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## **Impact of mutual fund investment in indian equity market.**

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**A STUDY ON BANKING SERVICE QUALITY IN NAGAPATTINAM DISTRICT,  
TAMILNADU.**

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**Abstract**

*Three forces dominate the prevailing marketing environment in the service sector: Increasing competition from private players, changing and improving technology and continuous shifts in the regulatory environment, which has led to the growing customer sophistication. Customer has become more and more aware of their requirements and demand higher standard of service. Their perception and expectations are continually evolving, making it difficult for the service providers to measure and manage service effectively. The key lies in improving the service selectively, paying attention to more critical service attributes/ dimensions as a part of customer service management. The present study identifies ten dimensions for measuring service quality in Nagapattinam District. There are seven taluks and 120 branches in Nagapattinam district. The study will help the bankers to enhance their quality of service and make the customers loyal to the organization. The study used simple random sampling method to collect 170 data from the banking customers in Nagapattinam and data were analyzed through Amos 16 and found that the Credit scheme and Interest rate is the mediating factor to service quality.*

*Key Words: Service Quality, Bankqual, Servqual, Mediating Factor*

## **1.1 Introduction**

Banking segments in India has been booming of late due to high liquidity, changing demographic profiles, changing interest rates, and increasing demand for consumer finances. A brief scrutiny of Indian banking industry would unearth the reasons behind the current scenario governed by the Banking regulation act of India 1949, it can be broadly classified into two major categories non-scheduled banks and scheduled banks. Scheduled banks comprise commercial banks and the co-operative banks. In terms of ownership, commercial banks are further grouped into nationalized banks, the State Bank of India and its group banks, regional rural banks and private sector banks.

The first phase of financial reforms resulted in the nationalization of 14 major banks in 1969 and resulted in a shift from class banking to mass banking. This in turn resulted in a significant growth in the geographical coverage of banks. Every bank had to earmark a minimum percentage of their loan portfolio for sectors identified as priority sectors. The manufacturing sector also grew during the 1970's in protected environment and the banking sector was a critical source. The next wave of reforms saw the nationalization of 6 more commercial banks in 1980. Since then the number of scheduled commercial banks increased four-fold and the number of bank branches increased eight-fold.

After the second phase of financial sector reforms and liberalization of the sector in early 90's the public sector banks found it extremely difficult to compete with the new private sector banks and the foreign banks. The new private sector banks first made their appearance after the guideline permitting them were issued in January 1993. The private players however cannot

match the PSB's great reach, great size and access to low cost deposits. Therefore one of the means for them to combat the PSB's has been through the merger and acquisition route. Over the last few years, the industry has witnessed several such instances. Private sector banks have pioneered internet banking, phone banking, anywhere banking, and mobile banking, debit card, automatic teller machines and combined various other service. Meanwhile the economic and corporate sectors slow down has led to an increasing number of banks focusing on the retail segment. They are up against each other in grabbing the better pie in the Housing Finance, Auto finance, consumer durable loans, educational loans other personal loans, credit cards, and various retail transactions. Many of them are also entering the new vistas of Insurance as well.

### **1.1.1 Recent trends in Banking Sector**

In the present competitive Indian banking context, characterized by rapid change and increasingly sophisticated customers, it has become very important that banks in India determine the service quality factors, which are pertinent to the customer's selection process. With the advent of international banking, the trend towards larger bank holding companies, and innovations in the marketplace, the customers have greater and greater difficulty in selecting one institution from another. Therefore the current problem for the banking industry in India is to determine the dimensionality of customer- perceived service quality. This is because if service quality dimensions can be identified, service managers should be able to improve the delivery of customer perceived quality during the service process and have greater control over the overall outcome. Moreover, investigating the influence of the dimensions of service quality on customers' behavioral intentions should provide a better understanding of the customer satisfaction and also help to specify, measure, control and improve customer perceived service quality. Hence, to gain and sustain competitive advantages in the fast changing retail banking

industry in India, it is crucial for banks to understand in depth what customers perceive to be the key dimensions of service quality and what impacts the identified dimensions have on customer's behavioral intentions.

Recognition of service quality as a competitive weapon is relatively a recent phenomenon in the Indian Banking sector. Prior to the liberalization era the banking sector in India was operating in a protected environment and was dominated by nationalized banks. Banks at that time did not feel the need to pay attention to service quality issues and they assigned very low priority to identification and satisfaction of customer needs. The need of the hour in the Indian banking sector is to build up competitiveness through enhanced service quality, thus making the banks more market oriented and provide more loans to the customers as they want to improve their standard of living.

## **1.2. Statement of the Problem**

Even though there have been numerous studies relevant to service quality, focused on service quality measurement and instrument development, Marketing researchers have made attempts to measure service quality since the 1980s. Further, these qualities influenced the image the customers had and this image had an effect on the process from expected quality to perceived quality.

Parasuraman et al. (1985) conducted qualitative research with twelve focus sections and several executives. They found that the subjects showed a similar pattern of perceived service quality with discrepancy between their expectation and actual service performance. Based on these findings, they proposed a conceptual model containing five gaps. Consequentially, Parasuraman et al. (1988) later introduced the SERVQUAL instrument including 22 items in five dimensions: reliability, tangibles, responsiveness, assurance, and empathy. Even though this instrument has been used in various

studies, the SERVQUAL has received many criticisms from other scholars (e.g., Cronin & Taylor, 1992; Peter, Churchill, & Brown, 1993). The major concern about the SERVQUAL was its use of measurement with different scores, which resulted in different numbers of factor dimensions, improper managerial approaches, and conceptual problems (Brady, 1997). Carman (1990) and Cronin and Taylor (1992) have argued that the performance-only measure increases variance when they removed the expectation measure. Based on this result, Cronin and Taylor (1994) suggested the use of SERVPERF by arguing that only the performance part of the SERVQUAL should be included. Another weakness was that SERVQUAL did not include an outcome dimension. Even though service process has been emphasized, no attention has been paid to what customers achieved after receiving a service.

Despite many efforts and debates, there has been no consensus on the measure of service quality across industries. In order to overcome this problem, Dabholkar et al. (1996) presented the hierarchical model of service quality consisting of three levels. The first level was consumers' overall perception of service quality. The second level included five dimensions: physical aspects, reliability, personal interaction, problem solving, and policy. The third level was a sub dimension of the second dimension. Brady (1997) conceptualized a hierarchical model of perceived service quality again based on Dabholkar et al.'s (1996) model. This study included interaction quality, outcome quality, and physical environment. Each dimension also had a sub-dimension like in Dabholkar et al.'s (1996) model. By a hierarchical approach, service quality research attempted to include various components in service quality by adjusting different situations with various types of service quality.

Parasuraman et al. (2005) developed a multiple-item scale (E-S-QUAL) based on theoretical foundations for evaluating the service quality delivered by Web sites in the process of placing an order. They collected 549 questionnaires through an online survey. The findings revealed that two

scales were possible for online customers: E-S-QUAL (the basic scale) and E- RecS-QUAL. The former included 22 items of four components: efficiency, fulfillment, system availability, and privacy. The latter was relevant only to customers who experienced non-routine encounters and included 11 items with three components: responsiveness, compensation, and contact.

The consumer satisfaction literature views these expectations as predictions about what is likely to happen during an impending transaction, whereas the service quality literature views them as desires or wants expressed by the consumer (Kandampully, 2002). To date, “there is no universal, parsimonious, or all-encompassing definition or model of service quality” (Reeves & Bednard, 1994, p. 436). Grönroos (1984) defines service quality as “the outcome of an evaluation process where the consumer compares his expectations with the service he perceived and he has received” (p. 37). Definitions of quality have included: a) satisfying or delighting the customer or exceeding expectations; b) product of service features that satisfy stated or implied needs; c) conformance to clearly specified requirements; and d) fitness for use, whereby the product meets the customers’ needs and is free of deficiencies (Chelladurai & Chang, 2000).

### **1.2.1. Service quality on Banking:**

Service quality has been viewed as a significant issue in the banking industry by Stafford (1994). Since financial services are generally undifferentiated products, it becomes imperative for banks to strive for improved service quality if they want to distinguish themselves from the competition. Positive relationship between high levels of service quality and improved financial performance has been established by Roth and Van der Velde (1991) and Bennet (1992). Similarly, Bowen and Hedges (1993) documented that improvement in quality of service is related to expansion of market share.

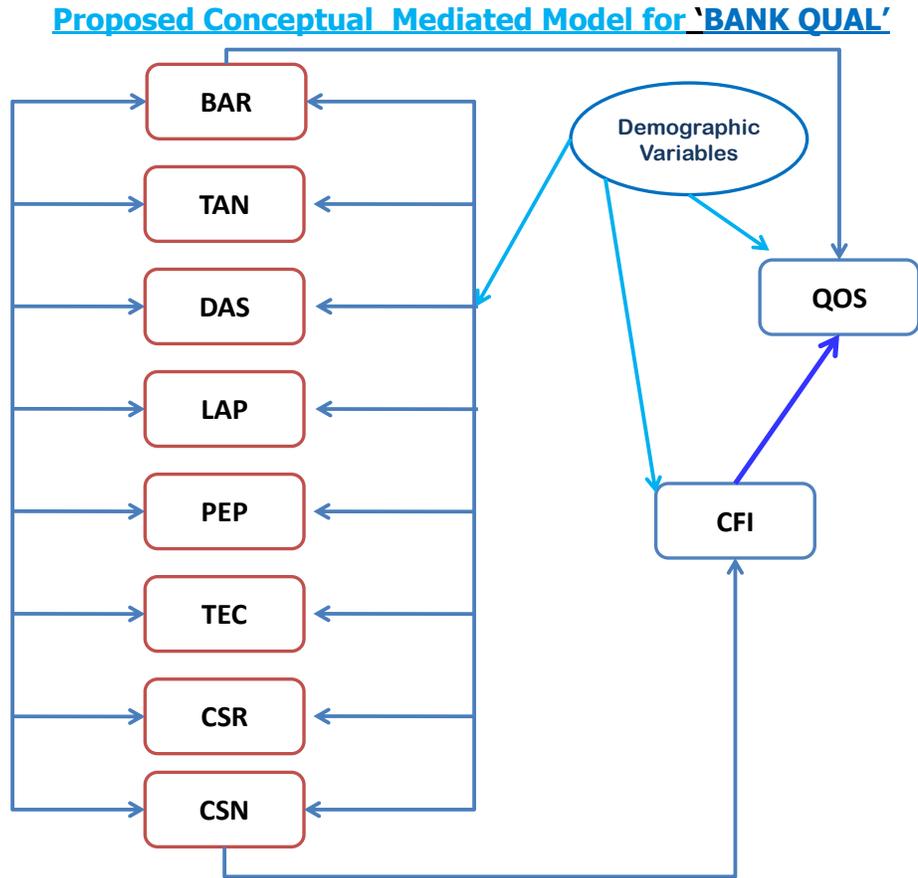
In the current marketing literature, much attention on the issue of service quality as related to customers' attitudes towards services has focused on the relationship between customer expectations of a service and their perceptions of the quality of provision. This relationship known as perceived service quality was first introduced by Gronroos (1982). In developing SERVQUAL, Parasuraman et. al (1988) recast the 10 determinants into five principal dimensions: tangibles, reliability, responsiveness, assurance and empathy. Following their works, other researchers have adopted this model for measuring service quality in various service industries. Amongst them is Blanchard (1994), Donnelly et. al (1995), Angur (1999), Lassar (2000), Brysland and Curry (2001), Wisniewski (2001) and Kang et. al (2002). Application of this model to measure the quality of service in the banking industry was conducted by Newman (2001).

### **1.3. Research Objectives**

1. To analyze overall banking service quality in Nagapattinam District.
2. To identify the mediating factor for satisfying the customer in banking sector in Nagapattinam.
3. To find out the relationship between the dimensions of Banking Service Quality and their influence on the mediating factor.
4. To suggest suitable Strategic model for Banking Service Quality.

### 1.5. Proposed Conceptualized Research Model

There are ten dimensions framed for this study. Since the research is formative model the dimensions are determined on the basis of Researcher's experience.



### 1.6. Significance of the Study

The proposed study is an attempt to study about the various service quality dimensions of banking. And in the other side, finding out the mediating factor for the service quality on banking. The present research pays its attention on Public, Private and Cooperative banks, expected and perceived quality on banking services and the satisfaction level of the particular service of the bank. The credit facility is the ultimate determinant of Quality of Service and

decides the motivated loyal customers of a particular bank. Since there are seven taluks and 120 branches in Nagapattinam district, the study will help for enhancing their service quality.

## **1.7. Methodology**

The proposed research is basically a survey on the mediating effects of service quality on banking in Nagapattinam district in Tamilnadu. For this research, all the banks and their branches were selected. Since the research is constructed on the basis of Formative research model of service quality, the dimensions framed are unique according to the formative models by Arulraj. A. and Senthilkumar. N. (2009) SQM-HEI Model, Arulraj. A. and Sureshkumar. V. (2009) HFSQ Model, Arulraj.A and Prabaharan. B. (2010) TNTOURQUAL Model, and Arulraj.A. and Parthiban.B. (2010) SEM-CPD Model.

### **1.7.1 Sampling Method**

The sampling procedure used for the study was Probability sampling; the respondent's are selected randomly for data collection. The data were collected from Nagapattinam area.

Structured Questionnaire was used to collect primary data, consisting of **58** questions with 7 point scale response varied from Highly Dissatisfied to Highly Satisfied and Strongly Agree to Strongly Disagree. 170 samples were collected throughout Nagapattinam district of Tamilnadu by adopting the method of personal interview. The questionnaire was put under pre-testing among 50 sample respondents, and some corrections and modifications were made accordingly.

### **1.7.4 Procedure for Data Analysis**

The data collected were analyzed for the entire sample. Data analyses were performed with Statistical Package for Social Sciences (SPSS) using techniques that included descriptive

statistics, Correlation analysis and AMOS package for Structural Equation Modeling (SEM) and Bayesian estimation and testing.

## **2. Analysis and Interpretation of Data:**

### **2.1 REGRESSION MODEL OF THE ‘BANKQUAL’ MEDIATED STRUCTURAL MODEL**

In hierarchical regression, the predictor variables are entered in sets of variables according to a pre-determined order that may infer some causal or potentially mediating relationships between the predictors and the dependent variable (Francis, 2003). Such situations are frequently of interest in the social sciences. The logic involved in hypothesizing mediating relationships is that “the independent variable influences the mediator which, in turn, influences the outcome” (Holmbeck, 1997). However, an important pre-condition for examining mediated relationships is that the independent variable is significantly associated with the dependent variable prior to testing any model for mediating variables (Holmbeck, 1997). Of interest is the extent to which the introduction of the hypothesized mediating variable reduces the magnitude of any direct influence of the independent variable on the dependent variable.

Hence the researcher empirically tested the hierarchical regression for the model conceptualized in the figure 4.1 with in the AMOS graphics environment.

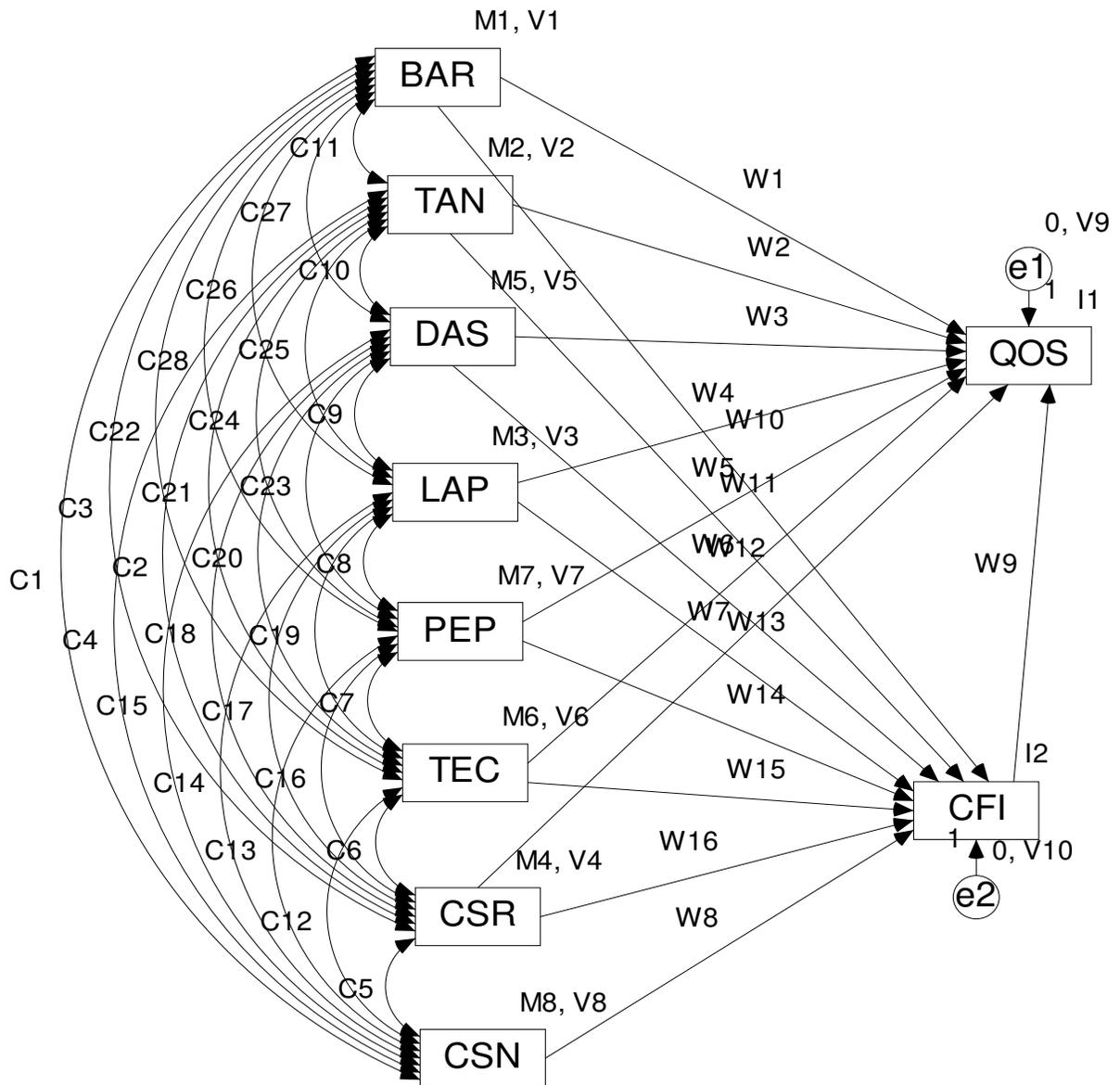
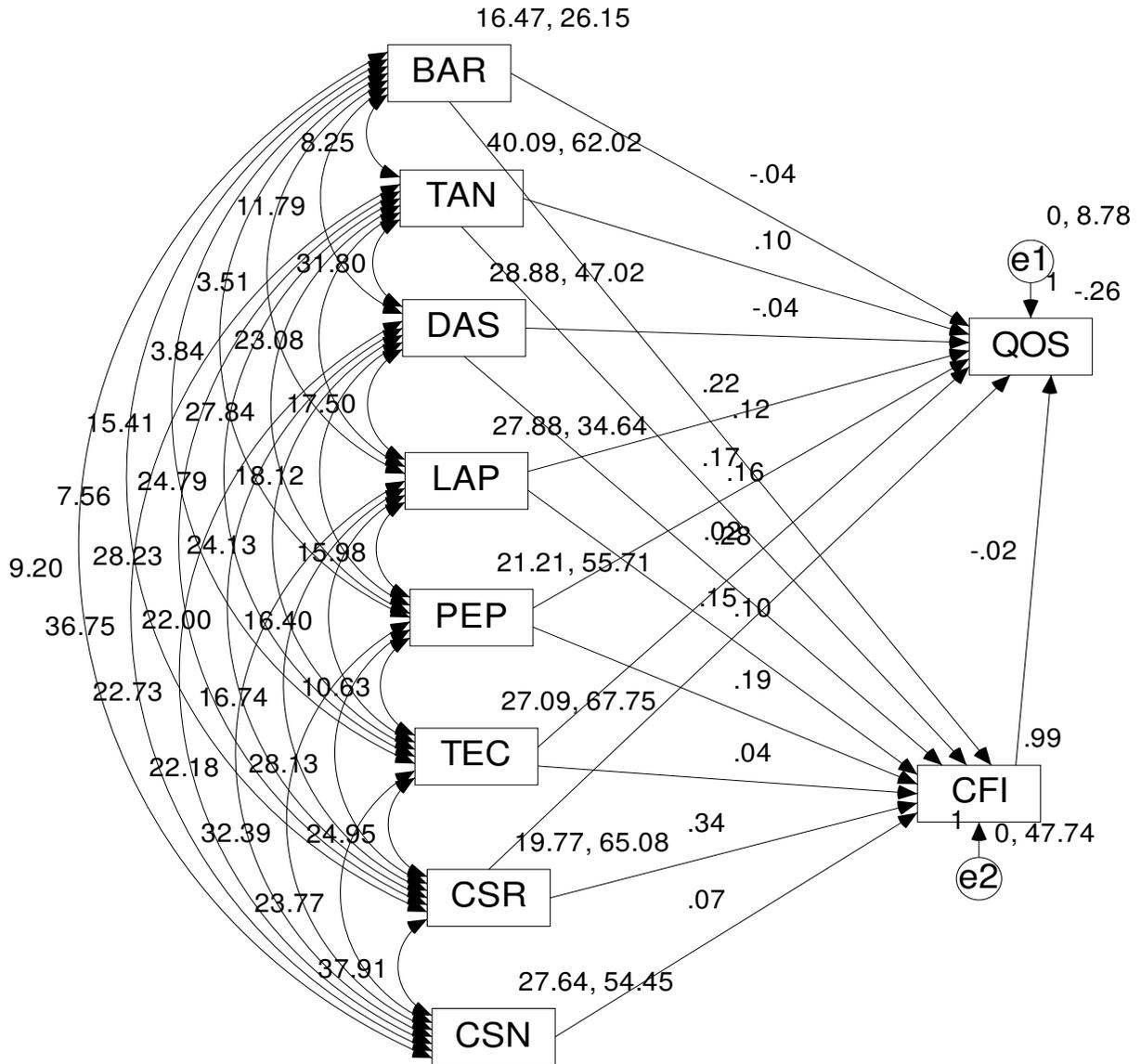


Fig. 2.1 Shows the hypothetical regression model of BANKQUAL mediated model.



**Fig. 2.2 Shows the AMOS output with regression weights of BANKQUAL mediated model.**

The analyses conducted, the parameter estimates are then viewed within AMOS graphics and it displays the standardized parameter estimates. The regression analysis revealed that the Customers perception on the various dimensions of service quality, CFI influenced -0.02 of the

QOS. The  $R^2$  value of -0.26 is displayed above the box Quality of Service AMOS graphics output. The visual representation of results suggest that the relationships between the dimensions of Banking quality. Corporate Social Responsibility (CSR => CFI =.34) resulted significant impact on the mediated factor 'Credit Facility and Interest'(CFI). The BAR, TAN, DAS, LAP, PEP, TEC and CSN are resulted very limited influence on the Credit Facility and Interest. It shows that the customers' perception towards CFI the Banking Deposits and Schemes(DAS) and Banking Act and Regulations (BAR) dimensions towards CFI the outcome of banking Quality of Service (QOS) is insignificant; whereas the impact of the same is very high on the mediating variable.

## **2.2 Bayesian Estimation and Testing For Regression Model of BANKQUAL Mediated Structural Equation Model**

The research model is a SEM, while many management scientist are most familiar with the estimation of these models using software that analyses covariance matrix of the observed data (e.g. LISREL, AMOS, EQS), the researcher adopt a Bayesian approach for estimation and inference in AMOS 7.0 environment (Arbuckle & Wothke, 2006). Since, it offers numerous methodological and substantive advantages over alternative approaches.

**TABLE 2.1: BAYESIAN CONVERGENCE DISTRIBUTION FOR ‘BANK QUAL’  
REGRESSION MODEL**

<b>Regression weights</b>	<b>Mean</b>	<b>S.E.</b>	<b>S.D.</b>	<b>C.S.</b>	<b>Skewness</b>	<b>Kurtosis</b>	<b>Min</b>	<b>Max</b>	<b>Name</b>
<b>QOS&lt;-- BAR</b>	<b>-0.041</b>	<b>0.002</b>	<b>0.054</b>	<b>1.001</b>	<b>-0.082</b>	<b>-0.037</b>	<b>-0.259</b>	<b>0.159</b>	<b>W1</b>
<b>QOS&lt;-- TAN</b>	<b>0.104</b>	<b>0.001</b>	<b>0.044</b>	<b>1.000</b>	<b>0.014</b>	<b>0.02</b>	<b>-0.06</b>	<b>0.306</b>	<b>W2</b>
<b>QOS&lt;-- DAS</b>	<b>-0.041</b>	<b>0.001</b>	<b>0.048</b>	<b>1.000</b>	<b>0.068</b>	<b>0.08</b>	<b>-0.213</b>	<b>0.172</b>	<b>W3</b>
<b>QOS&lt;-- LAP</b>	<b>0.218</b>	<b>0.001</b>	<b>0.05</b>	<b>1.000</b>	<b>-0.018</b>	<b>-0.019</b>	<b>0.023</b>	<b>0.414</b>	<b>W4</b>
<b>QOS&lt;--PEP</b>	<b>0.171</b>	<b>0.001</b>	<b>0.039</b>	<b>1.000</b>	<b>-0.023</b>	<b>-0.096</b>	<b>0.022</b>	<b>0.316</b>	<b>W5</b>
<b>QOS&lt;-- TEC</b>	<b>0.024</b>	<b>0.001</b>	<b>0.036</b>	<b>1.000</b>	<b>-0.049</b>	<b>-0.1</b>	<b>-0.121</b>	<b>0.158</b>	<b>W6</b>
<b>QOS&lt;-- CSR</b>	<b>0.151</b>	<b>0.001</b>	<b>0.039</b>	<b>1.000</b>	<b>0.026</b>	<b>-0.006</b>	<b>0</b>	<b>0.313</b>	<b>W7</b>
<b>CFI&lt;--CSN</b>	<b>0.06</b>	<b>0.004</b>	<b>0.127</b>	<b>1.001</b>	<b>0.037</b>	<b>0.004</b>	<b>-0.447</b>	<b>0.534</b>	<b>W8</b>
<b>QOS&lt;--CFI</b>	<b>-0.017</b>	<b>0.001</b>	<b>0.034</b>	<b>1.000</b>	<b>-0.033</b>	<b>0.155</b>	<b>-0.177</b>	<b>0.122</b>	<b>W9</b>
<b>CFI&lt;--BAR</b>	<b>0.119</b>	<b>0.004</b>	<b>0.122</b>	<b>1.001</b>	<b>-0.017</b>	<b>-0.005</b>	<b>-0.412</b>	<b>0.695</b>	<b>W10</b>
<b>CFI&lt;--TAN</b>	<b>0.169</b>	<b>0.003</b>	<b>0.103</b>	<b>1.000</b>	<b>-0.066</b>	<b>0.129</b>	<b>-0.255</b>	<b>0.657</b>	<b>W11</b>
<b>CFI&lt;--DAS</b>	<b>0.279</b>	<b>0.003</b>	<b>0.11</b>	<b>1.000</b>	<b>-0.07</b>	<b>-0.006</b>	<b>-0.177</b>	<b>0.729</b>	<b>W12</b>
<b>CFI&lt;--LAP</b>	<b>0.102</b>	<b>0.004</b>	<b>0.119</b>	<b>1.001</b>	<b>0.004</b>	<b>0.032</b>	<b>-0.387</b>	<b>0.544</b>	<b>W13</b>
<b>CFI&lt;--PEP</b>	<b>0.194</b>	<b>0.004</b>	<b>0.098</b>	<b>1.001</b>	<b>0.065</b>	<b>-0.056</b>	<b>-0.211</b>	<b>0.64</b>	<b>W14</b>
<b>CFI&lt;--TEC</b>	<b>0.042</b>	<b>0.002</b>	<b>0.084</b>	<b>1.000</b>	<b>0.013</b>	<b>0.006</b>	<b>-0.29</b>	<b>0.357</b>	<b>W15</b>
<b>CFI&lt;--CSR</b>	<b>0.344</b>	<b>0.002</b>	<b>0.094</b>	<b>1.000</b>	<b>-0.006</b>	<b>0.03</b>	<b>-0.041</b>	<b>0.701</b>	<b>W16</b>
<b>Means</b>									
<b>BAR</b>	<b>16.462</b>	<b>0.014</b>	<b>0.422</b>	<b>1.001</b>	<b>-0.007</b>	<b>0.009</b>	<b>14.799</b>	<b>18.113</b>	<b>M1</b>
<b>TAN</b>	<b>40.092</b>	<b>0.021</b>	<b>0.66</b>	<b>1.001</b>	<b>0.072</b>	<b>0.007</b>	<b>37.66</b>	<b>42.783</b>	<b>M2</b>
<b>LAP</b>	<b>27.861</b>	<b>0.012</b>	<b>0.488</b>	<b>1.000</b>	<b>0.071</b>	<b>0.179</b>	<b>25.835</b>	<b>30.107</b>	<b>M3</b>

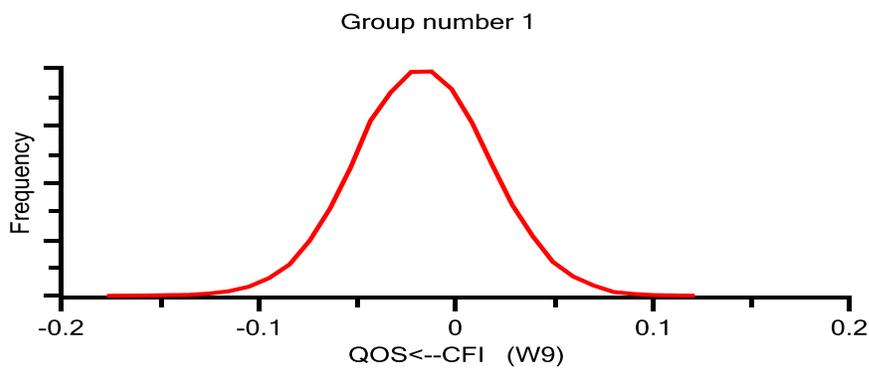
<b>CSR</b>	<b>19.816</b>	<b>0.017</b>	<b>0.66</b>	<b>1.000</b>	<b>0.053</b>	<b>-0.034</b>	<b>16.976</b>	<b>22.402</b>	<b>M4</b>
<b>DAS</b>	<b>28.876</b>	<b>0.018</b>	<b>0.555</b>	<b>1.001</b>	<b>0.003</b>	<b>0.067</b>	<b>26.679</b>	<b>31.074</b>	<b>M5</b>
<b>TEC</b>	<b>27.113</b>	<b>0.018</b>	<b>0.691</b>	<b>1.000</b>	<b>0.064</b>	<b>0.076</b>	<b>24.245</b>	<b>30.303</b>	<b>M6</b>
<b>PEP</b>	<b>21.228</b>	<b>0.015</b>	<b>0.607</b>	<b>1.000</b>	<b>0.017</b>	<b>-0.001</b>	<b>18.751</b>	<b>23.749</b>	<b>M7</b>
<b>CSN</b>	<b>27.661</b>	<b>0.019</b>	<b>0.604</b>	<b>1.000</b>	<b>-0.017</b>	<b>-0.045</b>	<b>25.303</b>	<b>30.205</b>	<b>M8</b>
<b>Intercepts</b>									
<b>QOS</b>	<b>-0.257</b>	<b>0.047</b>	<b>1.484</b>	<b>1.000</b>	<b>0.016</b>	<b>0.036</b>	<b>-6.444</b>	<b>5.566</b>	<b>I1</b>
<b>CFI</b>	<b>1.035</b>	<b>0.078</b>	<b>3.523</b>	<b>1.000</b>	<b>0.018</b>	<b>0.151</b>	<b>13.652</b>	<b>15.867</b>	<b>I2</b>
<b>Covariances</b>									
<b>BAR&lt;-&gt;CSN</b>	<b>10.367</b>	<b>0.152</b>	<b>3.547</b>	<b>1.001</b>	<b>0.281</b>	<b>0.427</b>	<b>-1.97</b>	<b>29.954</b>	<b>C1</b>
<b>TAN&lt;&gt;CSR</b>	<b>31.61</b>	<b>0.147</b>	<b>6.566</b>	<b>1.000</b>	<b>0.334</b>	<b>0.245</b>	<b>10.153</b>	<b>62.791</b>	<b>C2</b>
<b>BAR&lt;-&gt;CSR</b>	<b>8.595</b>	<b>0.138</b>	<b>3.947</b>	<b>1.001</b>	<b>0.254</b>	<b>0.236</b>	<b>-6.145</b>	<b>25.749</b>	<b>C3</b>
<b>TAN&lt;-&gt;CSN</b>	<b>41.3</b>	<b>0.2</b>	<b>6.351</b>	<b>1.000</b>	<b>0.413</b>	<b>0.38</b>	<b>19.289</b>	<b>76.144</b>	<b>C4</b>
<b>CSR&lt;-&gt;CSN</b>	<b>42.66</b>	<b>0.197</b>	<b>6.527</b>	<b>1.000</b>	<b>0.429</b>	<b>0.294</b>	<b>20.482</b>	<b>72.894</b>	<b>C5</b>
<b>TEC&lt;-&gt;CSR</b>	<b>27.957</b>	<b>0.255</b>	<b>6.805</b>	<b>1.001</b>	<b>0.373</b>	<b>0.428</b>	<b>1.386</b>	<b>60.29</b>	<b>C6</b>
<b>PEP&lt;-&gt;TEC</b>	<b>11.904</b>	<b>0.265</b>	<b>5.951</b>	<b>1.001</b>	<b>0.182</b>	<b>0.08</b>	<b>-9.302</b>	<b>38.039</b>	<b>C7</b>
<b>LAP&lt;-&gt;PEP</b>	<b>17.997</b>	<b>0.14</b>	<b>4.325</b>	<b>1.001</b>	<b>0.292</b>	<b>0.103</b>	<b>2.584</b>	<b>34.981</b>	<b>C8</b>
<b>DAS&lt;-&gt;LAP</b>	<b>19.774</b>	<b>0.176</b>	<b>4.106</b>	<b>1.001</b>	<b>0.39</b>	<b>0.267</b>	<b>7.396</b>	<b>38.203</b>	<b>C9</b>
<b>TAN&lt;-&gt;DAS</b>	<b>35.78</b>	<b>0.21</b>	<b>6.032</b>	<b>1.001</b>	<b>0.507</b>	<b>0.419</b>	<b>16.949</b>	<b>64.309</b>	<b>C10</b>
<b>BAR&lt;-&gt;TAN</b>	<b>9.288</b>	<b>0.14</b>	<b>3.817</b>	<b>1.001</b>	<b>0.052</b>	<b>0.055</b>	<b>-6.932</b>	<b>25.058</b>	<b>C11</b>
<b>TEC&lt;-&gt;CSN</b>	<b>26.874</b>	<b>0.231</b>	<b>6.303</b>	<b>1.001</b>	<b>0.302</b>	<b>0.262</b>	<b>3.311</b>	<b>57.938</b>	<b>C12</b>
<b>PEP&lt;-&gt;CSN</b>	<b>36.379</b>	<b>0.149</b>	<b>5.851</b>	<b>1.000</b>	<b>0.431</b>	<b>0.725</b>	<b>12.678</b>	<b>74.032</b>	<b>C13</b>

LAP<->CSN	24.925	0.148	4.474	1.001	0.373	0.109	10.807	46.434	C14
DAS<->CSN	25.474	0.18	5.29	1.001	0.438	0.579	6.326	53.762	C15
PEP<->CSR	31.545	0.164	6.171	1.000	0.356	0.275	11.525	64.177	C16
LAP<->CSR	18.723	0.133	4.684	1.000	0.248	0.35	0.643	40.951	C17
DAS<->CSR	24.643	0.167	5.596	1.000	0.387	0.148	6.22	49.002	C18
LAP<->TEC	18.541	0.17	4.755	1.001	0.324	0.294	1.918	42.066	C19
DAS<->TEC	27.242	0.262	5.927	1.001	0.445	0.494	8.281	54.865	C20
TAN<->TEC	28.04	0.289	6.629	1.001	0.336	0.219	6.34	55.841	C21
BAR<->TEC	17.587	0.191	4.342	1.001	0.379	0.542	1.892	38.16	C22
DAS<->PEP	20.26	0.123	5.164	1.000	0.459	0.78	0.298	48.555	C23
TAN<->PEP	31.318	0.13	6.156	1.000	0.486	0.986	8.072	72.052	C24
TAN<->LAP	26.155	0.158	4.877	1.001	0.363	0.213	9.899	49.248	C25
BAR<->LAP	3.986	0.12	2.794	1.001	0.175	0.47	-8.321	17.539	C26
BAR<->DAS	13.31	0.161	3.49	1.001	0.302	0.373	-0.76	30.677	C27
BAR<->PEP	4.229	0.13	3.542	1.001	0.081	0.044	-9.267	18.138	C28
Variances									
BAR	29.677	0.141	3.611	1.001	0.514	0.317	19.014	45.852	V1
TAN	70.209	0.344	8.336	1.001	0.512	0.565	44.416	110.578	V2
LAP	39.179	0.168	4.614	1.001	0.45	0.266	23.881	59.782	V3
CSR	73.303	0.285	8.531	1.001	0.414	0.137	48.259	109.887	V4
DAS	53.03	0.232	6.439	1.001	0.558	0.398	33.218	83.664	V5

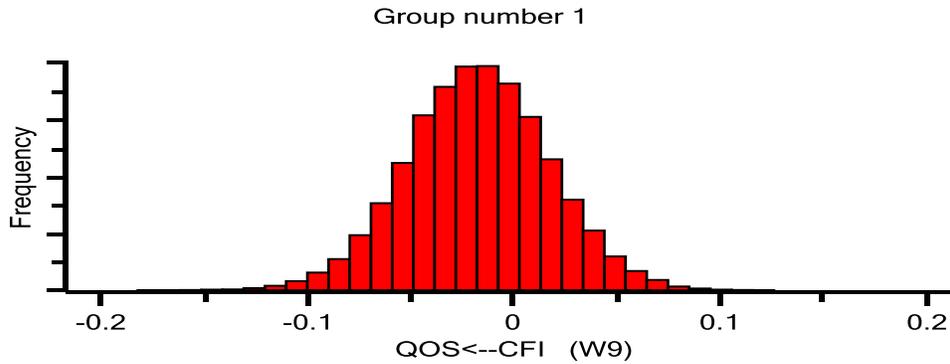
TEC	76.77	0.402	9.338	1.001	0.531	0.494	47.244	122.559	V6
PEP	62.664	0.203	7.44	1.000	0.507	0.66	40.835	103.728	V7
CSN	61.305	0.243	7.016	1.001	0.507	0.58	39.229	103.955	V8
e1	9.486	0.035	1.102	1.001	0.6	1.015	6.071	16.274	V9
e2	51.703	0.209	5.923	1.001	0.41	0.15	34.245	77.176	V10

### 2.3 Posterior Diagnostic Plots of '*BANK QUAL*' Mediated Regression Model

To check the convergence of the Bayesian MCMC method the posterior diagnostic plots are analyzed. The following figures (figure 4.3 and 4.4) shows the posterior frequency polygon of the distribution of the parameters across the 70 000 samples. The Bayesian MCMC diagnostic plots reveals that for all the figures the normality is achieved, so the structural equation model fit is accurately estimated.

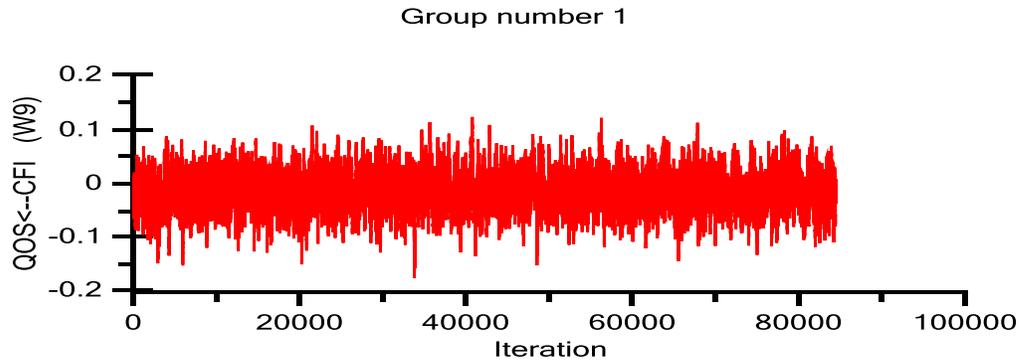


**Fig. 3** Posterior frequency polygon distribution of the mediating factor Credit Facility and Interest and Quality of Service regression weight (W8).



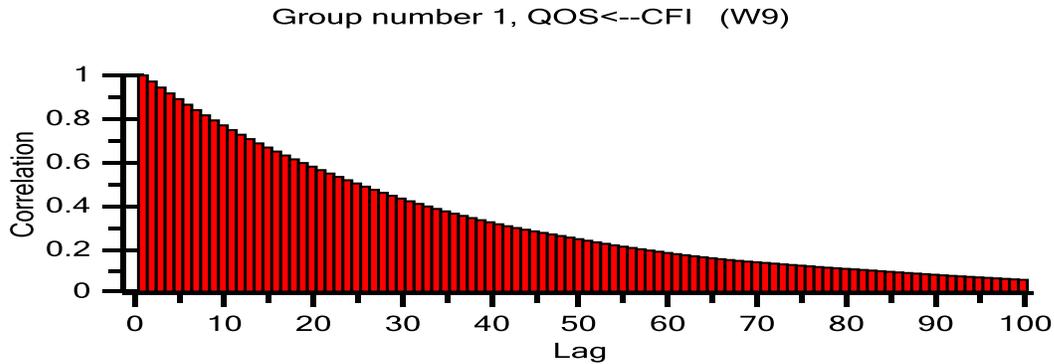
#### 2.4 Posterior frequency polygon distribution of the mediating factor Credit Facility and Interest and Quality of Service regression weight (W8).

The trace plot also called as time-series plot shows the sampled values of a parameter over time. This plot helps to judge how quickly the MCMC procedure converges in distribution. The following figures (figure 4.5) shows the trace plot of the mediated *BANK QUAL* model for the mediated factor Credit Facility and Interest with Quality of Service dimension across 70,000 samples. If we mentally break up this plot into a few horizontal sections, the trace within any section would not look much different from the trace in any other section. This indicates that the convergence in distribution takes place rapidly. Hence the mediated *BANK QUAL* MCMC procedure very quickly forgets its starting values.



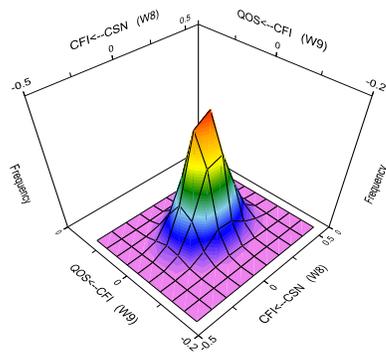
## 2.5 Posterior trace plot of the *BANK QUAL* regression model for the mediated factor Credit Facility and Interest and Quality of Service.

To determine how long it takes for the correlations among the samples to die down, autocorrelation plot which is the estimated correlation between the sampled value at any iteration and the sampled value  $k$  iterations later for  $k = 1, 2, 3, \dots$  is analyzed for the *BANK QUAL* regression model. The figures (figure 4.6) shows the correlation plot of the *BANK QUAL* model for the mediated factor Credit Facility and Interest with Quality of Service dimension across 70 000 samples. The figure exhibits that at lag 100 and beyond, the correlation is effectively 0. This indicates that by 90 iterations, the MCMC procedure has essentially forgotten its starting position. Forgetting the starting position is equivalent to convergence in distribution. Hence it is ensured that convergence in distribution was attained, and that the analysis samples are indeed samples from the true posterior distribution.

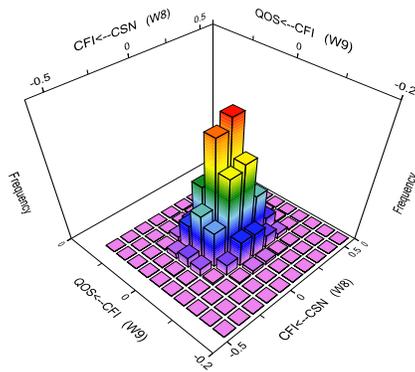


**2.6 Posterior correlation plot of the *BANK QUAL* regression model for the mediated factor Credit Facility and Interest and Quality of Service.**

Even though marginal posterior distributions are very important, they do not reveal relationships that may exist among the two parameters. The summary table given in table 4.7 and the frequency polygons given in the figure 4.7 and figure 4.8 describe only the marginal posterior distributions of the parameters. Hence to visualize the relationships among pairs of Parameters in three-dimensional the following figures (figure 4.31 and figure 4.32) provides bivariate marginal posterior plots of the *BANK QUAL* model for the mediated factor Credit Facility and Interest with other dimensions across 70000 samples. From the two figures it reveals that the three dimensional surface plots also signifies the interrelationship between the mediating variable Credit Facility and Interest with the other dimensions QOS & CSN.

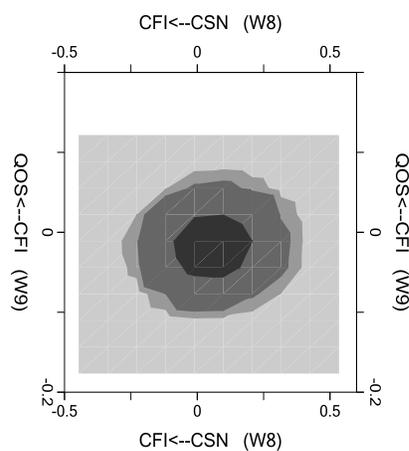


**2.7 Two-dimensional surface plot of the marginal posterior distribution of the mediating factor CFI with the QOS & CSN.**



**2.8 Two-dimensional surface plot of the marginal posterior distribution of the mediating factor CFI with the QOS & CSN.**

The following figure 4.9 displays the two-dimensional plot of the bivariate posterior density across 50 000 samples. Ranging from dark to light, the three shades of gray represent 50%, 90%, and 95% credible regions, respectively. From the figure, it reveals that the sample respondent's responses are normally distributed.



## **2.9 Two-dimensional plot of the bivariate posterior density for the regression weights Credit Facility and Interest (CFI) to Quality of Service (QOS) and Customer Satisfaction (CSN)**

The various diagnostic plots featured from figure 4.3 to figure 4.9 of the Bayesian estimation of convergence of MCMC algorithm confirms the fact that the convergence takes place and the normality is attained. Hence absolute fit of the BANK QUAL regression model. From the BANK QUAL regression model which is empirically tested with mediating factor Credit Facility and

Interest with the Quality of Service (QOS) it is evident that the Banking organizations should concentrate on the Credit Facility and Interest (CFI) as the mandatory aspect of banks which is not the case in developing countries.

## **1.9 Findings**

1. Credit facility and Interest (CFI) is the mediating factor for quality of service
2. Corporate Social Responsibility (CSR .34), Deposit and Schemes (DAS .28) are the most influencing factors to the mediating factor.
3. All the dimensions of banking service quality have positively influenced the Mediating factor Credit facility and Interest (CFI)
4. Since most of the areas are rural based in Nagapattinam District, the bankers are having intention to provide loan to the poorer, SHG and they access the banking services for getting loan to uplift their standard of living. So the CSR is the most influencing factor to the mediating factor (CFI).
5. Location and Place (LAP .22), People (PEP .16) are the most influencing factor for Quality of service in Banking service quality.
6. As per the RBI regulations some of the banks are appointed as servicing bank for a specific locality, the customers are in a position to utilize the particular bank's service only, and the banking employees are also having a cordial relationship with customers. So the LAP and PEP are the most influencing factor for quality of service in banking service quality.

## 1.12 Conclusion

Banking sector has undergone various changes after the new economic policy based on privatization, globalization and liberalization adopted by Government of India. Introduction of asset classification and prudential accounting norms, deregulation of Interest rate and opening up of the financial sector made Indian banking sector Competitive. Encouragement to foreign banks and private sector banks increased Competition for all operators in banking sector. Banks in India prior to adoption of new economic policy was protected by Government and was having assured market due to almost state monopoly in banking sector. However, under the new environment, Indian banks needs to reinvent the marketing strategy for growth. In India geographical development is not even throughout the country, there are full fledged urban areas covering the metropolitan cities and other big cities. On the other hand there are underdeveloped rural areas too. For effective bank marketing different approach for different areas is required. In urban areas customer service is of paramount importance as the level of literacy and therefore awareness of the people is more. Also technology based marketing would have higher degree of success due to typical urban life style of the people. Universal banking providing all financial services under one roof will have more success in urban areas.

Marketing through customer services in rural areas is different from that of urban areas. Here personalized banking is the success *mantra* for banks. Because of high level of illiteracy people prefer to undertake banking transaction themselves. They hesitate to depend upon technology based service. For effective marketing in rural areas bank should have staff with right soft skill like concern for customers' problem, positive attitude, good communication and negotiation skill. At every level of dealing with the customer bank need to educate them for banking

activities and processes. To attract the customers from the unorganized sector most important factor is to provide the borrower the required finance of right amount and at right time.

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