is differing.

- **Hypothesis 3 (null)**: Perceived value in ATM service provided by public and private sector banks is not differing.

- **Hypothesis 3 (alt.)**: Perceived value in ATM service provided by public and private sector banks is differing.

- **Hypothesis 4** (null): Overall customer satisfaction in ATM service provided by public and private sector banks is not differing.

- **Hypothesis 4** (alt.): Overall customer satisfaction in ATM service provided by public and private sector banks is differing.

5. MATERIAL, METHODS AND MEASURES

The primary data were conducted by (N= 150) customer survey of public sector banks (SBI; Bank of Baroda, Corporation Bank, IDBI Bank Ltd.) and private sector banks (Axis Bank Ltd. and HDFC Bank Ltd) in Satara city (Maharashtra) of India. Stratified judgmental sampling was adopted and data were collected during the period July 2010 to Oct 2010 spanning four months period. A five point likert scale ranging from strongly

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agree to strongly disagree was adopted as the scale for the statements in the questionnaire and method of data collection was through personal mode. The survey questionnaire has been designed using 29 statements related to service quality dimensions *i.e.* System Availability (3), E-Fulfillment (3), Efficiency (3), Security and Responsiveness (5), Easiness and Convenience (6), Cost Effectiveness (2), Problem Handling and Compensation (5) and Contact (2). Each statement in the questionnaire has positively worded. The data has been analyzed by using SPSS 19.0 software and Reliability Tests and Mann Whitney U test were performed according to need of the fulfill objectives and testing hypothesis under study. Reliability of the construct was tested using Cronbach's alpha reliability test and total four tests has been conducted to obtain appropriate reliability (above .700).

6. DEMOGRAPHICS OF RESPONDENTS

Table no .2 shows demographics wise distribution of the respondents. It reveals that most of ATM users are male (80%), between age group of 25 to 50 years (32.67% + 34%), Employees and Businessmen's (37.33% + 30.67%), Annual Income less than INR 15 lakhs (44% + 46.67%) and highly educated e.g. graduates and post graduates (50.67% + 38.00%). These results approximately match with the survey conducted by Asif Khan (2010)

TABLE NO. 2 - DEMOGRAPHICS OF RESPONDENTS (%)

		Type of Banks		
		Pub. Banks	Pvt. Banks	Total
Gender	Female	23.00%	14.00%	20.00%
	Male	77.00%	86.00%	80.00
Total		**100.00%**	**100.00%**	**100.00%**
Age	Below 25	25.00%	16.00%	22.00%
	25-35	31.00%	36.00%	32.67%
	36-50	31.00%	40.00%	34.00%
	51-60	13.00%	8.00%	11.33%
Total		**100.00%**	**100.00%**	**100.00%**
Profession	Employee	38.00%	36.00%	37.33%
	Businessman	29.00%	34.00%	30.67%
	Student	22.00%	2.00%	15.33%
	Professional	9.00%	18.00%	12.00%
	Retired	2.00%	10.00%	4.67%
Total		**100.00%**	**100.00%**	**100.00%**
Annual Income (INR)	Dependents	8.00%	2.00%	6.00%
	Below 3 Lakh	46.00%	40.00%	44.00%
	3 to 15 Lakh	45.00%	50.00%	46.67%
	Above 15 Lakh	1.00%	8.00%	3.33%
Total		**100.00%**	**100.00%**	**100.00%**
Education	>HSC	4.00%	6.00%	4.67%
	HSC	6.00%	8.00%	6.67%
	Graduate Arts	49.00%	54.00%	50.67%
	Post-Graduate	41.00%	32.00%	38.00%
Total		**100.00%**	**100.00%**	**100.00%**

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6.1. Results of Cronbach's Alpha Reliability Test

In order to prove the internal reliability of the model used, the authors have performed Cronbach's Alpha Test of Reliability. Applying this test specifies whether the items pertaining to each dimension are internally consistent and whether they can be used to measure the same construct or dimension of service quality. According to Nunnaly (1978) Cronbach's alpha should be .700 or above. But, some of studies 0.600 also considered acceptable (Kenova and Jonasson, 2006). However, present author has considered only those items/dimensions which have Cronbach's alpha .700 or above .700. Table no 3 indicates that the Cronbach's alpha for individual variables of System Availability (0.780); E-fulfillment (0.701); Efficiency (0.749); reliability (0.720); responsiveness (0.738); ATM service quality (0.798); and customer satisfaction (0.791) were found to be within limits for further analysis

TABLE NO. 3 - RELIABILITY STATISTICS

	Construct	Items	Cronbach Alpha
1	System Availability	3	.780
2	E-fulfillment	2	.701
3	Efficiency	3	.749
4	Security & Responsiveness	5	.712
5	Easiness & Convenience	6	.714
6	Cost Effectiveness	2	.722
7	Problem Handling & Compensation	4	.780
8	Contact	2	.713

6.2. Gap Analysis

Their levels were assessed purely on the basis of their mean values comparing with a reference mean value of '5' which was considered to be the maximum and that any organization should like to achieve for excelling (Magesh, 2010). A service gap of close to 1.50 and more than 1.50 was considered to be highly critical area for the improvement of the performance dimensions. A service gap of between less than 1.50 and more than 1.00 was considered as critical and further needs for improvements and service gap below 1.00 is treated as less significant.
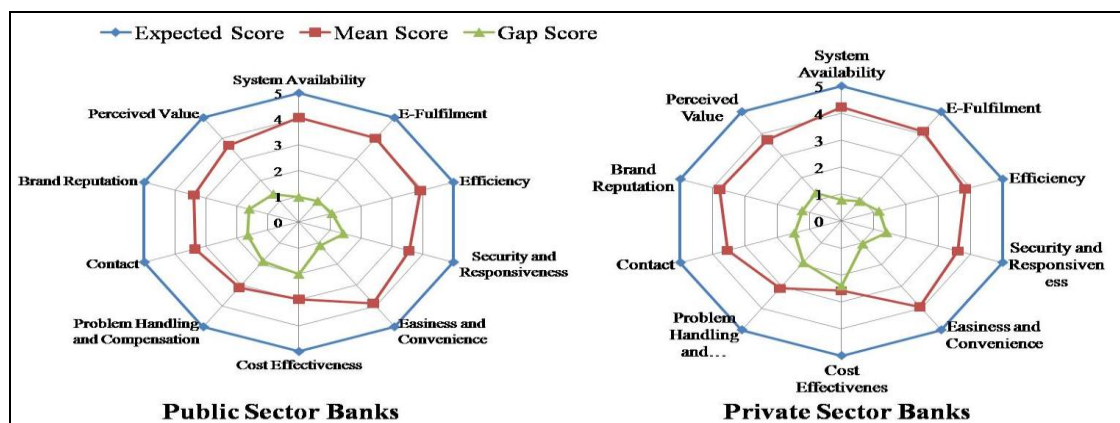

FIGURE 1 - DIMENSION WISE PERCEPTION AND SERVICE QUALITY GAP

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Figure 1 indicating visible gap in the perception of ATM service quality of public and private sector banks. It also indicates that major areas should be improve in service quality of ATM servie provided by public and private sector banks.

- Public Sector Banks: Security and Responsiveness, Problem Handling and Compensation, Cost Effectiveness, Contact, Brand Reputation are highly critical areas for the improvement of ATM service provided by public sector banks. E-Fulfilment, Efficiency, Easiness and Convenience and Perceived Value further needs for improvements (See table no 4).

- Private Sector Banks: Contact Problem Handling and Compensation and Cost Effectiveness are highly critical areas for the improvement in performance of ATM service provided by private sector banks. Easiness and Convenience, Efficiency, Security and Responsiveness, Brand Reputation and Perceived Value in ATM service further needs for improvements (See table no 4).

TABLE 4 - MEAN SCORE AND BOOTSTRAP STATISTICS OF PERCEPTION IN ATM SERVICE (BANKS WISE)

	Banks	Mean Score	Gap Score #	Bootstrap			
				Bias	Std. Error	95% Confidence Interval	
						Lower	Upper
System Availability	Pub.	4.0403	0.96	.0067	.0581	3.9356	4.1623
	Pvt.	4.3278	0.77	.0082	.0937	4.0503	4.4059
E-Fulfillment	Pub.	4.0037	1.00	.0025	.0422	3.9182	4.0817
	Pvt.	4.1044	0.90	.0071	.0744	3.9546	4.2476
Efficiency	Pub.	3.9227	1.08	.0008	.0390	3.8492	4.0065
	Pvt.	3.8410	1.16	.0016	.0592	3.7855	3.9541
Security and Responsiveness	Pub.	3.5550	1.45	.0043	.0385	3.4797	3.6911
	Pvt.	3.6054	1.39	.0045	.0492	3.5083	3.7117
Easiness and Convenience	Pub.	3.8800	1.12	.0010	.0845	3.7227	4.0289
	Pvt.	3.9400	1.06	-.0232	.1435	3.6151	4.1939
Cost Effectiveness	Pub.	2.9800	2.02	-.0046	.0914	2.7816	3.1625
	Pvt.	2.5900	2.41	-.0004	.1302	2.3451	2.8759
Problem Handling and Compensation	Pub.	3.1156	1.88	.0086	.0550	3.0135	3.2424
	Pvt.	3.0872	1.91	-.0074	.0950	2.8853	3.2537
Contact	Pub.	3.3500	1.65	.0008	.0970	3.1704	3.5409
	Pvt.	3.4400	1.46	-.0118	.0891	3.1790	3.5407
Overall Service Quality	Pub.	3.5300	1.47	-.0068	.0888	3.3453	3.7023
	Pvt.	3.8400	1.16	-.0103	.0890	3.6452	3.9865
Brand Reputation	Pub.	3.3900	1.61	.0015	.0917	3.1931	3.5608
	Pvt.	3.7800	1.22	-.0103	.1044	3.5486	3.9805
Perceived Value	Pub.	3.6619	1.34	.0038	.0367	3.5823	3.7953
	Pvt.	3.7174	1.28	-.0040	.0632	3.5789	3.8339
Overall Satisfaction	Pub.	3.5542	1.45	.0029	.0679	3.4132	3.6912
	Pvt.	4.6060	0.96	-.0068	.1241	3.3707	4.8564
# Gap score = Expected score - Obtained mean score (Gap = 5- Obtained Mean)							

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6.3. *Hypotheses Testing*

To test these hypotheses author have applied the Mann-Whitney & Wilcoxon W non-parametric U test. This test is similar to an independent group's t-test; however, this test is presents better results when the dependent variable is measured on an ordinal scale (Majumdar, 2010; John et al, 1981). This test is used to test for significant differences between two conditions of an independent variable in an experiment where the dependent variable involves ranked data for assessing two groups of observations come from the same population and It is one of the most powerful non-parametric tests (Nachar, 2008; Hanagal, 2009, pp 10.1-10.10; Gibbons and Chakraborti, 1991; George, 2009, pp 53-54; Abdullah, 2005 pp. 190; Ching-Wen, 2007, pp 57-58). If the Asymptotic significances (P value) of the U test is small than .050, researcher can reject the null hypothesis and if the P value is large than 0.50, the data do not give permission to reject null hypothesis because overall medians dose not differ (Sunder and Rechred, 2006).

TABLE NO. 5 - HYPOTHESIS TEST SUMMARY INDEPENDENT-SAMPLES MANN-WHITNEY U & WILCOXON W TEST

	Null Hypothesis	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)	Decision
H1a	The distribution of System Availability is the same across categories of Banks.	1961.000	7011.000	-2.152	.031	Reject the null hypothesis.
H1b	The distribution of E-Fulfilment is the same across categories of Banks.	2175.500	7225.500	-1.297	.195	Retain the null hypothesis.
H1c	The distribution of Efficiency is the same across categories of Banks.	2198.000	3473.000	-1.208	.227	Retain the null hypothesis.
H1d	The distribution of Security and Responsiveness is the same across categories of Banks.	2346.500	7396.500	-.612	.540	Retain the null hypothesis.
H1e	The distribution of Easiness and Convenience is the same across categories of Banks.	2242.500	7292.500	-1.067	.286	Retain the null hypothesis.
H1f	The distribution of Cost Effectiveness is the same across categories of Banks.	1854.500	3129.500	-2.622	.009	Reject the null hypothesis.
H1g	The distribution of Problem Handling and Compensation is the same across categories of Banks.	2429.500	3704.500	-.281	.779	Retain the null hypothesis.
H1h	The distribution of Contact is the same across categories of Banks.	2183.500	7233.500	-1.336	.182	Retain the null hypothesis.
H1	The distribution of Overall Service Quality is the same across categories of Banks.	1945.500	7095.500	-2.627	.044	Reject the null hypothesis.
H2	The distribution of Brand Reputation is the same across categories of Banks.	1997.500	7047.500	-2.191	.028	Reject the null hypothesis.
H3	The distribution of Perceived Value is the same across categories of Banks.	2220.000	7270.000	-1.116	.264	Retain the null hypothesis.
H4	The distribution of Overall Satisfaction is the same across categories of Banks.	1988.500	7054.500	-2.121	.033	Reject the null hypothesis.
	Asymptotic significances are displayed. The significance level is .05.					

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Table no. 5 revels that system availability and Cost Effectiveness of the ATM of public and private sector is not same it is differ at .031 and .009 sig. level respectively. Therefore H1a and H1f is rejected. Sig. values of H1b, H1c, H1d, H1e, H1g and H1h are higher than .050 (.195, .227, .540, .286, .779 and .182 respectively) it does not give permission to reject null hypotheses. therefore H1b, H1c, H1d, H1e, H1g and H1h are accepted it indicates that perception about E-Fulfilment, Efficiency, Security and Responsiveness, Easiness and Convenience, Problem Handling and Compensation and contact in ATM service is approximate same in public and private sector banks. Table no. 5 also indicates that Overall service quality of ATM service, Brand perception and Overall satisfaction in ATM service provided by public and private sector banks are differ at sig. level .044, .028 and .033 respectively. Therefore H1, H2 and H4 are rejected. However, this test indicates that perceived value of ATM service quality is approximately same in public sector banks and private sector banks. Sig. value of H3 is .264 it does not give permission to reject null hypotheses. Therefore H3 is accepted.

7. DISCUSSION AND MANAGERIAL IMPLICATIONS

This study presents valuable empirical evidences of ATM service perception in Indian banking system. It lead to state that private sector banks are providing more satisfactory ATM service as compared to public sector banks in the study area. Therefore public sector banks should concentrate their attention on ATM service quality to improve customers' satisfaction. However, Empirical evidences shows that customers perception about Efficiency, Security and Responsiveness, Cost Effectiveness, Problem Handling and Compensation and Contact service related to ATM service is low in both public and privates sector banks (ranging between 3.00 to 3.50). Hence both types of banks should aware about these aspects of ATM service to enhance customers' satisfaction and loyalty. Cost effectiveness is one of most important service quality dimensions which adversely affecting on customers' satisfaction. Therefore bank should reduce charges related ATM service and provide cost effective ATM service to their customers.

7.1. Limitations of the Study

This study provides better guidelines for bank mangers and policy makers to enhance customers' satisfaction via service quality of ATM. It also provides indications about service threats which identified in the survey. However, there are some limitation of the results and conclusions made by this study. First major limitation is related to sampling there is may be some sampling error sampling biasness and time biasness which reduce validity of the results. Although author has tried to reduce this errors by adopting appropriate and scientific sampling methods as well as advanced statistical tools of data analysis.

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