



# Mass Customization of Banking Services

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## **Abstract**

*[As WTO, Basel III and the Free Trade Agreements (FTAs) have changed shape of the Indian banking industry; its survival depends on creating valuable customer services at the reasonable and at affordable prices. Besides this, the global turmoil and competitive challenges posed by the invasion of foreign banks also poses challenges to Indian banking industry. Hence, it has to focus on cost of operation and new ways of revenue generation. In this context, every banker has to measure their performance efficiency and find ways to improve their profitability. In this paper an attempt has been made to study the performance efficiency of 21 public sector banks in India over a span of five years. Operating profit and related independent variables are analyzed using Multiple Regression Analysis. It shows that the most significant contributing factors to operating profit are NPA, Total Income, Total Expenses and Spread. The five years average performances indicated by ratios are regressed with profitability [profitability=(spread-Burden)/Business]. It shows that the Return on Assets and NPA to Total Assets are the most significant influencing factors. Next, the relative efficiency of the banks have been analyzed using Data Envelopment Analysis (DEA). Efficient bankers in each of the small size group and large size group banks have been identified by using DEA scores. This analysis would guide the bankers to check their input-out variables so as to reach the efficient frontier by showing improvement in their performance. The study also suggests the ways of improving the profitability of the bankers.]*

**Keywords:** *DEA- Data Envelopment Analysis, DMU-Decision Making Units, BCBS-Basel Committee on Banking-Supervision, .CG-Corporate-Governance.*

## **INTRODUCTION**

In this day and age, technological changes have contributed to economic growth globally, leading to significant improvement in the quality of life of people in different parts of our world. Countries that have adapted technology into their everyday activities have seen exceptional strides in their development. In the fast developing country like India, the use of technology for day-to-day business and personal transactions has seen a major boost. The banking industry is a paradigm of industries that has experienced a major uplift with the use of technological



innovation. The change in banking service is unparalleled when compared to the entire period of banking history in India. In recent days, the growing universalisation and internationalization of banking operations, driven by a combination of factors, such as the continuing deregulation, heightened competition and technological advancements have altered the face of the banks from one to mere intermediary to one of provider of quick, efficient and consumer friendly services.

### **MASS CUSTOMIZATION**

Mass customization is a unique service to customers and is indistinguishable from every other product of its kind. In the global milieu, mass customization practice has been more appropriate for manufacturing industry which has sought to increase customer demand by differentiating its products and increased its revenues at end. On the other hand, the use of mass customization in banks and other service companies can meet the market demand and enhance the competitiveness by customized products that are designed and provided for individual customers to meet their individual needs. Hence, the financial services industry has applied the principles of mass customization strategy so as to get impressive progress by extending customer base and maintaining retention strategy.

Moreover, banks today have to adopt strategies that embrace both a closer reaction to the customers' needs and efficiency by custom-tailored services to meet customers' diversified and changing needs at near mass production price. Therefore, this research paper is to explore the possibility of getting more deposits by an efficient and timely services and measure the impact of variables of E-banking products on customer satisfaction and five service quality dimensions namely reliability, responsiveness, assurance, empathy and tangibles have been established based on the need and requirement of the customers and these aspects have been measured by SERVQUAL model.

The study would exemplify the deposit growth of sample commercial banks by differentiating their different services to them over a period of ten years had been used to measure the performance of the banks. The study would also establish the e-banking products which satisfy the customers' needs and it also explores the possibilities of the e-banking products which offer variety of services by their unique features. Moreover, customer retention strategies are considered very essential in order to retain the customers for ever so as to achieve due market share in the global banking scenario. This research study has done by measuring some service quality variables also that are liable to satisfy the customers by rendering right quality services.



## **OBJECTIVES OF THE STUDY**

The main purposes of the study are:

To examine the new technological products offered by banks globally.

To measure the growth of deposits of sample commercial banks for the span of ten years.

To analyze the satisfaction level of customers on E-banking products nationally.

To find out the problems in banking activities to satisfy the customers' needs.

To provide some recommendations for the policy makers.

## **REVIEW OF LITERATURE**

Ganesan, G & Dhanaraj, V.T (2011) the paper entitled "Utilization of Banking products by the Customers in Coimbatore" discussed the familiarity of new banking products among the customers to earn more profits. They concluded the SBI is considered as the popular bank among the respondents in opening saving account followed by bank of India. The awareness level of ATM is highest among the respondents. However, the use of other banking services is low and mobile commerce is the least service used by the respondents. Therefore, it is necessary on the part of banking authority to take appropriate step to familiarize the new banking services among the customers.

Uppal (2009) examined the profitability which is an important criterion to evaluate the overall efficiency of a bank group. The present paper examines the comparative trends in profitability behaviors of five major bank groups in the post liberalization and globalization era. The paper further examines the factors, which are affecting the profitability of these bank groups. The paper concludes that average profitability is the highest in case of new private sector banks and foreign banks, the selected factors have differently affected the profitability of these banks groups. The paper offers suggestions on the basis of empirical results to increase the profitability and measures should be taken to increase the level of spread and curtail the burden.

## **METHODOLOGY USED**

The study is based on the sound methodology which covering both primary and secondary data. Extensive reviews have been made on the available banking products introduced by banks globally and the growth of deposits of sample banks has been analyzed with ten years data of the sample banks of three categories namely, private sector, public sector and foreign banks performed in India. Primary source of



information has been collected in order to understand the diversified requirements of customers and their preference over e.banking products.

Primary data has been collected by well framed comprehensive questionnaire and monitored on selected sample respondents who are really representatives of the universe so as to understand about the customer satisfaction in e.banking products of commercial banks in the study area.

#### **SERVQUAL model:**

The researcher has used the customer satisfaction as the dependent variables and the five dimensions of service quality namely reliability, responsiveness, assurance, empathy and tangibles as the independent variables. OLS Regression model is used to determine the significance level of the variables for the customer satisfaction. The basic model was as follows:

Customer satisfaction of E-banking products = f (reliability, responsiveness, assurance, empathy and tangibles).

$$\text{Basically CSEP} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e.$$

Where  $X_1$  = Reliability,  $X_2$  = Responsiveness,  $X_3$  = Assurance,  $X_4$  = Empathy,  $X_5$  = Tangibles.

There  $\alpha$  is the constant and  $\beta$ s are coefficients to estimate and  $e$  is the error term.

#### **ANOVA**

It has also been used the secondary data analysis to measure the deposit growth of sample commercial banks by the analysis of variance.

#### **SIGNIFICANCE OF THE STUDY**

The banks are subject to tremendous pressures to perform as otherwise their very survival would be at stake. Information Technology (IT) plays an important role in the banking sector as it would not only ensure smooth passage of interrelated transactions over the electronic medium but will also facilitate complex financial product innovation and product development. The application of IT and e.banking is becoming the order of the day with the banking system heading towards virtual banking. As an extreme case of e.banking World Wide Banking (WWB) on the pattern of World Wide Web (WWW) can be visualized. Hence, all banks are interlinked and individual bank identity, as far as customers are concerned, do not exist.

In the wake of globalization, customer expectations on banking services are more, with the advent of modern technologies, almost all banks have introduced humpty number of new products, like ATM Cards, Internet Banking, Phone Banking,



Mobile banking etc., in their network in order to meet the requirements of its customers and try to retain them continuously.

### **Problems encountered by banks in mass customization**

The use of mass customization in banking industry can meet the market demand, enhance the competitiveness of enterprises. However, due to the specificity, it is necessary to understand the characteristics of services industry. Silveria, Borenstein and Fogliatto (2001) have pointed out that the general services industry has labor-intensive, high customer involvement, quality sensitivity, triggered by the passing of time, difficult to adjust inventories and high dependence on the characteristics of information credibility. Distinction between services and other industries characterized by more obvious are:

**Non-physical:** It is the most obvious characteristics in service industries. Services, as well as the various factors that constitute a service is intangible and abstract, the interests of service can hardly be detected in a short period of time, in addition customer satisfaction is the perception.

**Indivisibility:** Compared to the clear sequence of the manufacturing in the procurement, production, marketing, paying, the production and consumption in the service industry is at the same time. Consumers, service producers and sellers have direct contact which has a high degree of indivisibility in time and space.

**The quality difference:** Service quality factors make a significant difference as a result of a variety of services, including the different service providers, consumers, different service locations, service hours; all will enable a service with a different quality of service.

**Cannot be stored:** Services cannot be set aside, nor can entities in storage. The formed service cannot be stored and will loss without consumption in time. This has great relationship with the invisible and incorporates of service industry.

**Industrialization of services:** Today the service and the manufacturing gradually integrated. Service industries tend to industrialization in many sectors. We cannot simply define the service as manufacturing or service industries.

### **HYPOTHESIS**

H<sub>1</sub>: There is no significant difference between the deposits among the three sectors of banks.



H<sub>2</sub>: There is a no relation between customer satisfaction in banking products and reliability, responsiveness, assurance, empathy and tangibles.

**Table -1**  
**Deposit Growth of sample Banks in India (Indian Rs.in Cr.)**

YEAR	All private sector banks	CAGR-Private	Total Public sector Banks	CAGR-Public	Foreign Banks in India	CAGR-Foreign
2002	168172.00	-	968623.00	-	59338.00	-
2003	207174.00	23.19%	1079167.00	11.41%	69110.00	16.47%
2004	268782.00	29.74%	1229462.00	13.93%	80205.00	16.05%
2005	312645.00	16.32%	1435853.00	16.79%	86505.00	7.85%
2006	428456.00	37.04%	1622481.00	13.00%	113745.00	31.49%
2007	551987.06	28.83%	1978394.11	21.94%	148085.78	30.19%
2008	675032.88	22.29%	2437698.40	23.22%	191443.27	29.28%
2009	736377.61	9.09%	3112747.15	27.69%	214076.43	11.82%
2010	822801.12	11.74%	3691798.99	18.60%	237853.43	11.11%
2011	1002758.83	21.87%	4372984.68	18.45%	240692.30	1.19%
	OVERALL CAGR	19.55%		16.27%		15.03%
	standard Deviation	285,323.51		1,179,335.56		71,804.54
	Mean	517,418.65		2,192,920.93		144,105.42
	Co-efficient of Variation	55.14%		53.78%		49.83%

It is evident from the table-1 that the growths of deposits are presumed to be higher when the banks follow mass customization strategy. The overall Compound Annual Growth Rate (CAGR) shows that among the three categories of banks mentioned in the table -1, private sector banks have achieved higher CAGR than the other two categories. Hence, it is concluded that the mass customization strategy has been followed at highest order in private sector banks in order to extend the customer base.

On the other hand, the foreign banks have lesser percentage (49.83%) co-efficient of variation (CV) which means that these banks have maintained the reasonable consistency in attracting customers. Moreover, it is necessary to find the significant difference among the three categories of banks in terms of deposits mobilization. Therefore, one way ANOVA is used for this purpose.

### Hypothesis

There is no significant difference between the mean deposits among the three sector banks.

**Table -2: ANOVA Table for DEPOSITS by BANKS**

Source	Sum of Squares	Df	Mean Square	F-Ratio	P-Value
Between groups	1.28375E13	2	6.41874E12	7.14	0.0032
Within groups	2.42735E13	27	8.99018E11		
Total (Corr.)	3.7111E13	29			

The ANOVA table decomposes the variance of DEPOSITS into two components: a between-group component and a within-group component. The F-ratio, which in this case equals 7.13973, is a ratio of the between-group estimate to the within-group estimate. Since the P-value of the F-test is less than 0.05, there is a statistically significant difference between the mean DEPOSITS from one level of BANKS to another at the 95.0% confidence level. Hence, the null hypothesis is rejected therefore; there is significant difference in the mean deposits among the banks.

**Regression analysis (SERVQUAL model)**

H<sub>1</sub>: There is no relation between customer satisfaction in e- banking and reliability, responsiveness, assurance, empathy and tangibles.

**Table -3: Model summary**

R	R square	Adjusted R square	Std.error of the estimate
0.628	0.394	0.382	0.59702

a. Predictors (constant), Reliability, Responsiveness, Assurance, Empathy and Tangibles.

The above table shows the overall predictability of the model. The adjusted R square value of 0.382 indicates that the model explains 38.2 per cent of the factors are responsible for service quality of e- banking.

**Table -4 : ANOVA**

	Sum of squares	df	Mean	Sig
Regression	91.299	6	15.21	.000
Residual	142.094	393	.361	
Total	233.393	399		

a. Predictors (constant), Reliability, Responsiveness, Assurance, Empathy and Tangibles.

**b. Dependent variable CSEB.**

From the above table-4 the ANOVA test shows that the p.value .000 is lesser than the significant level (0.05) at 5 per cent. So, the null hypothesis is rejected. Hence, it shows that there is a significant correlation between dependent variable and independent variables. Therefore customer satisfaction level depends on the quality dimension in commercial banks and it doesn't mean that all dimension of service quality have significant relation with customer satisfaction.

**Table -5Regression Coefficients analysis of the model**

	Unstandardised coefficients		Standardized coefficients	t	Sig
	B	Std.error	beta		
(Constant )	-.186	.264		-.704	.484
Reliability	.260	.062	.188	4.354	.004
Responsiveness	.404	.072	.282	5.732	.000
Assurance	.268	.058	.249	4.821	.000
Empathy	-.327	.0196	-.266	-1.652	.108
Tangibles	.062	.192	.56	.334	.744

Source: SPSS

### Dependent variable CSEB

Regression model:

$$\text{CSEB} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e.$$

$$\text{CSEB} = -0.186 + .260X_1 + .404X_2 + .268X_3$$

$$\text{SE} = (.264) \quad (.062) \quad (.072) \quad (.058)$$

Where

$$\text{CSEB} = X_1 = \text{Reliability}, X_2 = \text{Responsiveness}, X_3 = \text{Assurance}.$$

The above regression coefficient analysis table shows the relationship between dependent variable and independent variable. The p.value .004, .000, and .000 is lesser than the 5 per cent significant level. So, the hypothesis is rejected in these three cases. Hence, there is a relation between the dependent variable customer satisfaction and independent variables like reliability, responsiveness and assurance. In other two cases empathy and tangibles are accepted and there is no relation with the customer satisfaction.

The three independent variables X1 (18.8%), X2(28.2%), and X3(24.9%) leads to change in the customer satisfaction in e-banking.

### CONCLUSION

From the above analysis we can see the main problem is the delay strategy failure because of service products cannot be storage. Non-physical products are not occupied any inventory and no shelf-life requirements. Therefore, the nonphysical products service industry can solve the problems encountered by the failure implement of delay strategy.



The smooth implementation of the modularization strategy needs analysis and conclusions for the personalized needs. Then provide personalized options and the opportunities to achieve the personalized with the adoption of e-commerce platform. After that service enterprises search for the methods and realize ways to mass customization. How to realize the transition from the personal to the customization, as well as to the realization of mass production was studied by domestic and foreign scholars.

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