Discriminant function analysis of Private sector & Public sector banks with reference to Customer Satisfaction on service quality and CRM.

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Abstract:

This article aims to discover the discriminant function analysis in private sector and private sector banks with reference to service quality and customer relationship management in selected commercial banks in Srikakulam district, so it allows finding issues that need to be addressed in the following primary research. That is why this article examines the development of CRM definitions, from their very beginning in the 90's of the 20th century to the present. On this development, the authors describe the change in the approach to CRM. Furthermore, the article describes the customer satisfaction on service quality and CRM practices, i.e. analytical, operational and collaborative CRM, and provides an example of their practical operation. Authors also mention advantages and disadvantages that are coupled with CRM. The last part of this article is devoted to CRM practices and attitude of the customers towards factors contributing service quality. In conclusion the authors summarize the key points arising from the theory, which should be included in a questionnaire.

Key words:CRM, Service Quality, Custormer Satisfaction, Public sector and Private sector.

Introduction:

Customer Relationship Management (CRM) is a company-wide business strategy designed to reduce costs and increase profitability by solidifying customer loyalty. True CRM brings together information from all data sources within an organization (and where appropriate, from outside the organization) to give one, holistic view of each customer in real time. This allows customer facing employees in such areas as sales, customer support, and marketing to make quick yet informed decisions on everything from cross-selling and upselling opportunities to target marketing strategies to competitive positioning tactics.

There are a number of reasons why CRM has become so important in the last 10 years. The competition in the global market has become highly competitive, and it has become easier for customers to switch companies if they are not happy with the service they receive. One of the primary goals of CRM is to maintain clients. When it is used effectively, a company will be able to build a

relationship with their customers that can last a lifetime. Customer relationship management tools will generally come in the form of software. Each software program may vary in the way it approaches CRM. It is important to realize that CRM is more than just a technology.

CRM is the establishment, development, maintenance and optimization of long-term mutually valuable relationships between consumers and the organizations. Successful customer relationship management focuses on understanding the needs and desires of the customers and is achieved by placing these needs at the heart of the business by integrating them with the organization's strategy, people, technology and business processes. At the heart of a perfect CRM strategy is the creation of mutual value for all the parties involved in the business process. It is about creating a sustainable competitive advantage by being the best at understanding, communicating, and delivering, and developing existing customer relationships in addition to creating and keeping new customers.

CRM in Banking Sector:

CRM in banking industry entirely different from other sectors, because banking industry purely related to financial services, which needs to create the trust among the people. Establishing customer care support during on and off official hours, making timely information about interest payments, maturity of time deposit, issuing credit and debit cum ATM card, creating awareness regarding online and e-banking, adopting mobile request etc., are required to keep regular relationship with customers. The present day CRM includes developing customer base. The bank has to pay adequate attention to increase customer base by all means, it is possible if the performance is at satisfactory level, the existing clients can recommend others to have banking connection with the bank he is operating. Hence asking reference from the existing customers can develop their client base. If the base increased, the profitability is also increase. Hence the bank has to implement lot of innovative CRM to capture and retain the customers.

Scope of the Study:

The banking sector is entering a new world and moving developments are changing the face of banking. The globalization of banking operations, along with discriminating competition, continuing deregulation and technological advancements, has significantly altered the face and scope of banking. The process of economic liberalization and financial sector reforms has brought the issue of 'Customer Focus' to the forefront. Change is inevitable in this world and no banks shall stand as an exception to this phrase. Customers need, wants, desires keep changing day by day. Therefore it is absolutely essential for any bank to adopt the changes in the market. To adopt those changes, the banks must first track the changes in the customer wants and then respond to them. This is possible only when the organisation has a close contact with its customers. Therefore there exists a strong need for maintaining CRM in the banks in order to survive in the market amongst the competitors.

Since customer is the "life blood" of any business organisation and the "customer creation cost" is costlier than sensitivity etc., while differentiating them by the criteria into low and high value customers. With increasing competition, the importance of attracting and maintaining customers in banking has gained paramount importance. To survive, banks have to redesign their strategy in delivering quality services to attract and maintain customers. The only strategy that is perceived to make sense in this emerging marketing environment requires marketers to learn and practise CRM. This study aims to identify the areas of research in CRM with special reference to banking industry.

Statement of the Problem:

CRM aims at focusing all the organizational activities towards developing long term collaborative relationship with customers to develop them as lifetime customers. CRM systems link customer data into a single and logical customer repository. CRM in banking is a key element that allows a bank to develop its customer base and sales capacity. The goal of CRM is to manage all aspects of customer interactions in a manner that enables banks to maximize profitability from every customer. Increasing competition, deregulation, and the internet have all contributed to the increase in customer power. Customers, faced with an increasing array of banking products and services, are expecting more form banks in terms of customized offerings, attractive returns, ease of access, and transparency in dealings. Retaining customers is a major concern for banking institutions which underscores the importance CRM.

Banks can turn customer relationship into a key competitive advantage through strategic developments across a broad spectrum. The purpose of the present study started with the observation that all over the world there is a growing concern towards attracting and maintaining long term relationships with customers as an important corporate strategy for success and survival. The forces of deregulation, globalization and advancing technology have increased the competitive pressures in the banking industry. Thus it has become imperative for banks to focus on customer centric approaches and develop long term relations with the customers to get through turbulent times. Banks are concentrating only on acquiring new customers. They seldom understand the importance and profitability of creating loyalty and retaining customers. For the last decade most banks have been so absorbed in their own internal issues, particularly merger drives, cost-cutting and re-engineering, those customers and their relationship often received short shift. Banks have to come out with innovative measures to satisfy the needs of both the present and the potential customers at the same time adopt procedures to win back the lost customers. Building relationships is a challenge, especially when a firm has many ways (From e-mail to call centres and face to face interactions).

Objectives of the Study:

1. To study the relationship between the CRM practices and the attitude of the customers towards factors contributing to service quality.
2. To study the customer satisfaction towards service quality and CRM practices.
3. To study the discriminant analysis in private sector and public sector banks.
4. To offer suitable measures for improving the CRM practices in select Commercial Banks.

Methodology of the Study:

The primary objective of the study is to analyse the "Customer Relationship Management Practices of the selected commercial banks in Srikakulam District". Primary data have been collected through issue of questionnaire to the customers and by interview schedule to the employees. Personal observations and discussions with the customers and regular visits to the banks have also helped to understand the customers and employees perception about customer services, attitudinal environment prevailing in the banks and employees perception about CRM practices in the banks. The secondary data and information were collected from different sources like newspapers, magazines, journals, books, websites, and pamphlets and so on.

Sample Selection for the Study:

The study is to examine the "Customer satisfaction on service quality and CRM Practices of the selected commercial banks in Srikakulam District". A study of this nature required the selection of a suitable place. To fulfil this, collection of primary data from the customers and employees of commercial banks become pertinent. For this purpose, a list of private and public banks operating within the Srikakulam District was prepared. To prepare this list, the unpublished records were referred, which were obtained from Canara Bank, the Lead Bank of Srikakulam District. There are totally 47 banks spread over Srikakulam District. Of these, 26 are public sector banks and 21 are private sector banks. Hence, the study has four public sector banks, namely State Bank of India, Indian Overseas Bank, Indian Bank, Canara Bank and three private sector banks, namely, The Karur Vysya Bank Ltd, and The Lakshmi Vilas, ICICI Bank Ltd Bank Ltd. A sample of 25 branches in 7 banks (public and private) has been selected for the study by adopting the multistage sampling method is fairly representative. Based on fifteen per cent of the branches of each selected commercial bank samples were taken by the researcher for the study.

Sampling Techniques:

For the purpose of analysis, questionnaire is circulated among 30 customers of each branch and interview schedule has been collected form six employees of each branch. The total number of respondents comes to 750 customers and 150 employees from selected commercial banks in Srikakulam District. The above said samples have been selected on the basis of Multistage Sampling Method. The data have been tabulated and statistically interpreted whenever and wherever needed.

Limitations of the Study:

1. This study is not made for a specific bank. The study covers only a sample of 7 banks form the two banking sectors and does not include all the banks in Srikakulam District.
2. The survey was conducted only in Srikakulam District. Hence, the results arrived from the study may or may not be applied to other areas. Further the survey method which was adopted for collecting the data in this study has its own limitations.
3. The sample has been restricted to 750 customers and 150 employees from selected commercial banks in Srikakulam District. Time factor is also considered to be a constraint.

Customer's satisfaction in service quality and CRM practices:

This objective is intended to condense and simplify the items of service quality in banks and group the items on priority basis based on the strength of inter-correlation between the items and cluster them in the groups. In order to measure the above objective the following statistical tools are applied:

1. Reliability analysis
2. Discriminant function analysis

Reliability analysis:

The reliability of scales used in this study was calculated by Cronbach's coefficient alpha. Cronbach's alpha reliability coefficient normally ranges between 0 and 1. However there is actually no lower limit to the coefficient. The closer Cronbach's alpha coefficient is to 1.0 the greater the internal

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consistency of the items in the scale. Based upon the formula = rk / [1+(k-1) r] where k is the number of items considered and r is the mean of the inter-item correlations the size of alpha is determined by both the number of items in the scale and the mean inter-item correlations.

The coefficient alpha values exceeded the minimum standard of .70. it has provided good estimates of internal consistency reliability. As shown in table.1, coefficient alpha values ranged from 0.737 to 0.778 for all the constructs. All constructs obtained an acceptable level of a coefficient alpha above .70, indicating that the scales used in this study were reliable. It provides the following rules of thumb: "_>.9-Excelent, _>.8 –Good, _>.7 – Acceptable, _>.6 – Questionable, _>.5 – Poor and _<.5 – Unacceptable". While increasing the value of alpha is partially dependent upon the number of items in the scale, it should be noted that this has diminishing returns. It should also be noted that an alpha of .764 is probably a reasonable goal. It should also be noted that while a high value for Cronbach's alpha indicates good internal consistency of the items in the scale, it does not mean that the scale is unidimensional. Factor analysis is a method to determine the dimensionality of a scale. The fair high internal consistency indicates that the above measurement scale is reliable for further analysis.

Table.1: Results of reliability analysis of level of service quality – Private Sector Banks

Particulars	Values
Mean	68.18
Variance	84.873
Std. Deviation	9.213
Cronbach's alpha	0.764
No.of items	40

In the questionnaire containing forty items, 5- Point Likert type scale items has been used to measure level of attitude to contributing service quality of the bank. The items were anchored by 1-Excellent, 2-Good, 3-Fair, 4-Poor and 5-very poor. To make sure that forty scale items are reliable measurement scale, reliability / item analysis was carried out and results are presented in the table.2. From the results of the analysis, it can be seen that Cronbach alpha coefficient is 0.744, greater than the required level of 0.70. Hence, the above scale comprising forty items measuring the level of service quality of public sector banks is reliable and consistent with each other and can be used in further analysis.

Table.2: Results of reliability analysis of level of service quality – Public Sector Banks

Particulars	Values
Mean	67.69
Variance	74.625
Std. Deviation	8.639
Cronbach's alpha	.744
No.of items	40

Discriminant function analysis in Private sector banks:

Discriminant analysis is a statistical technique which allows studying the differences between two or more groups with respect to several variables simultaneously and provides a means of classifying any object / individual into the group with which it is most closely associated and to infer the relative

importance of each variable used to discriminate between different groups. A linear combination of predictor variables, weighted in such a way that it will best discriminate among groups with the least error is called a linear Discriminant function and is given by:

D = l1.X1 + L2.X2 + …………… + Lk .Xk, where Xi 's are predictor variables, Li's represents the Discriminant coefficients, and D is the value of the Discriminant function of a particular individuals / element such that if this value is greater than a certain critical value D*, the individual would be classified in group I, otherwise the individual would be classified in Group-II.

In the present study there are two groups namely those customers with lower overall mean satisfaction score (Group I n1 = 61), those customers with overall higher mean satisfaction score (Group II n1 = 89) .7. Predictor variables considered for the analysis includes the following customer interaction management practices, customer retention management practices, customer service strategies, customer contact programmes, Education, Occupation and Monthly income in the following tables 3 and 4.

Table.3: Overall mean satisfaction of customers of Private Sector Banks

Independent variables	Customers with	
	Overall lower (n1=61)	Overall higher (n2=89)
Customer interaction management practices	1.426	1.854
Customer retention management practices	1.180	1.258
Customer service strategies	1.393	2.067
Customer contact programmes	1.787	1.416
Education	2.311	2.348
Occupation	2.672	2.404
Monthly Income	2.672	2.483

Table.4: Tests of equality of group means – ANOVAS

Independent Variables	Wilk's Lambda	F (DF=1,148)	Sig
Customer interaction management practices	0.887	18.837	0.000**
Customer retention management practices	0.992	1.253	0.265
Customer service strategies	0.849	26.404	0.000**
Customer contact programmes	0.955	6.971	0.009**
Education	1.000	0.042	0.838
Occupation	0.984	2.477	0.118
Monthly Income	0.993	0.978	0.324

** - significant at 1% level   * - significant at 5% level

Canonical discriminant function fitted:

D = -6.812 +2.405 Q65+2.335 Q82+.963 Q96 – 1.161 Q108

Test functions

Eigen Value	Percentage of variation explained	Wilks Lambda	Chi-square	DF	p-value	Canonical Correlation
1.283	100	.438	120.547**	4	.000	.750

Classification of individual:

Using the discriminant function fitted and the observed predictor variables of the customers, the customers are classified and the correct per cent of classification is presented below.   From the above table.5 it is observed that out of 61 customers with lower overall score, 65 (78.7 per cent) were correctly classified; out of 89 with higher overall score, 75 customers (84.3 per cent) were correctly classified. Hence the percentage of correct classification is (123/150)*100 per cent or 82 per cent of original grouped cases correctly classified. The per cent of correct classification of respondents using the observed clearly indicates adequacy of the model in discriminating between the two groups.

Table.5: Percentage of correct classification by using discriminant function on the data

Customers with overall score 51-q3	Customers with lower overall score 51-q3	Customers with higher overall score 51-q3	Total
Lower	48	13	61
Higher	14	75	89
Total	**62**	**88**	**150**

Relative importance of predictor variable:

The relative importance of each predictor variable in discriminating between the two groups is obtained and the results are presented below in the table.6.

Table.6: The relative importance of ratios in discriminating between the groups

Explanatory Variables	Value Importance of the variable (Ij)	Relative Importance (Rj)	Rank
Customer interaction management practices	1.0293	44.9	1
Customer retention management practices	0.1821	7.95	4
Customer service strategies	0.6491	28.3	2
Customer contact programmes	0.4307	18.8	3
Total	2.2912	100.0	

Among the variables under study four variables namely, Customer interaction management practices, Customer retention management practices, Customer service strategies and Customer contact programmes are substantially important variables in discriminating between groups namely customers with lower overall score and customers with higher overall score.

Discriminant function analysis for Public Sector Banks:

In the present study there are two groups namely those years lower overall score (Group I, n1=296), and those have higher overall score (Group II. N2=304). Seven predictor variables considered for the analysis includes the following tables7 and 8.

Table.7: Mean value

Independent Variables	Customers lower attitude on factors contributing service quality (n1=296)	Customers higher attitude on factors contributing service quality (n2=304)
Customer interaction management practices	19.39	20.62
Customer retention management practices	22.04	26.78
Customer service strategies	19.37	22.73
Customer contact programmes	15.86	17.11
Education	2.574	2.523
Occupation	2.561	2.539
Monthly Income	2.385	2.378

Table.8: Tests of equality of group means – ANOVAS

Independent Variables	Wilk's Lambda	F (DF=1, 7)	Sig
Customer interaction Mgt. practices	0.943	36.46**	.000**
Customer retention Mgt. practices	0.516	560.8**	.000**
Customer service strategies	0.65	322.3**	.000**
Customer contact programmes	0.938	39.48**	.000**
Education	0.999	0.379	0.538
Occupation	1	0.052	0.819
Monthly Income	1	0.007	0.935

** - significant at 1% level   * - significant at 5% level

X1-, X2-, X3-, X4-, X5-, X6-, X7-, X8-, X9-, X10, ……and X16-.

Canonical discriminant function fitted:

D = -10.710-.116X5+.297 X7 + .208 X9 + .085X11

Test functions

Eigen Value	Percentage of variation explained	Wilks Lambda	Chi-square	DF	p-value	Canonical Correlation
1.073	100	.482	434.463*	4	.000	.719

Classification of individual:

Using the discriminant function fitted and the observed predictor variables of the companies, the customers are classified and the correct per cent of classification is presented below in the table.9. From the table it is observed that out of 296 customers with lower overall score, 285 (96.3 per cent) were correctly classified; out of 304 with higher overall score, 253 customers (83.2 per cent) were correctly classified. Hence the percentage of correct classification is (538/600)*100 per cent or 89.7 per cent of original grouped cases correctly classified. The per cent of correct classification of respondents using the observed clearly indicates adequacy of the model in discriminating between the two groups.

Table.9: Percentage of correct classification by using discriminant function on the data

Customers with attitude on factors contributing service quality	Lower	Higher	Total
Lower	285	11	296
Higher	51	253	304
Total	**336**	**264**	**600**

Relative importance of predictor variable:

The relative importance of each predictor variable in discriminating between the two groups is obtained and the results are presented below in the table.10.

Table.10: The relative importance of ratios in discriminating between the groups

Explanatory Variables	Value Importance of the variable (Ij)	Relative Importance (Rj)	Rank
Customer interaction management practices	0.1431	6.1	3
Customer retention management practices	1.4085	59.8	1
Customer service strategies	0.6986	29.6	2
Customer contact programmes	0.106	4.5	4
Total	**2.3562**	**100.0**	

Among the variables under study two variables namely, Customer retention management practices and Customer service strategies are substantially important variables in discriminating between groups namely customers with lower overall score and customers with higher overall score of customers with attitude on factors contributing service quality.

Suggestions of the Study:

The study also made enquiries to know how for customers are having different problems towards CRM practices and has suggested ways and means of overcoming them. CRM an emerging concept in the banking sector and is fast growing and demanding. Here are some suggestions to make it more attractive.

1. The research study suggests that bank officials no longer stay glued to their chairs waiting for customers, but participate in personal selling and aggressive advertising to woo and retain their customers. Vast opportunities as well as challenges for services are provided by banks in India. It is found that due to technological innovations and significant change in demographic profile of customers, there is huge market potential lying ahead.
2. This research study suggests among others that Banks should designs new products as well as improve on the existing service quality. They should make the packages more attractive and if possible unique. They should ensure that the 4Ps (products, place, promotion, Price) of Value – added service are customer – oriented. In a service industry like banking, where product differentiation is hard to maintain and the quality of service depends on the service on the service provider, it is imperative for the Bank to have staffs who realizes that they are a part of the business concern, not lackadaisical staff of any government departments. They have to render services to the satisfaction of the customers, not as per their own convenience or whims.
3. Marketing strategy must be framed within the overall framework of corporate objective. Strategic marketing must begin with the effort to identify an attractive set of opportunities for the banks. The Banker must embark upon aggressive marketing of its products, particularly at the time of launching a new product, which will inform the prospective customers regarding the product and at the same time relieve staff at the branch level from explaining the product to all customers, communicating the Customer through on line addressing the queries immediately.
4. ATMs, Debit cards and Credit Cards are the most common Value-added services utilized by the respondents. Efforts must be made to market the other services like e-banking, Demit accounts, on line tax filing, anywhere banking, etc., so that the customers as well as the banks are benefited.
5. **'**Customer meet' is another way to strengthen customer relationship in banks. These meetings should focus on creating a sense of mutual belonging, understanding and for sharing the common problems and emotions. Customer meeting should act as a bridge between banks and their customers. In the regular customer meets, the attitude and the expectations would enhance the level of satisfaction and create loyalty which would obviously respond favourably towards customer relationship.
6. In today's competitive environment, Banks will have to strive to attract and retain customers by introducing innovative products, enhancing the quality of customer service and marketing a variety of products through diverse channels targeted at specific customer groups and maintains the relationship. They have to meet the customer expectations on service and various values – added services provided.

7. When a customer complaints and if the complaint cannot be resolved quickly, feedback has to be given to the customer regarding the status of the complaint. After the problem has been settled, the bank can send a letter to the customer indicating that the problem has been solved to his satisfaction.

8. Taking advantage of computerization and technological up gradation, banks need to develop customer information system at branches so as to know the customer better and understand the customers' needs accurately. Database on various aspects of customer profile, the type of account, frequency of transition, the period of their association with the bank and the purpose of account holding should be created by the customer care department which should function in every bank and it must develop an excellent total customer care programmed to suit the specific requirements of its target customers, for it will definitely strengthen customer-relationship in banks.

9. Still more awareness can be created among the customers of the bank in carrying out the financial transactions through Internet/Online banking so as to reduce the customers waiting time and rush in office hours. Bankers can establish a net forum through which the customers can transact effectively and the bankers can make note of the number of transactions that take place every day through online.

10. Branch meetings with the employees can be organized every and the employer can discuss the problems they have faced as well as problems that customers are facing. The regional manager and the managing directors of the bank can make surprise visits to the branches from time to time and interact with the customers and employees so as to unearth customers' problems if any or to find the trend in customer's needs.

Conclusion:

The research study will be useful to the banking industry to understand the perception and expectation of customer in relations to the service rendered by them. Bankers can further identify the extent to which they are able to maintain customer relations and the measures they can take to improve their relationship. Bankers have to customize their offering according to the specific needs to the customers apart from being competent and prompt in delivering the service to the entire sector. Banks have to concentrate on internal service quality components (training, communication and tools) upon which the bankers have to focus upon to improve the internal service quality perceptions of the employees. The research study would also be informative to Bankers and all the stake holders of the banks.

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