

# **Cronbach's Alpha Reliability Co-efficient for standard of customer services in Maharashtra State Co-operative Bank**

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## **ABSTRACT**

*In India Public, Private, Foreign, Co-operative, urban and rural banks are providing modern and innovative value added services to attract more customers and increase the source of income. An attempt has been made under this present study to take over view of Maharashtra State Co-operative Bank's standard and value added services to customers through primary and secondary data collected through questionnaire from selected 50 customers of 5 different region branches of Maharashtra State Co-operative Bank. The focus of this present research study is application of Cronbach' Alpha as statistical tools for multi-variant items related to standard services of Maharashtra State Co-operative Bank and measure the internal consistency and reliability of services.*

**Keywords:** Multi-item Scale, Reliability statistics, Internal consistency, multi-item statements and standard Services.

## **INTRODUCTION**

The Indian banking sector comprises public sector banks, private sector banks as well as co-operative sector banks. Retail banking sector mainly depend upon banking, financial and value added services of banks to customers The banking sector in India has made significant progress in the last five years in the growth parameters like profitability, annual credit growth and decline in non-performing assets. The annual rate of credit growth was 23% and profitability was maintained at around 15%. The banking sector in India is expected to have another good year during 2011, with growth being propelled by factors such as good economic growth, favorable demographic and low penetration.

The banking sector in India is well capitalized, with capital ratios being above the global average. The average tier-1 Capital Adequacy Ratio of the Indian banking industry is above 10% compared to the Basel III norm of 8.5% including the contingency buffer. The total assets size of the banking industry rose by more than five times between March 2000 and March 2010.

## **RESEARCH METHODOLOGY**

The Research methodology conducted under the present study is the combination of primary and secondary data collected through questionnaire from selected 50 respondents of 5 different branches of Maharashtra State Co-operative Bank. The present research study is empirical in nature leading to different multi-variant concluding observations relating to various banking and value added services of Maharashtra State Co-operative Bank . The purpose of this Research study is to calculate Cronbach's Alpha Reliability co-efficient for standard of customer service in Maharashtra State Co-operative Bank. Likert's Multi-item Scale is more reliable and appropriate to show the result of standard of customer services in MSC Bank and measure the constructs. An individual attempt to quantify constructs is not directly measurable but many times they use multiple item scales and summated ratings to quantify the constructs of interest. The Likert's Scale invention can attribute the assessment of attitudes of customers.

## **LIMITATIONS OF THE STUDY**

The following are the specific limitations:

1. The sample size is limited to only 50 respondents only.
2. The sample group was restricted to only 5 selected branches.
3. Only customer's view point has been studied but employees', Bank officers, well wishers and shareholder's view are not used in this study.

## **Likert Multi-scale Techniques**

A set of items, composed of approximately an equal number of favorable statements concerning the attitude object, is given to a group of subjects. Customers are asked to respond to each statement in terms of their own degree of agreement or disagreement. Typically they are instructed to select one of five responses- strongly agree, slightly agree, neither agree nor disagree, slightly disagree or strongly disagree. The specific responses to the items are combined so that individuals with most favorable attitude will have the highest scores while individuals with the unfavorable attitudes will have the lowest scores.

## **Specter (1992) identified four points that make a scale summated rating scale**

1. A scale must contain multiple items, which will be combined for summation.
2. The measurement should be something that varies quantitatively rather than qualitatively.
3. Each item has no right answer, which makes the summated rating scale different from a multiple choice test.
4. Each item in a scale is a statement and respondents are asked to give rating about each statement

**Table 1.** Multi-items Statement to measure the standard of customer services in MSC Bank.

Observations	Nat- ure	Strgly Agree	Sltgly Agree	Nei. Agr. nor dis.	Sltgly Disagr	Strgly Disagr	Total
Management Style in Bank is Autocratic	F	06	28	04	06	06	50
	P	12	56	08	12	12	100
Bank Urgently needs restructuring to improve efficiency.	F	15	25	03	04	04	50
	P	30	50	06	08	08	100
Profit of the Bank can be improved.	F	22	16	06	06	--	50
	P	44	32	12	12	--	100
Different types of Branches should be opened in Rural area	F	20	18	12	--	--	50
	P	40	36	24	--	--	100
Unions in bank affects the work & Lead to poor Customer Services	F	--	07	02	02	39	50
	P	--	14	04	04	78	100
Corruption in bank is very high.	F	--	--	01	--	49	50
	P	--	--	02	--	98	100
Bank Employees low Motivation and negative attitude.	F	--	02	01	02	45	50
	P		04	01	04	90	100
MSC Banks serves Development objectives.	F	35	15	--	--	--	50
	P	70	30	--	--	--	100
MSC Bank serves the Rural & the poor individuals	F	22	28	--	--	--	50
	P	44	56	--	--	--	100
MSC Bank focuses on Micro financing.	F	19	31	--	--	--	50
	P	38	62	--	--	--	100

**Source:** Compiled from the field survey

**Note:** F – Frequency, P – Percentage

## OBSERVATIONS & FINDINGS

It is observed from the above table that:

1. The management style in Maharashtra State Co-operative Bank is autocratic where 68% respondents have agreed that management style is autocratic and 24% respondent have disagreed the object.
2. 80% respondents have agreed that Maharashtra State Co-operative Bank urgently needs to restructure the management and internal working style to improve the efficiency of bank.
3. 75% of the respondents have accepted the concept that Bank need to earn profit to improve the efficiency and functions of Bank and open branches at different places at different level.
4. Around 82% respondents have not accepted that banks work is not affected by Bank's Union, and 98% respondents showed the confidence on the bank that bank do not have any corruption in any banking transactions.
5. About 95% respondents have identified that Bank's staff is high motivated and has positive attitude to behave with customers and general people.
6. In case of development objectives, rural and poor individual and micro financing, all respondents realized that bank serves the above objectives.

Overall, it was observed that MSC Bank's standard customer services are satisfied to the customers and customers strongly believed on the Banks functions and banking transactions. It was also indicated that in free competitive world, individual customer should be considered as an important factor and the rate of standard of customer services in MSC Bank is excellent and satisfactory level of customers.

### Calculating Cronbach's Alpha Co-efficient for Internal Consistency

Cronbach's Alpha is the average value of the reliability co-efficient where one could obtain for all possible combinations of items. Cronbach's Alpha is calculated for internal consistency reliability. Customers were asked to responds to the statement using a five point Likert Scale ranging from 1 Strongly Agree to 5 Strongly disagree. A Multi-item scale was also developed and customer's attitude is measured towards the standard customer services of MSC Bank.

**Table 2.** Showing the Different Services statistic Analysis

Sr. No.	Items	Mean	Standard Deviation	No. of Customers
1	Management Style in Bank is Autocratic	2.56	1.215	50
2	Bank Urgently needs restructuring to improve efficiency.	2.16	1.184	50
3	Profit of the Bank can be improved.	1.92	1.027	50

**Table 2.** Showing the Different Services statistic Analysis (Contd...)

Sr. No.	Items	Mean	Standard Deviation	No. of Customers
4	Different types of Branches should be opened in Rural area	1.84	0.792	50
5	Unions in bank affects the work & Lead to poor Customer Services	4.46	1.092	50
6	Corruption in bank is very high.	4.96	0.283	50
7	Bank Employees have low Motivation and negative attitude.	4.80	0.670	50
8	MSC Banks serves Development objectives.	1.30	0.463	50
9	MSC Bank serves the Rural & the poor individuals	1.56	0.561	50
10	MSC Bank focuses Micro financing.	1.62	0.490	50

**Source :** Compiled from field study

**Table 3.** Representing the Summery Item Statistics

Observations	Mean	Minimum	Maximum	Range	Maximum/Minimum	Variance	No of items
Item Means	2.718	1.300	4.960	3.660	3.815	2.077	10
Item Variances	0.699	0.080	1.476	1.396	18.449	0.285	10

**Source:** Compiled from the field survey

**Table 4.** Item Total Statistics

Items	Scale Mean if item Deleted	Scale Variance if item Deleted	Corrected item-Total correlation	Squared Multiple Correlation	Squared Multiple correlation if item Deleted	Cronbach's Alpha if item Deleted.
Management Style in Bank is Autocratic	24.62	26.812	0.881	0.776	0.974	0.894
Bank Urgently needs restructuring to improve efficiency.	25.02	27.367	0.856	0.732	0.904	0.895

**Table 4.** Item Total Statistics (Contd...)

Items	Scale Mean if item Deleted	Scale Variance if item Deleted	Corrected item-Total correlation	Squared Multiple Correlation	Squared Multiple correlation if item Deleted	Cronbach's Alpha if item Deleted.
Profit of the Bank can be improved.	25.26	28.482	0.898	0.806	0.983	0.891
Different types of Branches should be opened in Rural area	25.34	30.719	0.915	0.837	0.951	0.892
Unions in bank affects the work & Lead to poor Customer Services.	22.72	30.777	0.611	0.373	0.754	0.913
Corruption in bank is very high.	22.22	38.379	0.261	0.068	0.388	0.923
Bank Employees have low Motivation & negative attitude.	22.38	35.281	0.461	0.212	0.714	0.916
MSC Banks serves Development objectives.	25.88	34.965	0.766	0.586	0.885	0.907
MSC Bank serves the Rural & the poor individuals	25.62	34.526	0.780	0.608	0.939	0.906
MSC Bank focuses Micro financing.	25.56	34.700	0.768	0.589	0.895	0.906

**Source:** Compiled from the field survey

Table No.4 showing the item-analysis output from spss for the multi-item scale of customer’s attitude towards MSC Banks customer’s services. A descriptive type of the sections and related items are as shown below:

1. **Statistics for Scale:** These are the summery statistics for the items comprising the scale.
2. **Item Means:** There are summery statistics for the ten individual item means.
3. **Item Variances:** There are summery statistics for the 10 individual item means.
4. **Item –Total Statistics:** In this section individual attention is necessary-
  - a. **Scale mean if mean Deleted:** Excluding the individual item listed, all other items are summed for all individual and mean of the summated items.
  - b. **Scale Variance if item deleted:** Excluding the individual item listed, all other scale items observed for all individual and the variances of the summated items.
  - c. **Corrected Item-total Correlation:** This is the correlation of the item designated with the summated score for all other items.
  - d. **Squared Multiple Correlation :** It predicted multiple correlation coefficient squared obtained by regressing the identified individual item on all the remaining items.
  - e. **Squared Multiple Correlation if item deleted:** It predicted the multiple correlation coefficient squared if item deleted obtained by regressing the identified individual item on all the remaining items.
  - f. **Alpha if item deleted:** This column represents the Scales Cronbach’s alpha reliability co-efficient for internal consistency if the individual item is removed from the scale. This value is then compared to the Alpha co-efficient value. Thus the Cronbach’s alpha co-efficient of internal consistency which is most frequently used Cronbach’s Alpha co-efficient.
  - g. **Standardized Item Alpha:** The Cronbach’s alpha co-efficient of internal consistency when all scale items have been standardized. This co-efficient is used only when the individual scale items are not scaled the same.

**Table 5. Scale Statistics**

Mean	Variance	Standard Deviation	No. of Items
27.18	39.375	6.275	10

**Table 6. Reliability Statistics**

Cronbach’s Alpha	Cronbach’s Alpha based on standardized Items	No. of Items
0.914	0.924	10

Cronbach's Alpha is a tool for assessing reliability scale which is used for MSC Bank's customer services. Cronbach's Alpha reliability co-efficient normally ranges between 0 and 1 however; there are actually no lower limit to the co-efficient. The closer Cronbach's Alpha co-efficient is to 1.00 the greater the internal consistency of the items in the scale. Cronbach's Alpha is calculated by following formula:

$$\text{Cronbach's Alpha} = rk / [1 + (k - 1) r]$$

Where  $k$  = number of items considered

$r$  = the mean of the inter-item correlations.

**George & Mallory (2003) provides the following techniques:**

- a.  $> 0.90$  = Excellent
- b.  $0.80 - 0.89$  = Good
- c.  $0.70 - 0.79$  = Acceptable
- d.  $0.60 - 0.69$  = Questionable
- e.  $0.50 - 0.59$  = Poor
- f.  $< 0.50$  = Unacceptable

## FINDINGS

It should be noted that while a high value for Cronbach's Alpha indicates a good internal consistency of the items in the scale. The Cronbach's Alpha of MSC Bank standard of customer services is 0.914 and Cronbach's Alpha based on standardized item is 0.924 which are excellent and most reliable to internal items consistency. MSC Bank's customer services are standard and reliable to customers. Overall it was found that MSC Bank provides standard and value added services to their customers through banking transactions and functions.

## CONCLUSION

Likert's Multi-item scale technique is more imperative to calculate and report Cronbach's alpha co-efficient for internal consistency reliability for any scales. The analysis of the data then must use these summated scales therefore Cronbach's alpha always used for multi-variant items.

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