

Opinion on the Growth of Financial Inclusion in State of Tamil Nadu: An Empirical Analysis

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Abstract:—Majority of the poor people in India has limited access with financial service institutions especially banks. This study analyzes the opinion of customers about the financial service such as savings, credit, insurance and money transactions facilities offered by the banks in the state of Tamil Nadu, India. Its also focuses on non account holder opinions i.e financial excluded, in order to know how this service can deliver in better way, which will influence the financial inclusion in positive manner. 1400 samples were collected from the vulnerable groups throughout Tamil Nadu. The data were collected through a well structured questionnaire. Factor analysis method is used to compress the variables, using SPSS (18) software. The study found that both account holder and non account holder have the similar dimension about financial services and products irrespective of their various issues on financial inclusion.

Key word:—Financial Service, Vulnerable, Factor Analysis, Principal Component Analysis, Cronbach's alpha

I. INTRODUCTION

It has been debated that majority of the vulnerable group in India had limited access to financial services from formal financial institutions. Thus the basic question is why the vulnerable has limited or no access to financial products and services or they approach the money lenders, in spite of their logical demand for various types of products and services such as savings, credit, insurance, money transactions and investment facilities, of both financial products and financial services.

II. METHODOLOGIES

This study was carried out in Tamil Nadu (130058 Sq.km) which is the eleventh largest state in India with 32 districts. Non probability sampling method is adopted since the sampling area and sample size are large and more overly the targeted group i.e., vulnerable size is not precise. Hence convenience sampling method used to select the respondents belonging to vulnerable group based on the income earned by them. A well structured questionnaire with 5 point scale is used to collect the responses using scheduling method for the illiterates and educational qualification in primary level respondents. Questionnaire method is used for respondents whose education level is secondary and university level. The sample size selected for the analysis and inference was 1400 respondents. SPSS [18] is used to analyze the data and draw the interpretation.

III. FACTORS INFLUENCE THE DISTRIBUTION OF FINANCIAL SERVICES

Based on the group discussion with the respondents 15 items in total were selected to measure the relative importance of different features of financial services and products related to: *Access to financial services, flexible terms on savings and deposits, flexible terms on credits, information about various financial services, creditability and confidentiality* about vulnerable accounts. These items were measured on five point numerical scale with responses ranging from “strongly agree” (1), agree (2), disagree (3), strongly disagree (4) and “neither agree nor disagree” (5). The item used include; “Understanding the technological procedures of bill payment”, “Quick access to your deposit / Loan Application”, “Availability of ATM for money usage”, “Money transaction and handling process”, “Reasonable administrative cost of deposit”, “Small Savings”, “Max. Interest on Savings”, “Reasonable Interest on Loans”, “Priority for Regular Repaying Customer”, “Availability of Bank Services”, “FSI nearby Residence”, “Confidentiality about Customers Account Information”, “Satisfactory reply for your Queries”, and “Attitude of Bank Employees”.

For the case of present study, data set had 15 statements that define the important features associated with financial products and services desired by the vulnerable groups. The purpose of subjecting these statements to factor analysis is to get fewer operational constructs that could be used to identify future behaviour of formal financial institutions in designing new financial services and products for vulnerable. In view of this argument, Principal Component Analysis (PCA) with varimax rotation which are linear functions of the measurements were performed to extract principle components from 15 statements that defines the important features of financial products and services desired by the vulnerable.

The alpha coefficient for the four items is .974, suggesting that the items have relatively high internal consistency. Reliability coefficient of .70 or higher is considered “acceptable” in most social science research situations (Joseph A. Gliem Rosemary R. Gliem, 2003)

Table 3.1 Alpha Coefficient

| Reliability Statistics | | |
|------------------------|--|------------|
| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
| .974 | .974 | 15 |

Table 3.2 Total Items & Statistics

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Squared Multiple Correlation | Cronbach's Alpha if Item Deleted |
|------------------|----------------------------|--------------------------------|----------------------------------|------------------------------|----------------------------------|
| Quick Access | 42.2586 | 213.023 | .902 | .910 | .971 |
| Sanction | 42.1634 | 224.902 | .616 | .674 | .976 |
| Repayment | 42.1502 | 216.220 | .852 | .891 | .972 |
| Interest | 42.8696 | 215.461 | .863 | .887 | .972 |
| Transaction | 42.0059 | 218.377 | .887 | .884 | .972 |
| ATM | 42.6703 | 211.394 | .867 | .920 | .972 |
| Bill payment | 42.6762 | 219.971 | .805 | .798 | .973 |
| Savings | 42.6066 | 214.802 | .835 | .844 | .972 |
| Deposits | 42.4264 | 209.732 | .841 | .917 | .972 |
| Savings Interest | 41.5634 | 219.446 | .759 | .852 | .973 |
| Information | 41.9289 | 218.562 | .750 | .861 | .974 |
| Advice | 42.5670 | 215.130 | .880 | .863 | .972 |
| Queries | 42.5949 | 213.294 | .867 | .912 | .972 |
| Attitude | 42.2220 | 212.380 | .935 | .921 | .971 |
| Confidentiality | 42.0762 | 217.120 | .884 | .890 | .972 |

Under the “Cronbach’s Alpha if item deleted” the reliability of .976 >.974, so it is necessary to delete that item. This column presents the value that Cronbach's alpha would be if that particular item was deleted from the scale. We can see that removal of any question except question 2 (sanction), would result in a lower Cronbach's alpha. Therefore, we would not want to remove these questions. Removal of question 8 would lead to a small improvement in Cronbach's alpha and we can also see that the **Corrected Item-Total Correlation** value was low (0.616) for this item. This might lead us to consider whether we should remove this item. However, before performing PCA, scale reliability test was conducted on all 15 constructs items and the scale was found to have a Cronbach’s coefficient alpha of 0.973, which exceeds the acceptable lower limit of 0.6 according to **Nunnally** (1978). The convergent validity was examined using exploratory factor analysis principal component with varimax rotation for which factor loadings are above ± 4.0 for all variables. The determinant was found as 0.004 and was greater than the necessary value of .001 and this gives confidence that multicollinearity does not exist in the data and by implication 15 retained statements correlate fairly well with one another and none of the correlation coefficients are particularly large.

Kaiser-Meyer-Olkin (that is, the measuring of sample adequacy MSA) was found as 0.922 showing that each variable has been fairly predicted by the other variables without error. The overall KMO is above the acceptable level of 0.5 as per **Kaiser’s** (1974) recommendations that the minimum KMO is 0.5 and that, the values between 0.5 and 0.6 are

mediocre values whereas any value above 0.7, 0.8 and 0.9 are considered as good, great and excellent respectively. Having the overall KMO is excellent. It was found that the values for all 16 retained statements were consistently higher than 0.6 (acceptable minimum level) and in some cases individual variables' KMO were over 0.8 which is excellent as per Kaiser (1974).

Table 3.3 KMO and Bartlett's Test

| | | |
|--|--------------------|-----------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .922 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 30915.252 |
| | Df | 91 |
| | Sig. | .000 |

The Bartlett's Test of Sphericity is **30915.252** and significant at $\rho = .000$ thus showing the correlations among variables in the data were neither singular nor identity correlation matrix. Thus, having examined all four preliminary test namely, determinant, overall Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO), Cronbach Alpha and Bartlett's Test of Sphericity, the results in all four cases justify that the use of factor analysis is an appropriate tool for the data obtained through the construct of 5 point likert - scale. Since the average of the communalities is greater than 0.6 and the sample size exceeded 1300 respondents (Kaiser's criterion of retaining the number of factors), the researcher retained the default number of factors as generated by SPSS taking into account of latent root criteria (that is, eigenvalues greater than 1). To understand the opinion of vulnerable groups about the financial services and products offered by bank this factor analysis were made.

Table 3.4 Total Variance Explained

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 10.719 | 76.563 | 76.563 | 10.719 | 76.563 | 76.563 |
| 2 | .854 | 6.097 | 82.659 | | | |
| 3 | .770 | 5.502 | 88.162 | | | |
| 4 | .464 | 3.315 | 91.477 | | | |
| 5 | .260 | 1.857 | 93.334 | | | |
| 6 | .222 | 1.585 | 94.919 | | | |
| 7 | .150 | 1.069 | 95.988 | | | |
| 8 | .130 | .931 | 96.919 | | | |
| 9 | .106 | .758 | 97.676 | | | |
| 10 | .091 | .647 | 98.323 | | | |
| 11 | .085 | .610 | 98.933 | | | |
| 12 | .066 | .474 | 99.407 | | | |
| 13 | .048 | .339 | 99.747 | | | |
| 14 | .035 | .253 | 100.000 | | | |

Extraction Method: Principal Component Analysis

Table 3.5 Factor Analysis on Opinion about Financial Services and Products

| Factors | Component | | | | | Communality |
|--|-----------|---|---|---|---|-------------|
| | 1 | 2 | 3 | 4 | 5 | |
| Factor 1: Access to Financial Services | | | | | | |
| Understanding the technological procedures of bill payment | .968 | | | | | .916 |
| Quick access to your deposit / Loan Application | .957 | | | | | .885 |
| Availability of ATM for money usage | .949 | | | | | .900 |
| Money transaction and handling process | .941 | | | | | .937 |
| Factor 2: Flexible Terms on | | | | | | |

| | | | | | | |
|--|---------------|---------------|---------------|---------------|---------------|------|
| Savings/Deposits | | | | | | |
| Reasonable administrative cost of deposit | | .980 | | | | .961 |
| Small Savings | | .971 | | | | .943 |
| Max. Interest on Savings | | .943 | | | | .889 |
| Factor 3: Flexible Terms on Loans | | | | | | |
| Reasonable Interest on Loans | | | 0.942 | | | .887 |
| Priority for Regular Repaying Customer | | | 0.902 | | | .814 |
| Factor 4: Information about various products and services | | | | | | |
| Financial Advice | | | | 0.952 | | .948 |
| Information about new Products | | | | 0.809 | | .655 |
| Factor 5: Credibility /Confidentiality | | | | | | |
| Confidentiality about Customers Account Information | | | | | 0.974 | .923 |
| Satisfactory reply for your Queries | | | | | 0.961 | .910 |
| Attitude of Bank Employees | | | | | 0.954 | .949 |
| Eigen Values | 3.638 | 2.794 | 1.779 | 1.736 | 2.782 | |
| % of Variation | 90.959 | 93.128 | 88.942 | 86.795 | 92.736 | |

IV. 4 EMPIRICAL RESULTS FOR THE TOTAL SAMPLE

Table 4.41 provides empirical results of the factor analysis. Five factors with eigenvalues greater than one were produced and percent of the total explained variance. Four items were identified under **factor one** with loadings ranging from 0.968 to 0.941 with Cronbach's alpha of 0.927 and factor mean score of 2.939. The high mean score clearly indicates the relative importance attached to the factor. An analysis of these statements was interpreted as items related to access to "Access of Financial Services". Specific items loading on factor one included: Quick access to your deposit/loan application, Money transaction and handling processes, Availability of ATM for money usage and understanding the technological procedures of bill payment.

Factor two identified three items which had factor loadings ranging from 0.980 to 0.943 with alpha value of 2.947 and factor mean score of 0.829 signifying that respondents give higher importance to the factor. Specific item loading on this factor are Sanctioning for adequate amount, the costs of making a deposit and liquidating it and Interest rate on savings have been interpreted as "Flexible Terms on Savings and Deposits".

Factor three identified three items which appeared to be related to "flexible terms of borrowing". Specific items were Sanctioning of adequate amount, Reasonable interest on Bank Loan and Priority on additional loan for the prompt repayment of the previous loan. Factor loadings ranged from 0.942 to 0.902 and alpha value is 2.947. The factors mean score which expresses the views of respondents for the factor is 0.829, indicating that generally vulnerable attach more importance to the variable flexibility of the services they get.

Three items were identified under **factor four** with loadings ranging from 0.952 to 0.809. Alpha value and factor mean score were 3.093 and 0.764 respectively. An analysis of these statements was interpreted as items related to "Access to information about variety of services". Specific items loading on to this factor include: Easy access to FSI and Availability of range of banking services.

Factor five converged with two items namely attitude of the bank employees and credibility of the bank with factor loading of .974 and .954 respectively. These items appeared to be related to "Responsibility". The factor had alpha value of 2.346 and factor mean score of 0.945 indicating high importance attached Confidentiality about account information, Ready to answer the queries related to financial services, Attitude of the bank employees and Social Responsibility.

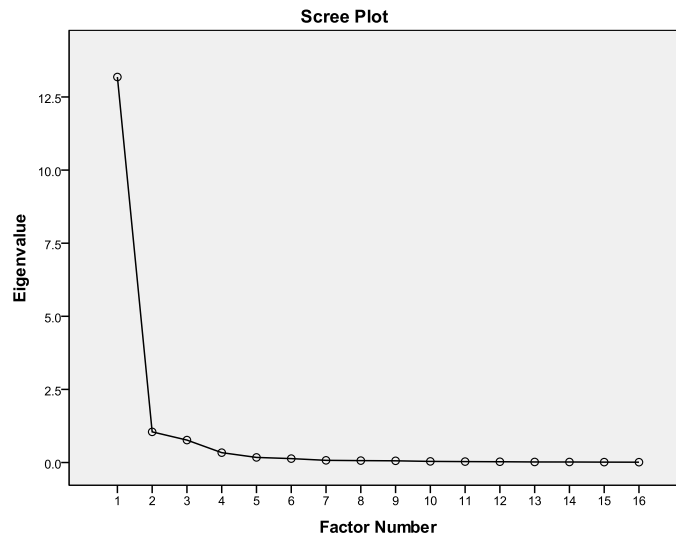
V. MAJOR IMPLICATIONS

Using the factor analysis the large data is reduced. To measure the respondents view on financial service offered by banks reliability analysis is carried using reliability test. For 16 items the reliability is shown to be good because the alpha is .922 any value above 0.7, 0.8 and 0.9 are considered as good. Factor analysis produces a five factors solution with eigenvalues greater than one which accounted for 75.53 per cent of the total explained variance. These include: the first factor "Access to Financial Services" with four variables (Quick access to your deposit/loan application, Money transaction and handling processes, Availability of ATM for money usage, understanding the technological procedures of bill payment). Second factor "Flexible Terms on Savings & Deposits" with three variables (Sanctioning for adequate amount, the costs of making a deposit and liquidating it and Interest rate on savings). Third factor "Flexible terms of borrowing" with three variables (Sanctioning of adequate amount, Reasonable interest on Bank Loan, Priority on additional loan). The fourth factor "Access to information about various services" with two variables (Easy access to FSI, Availability of range of banking services) and the fifth factor "Responsibility" is combination of two variables (Confidentiality about account information, Ready to answer the queries related to financial services, Attitude of the bank employees, Social Responsibility) Factor mean

score revealed that all factors except “Sanction of adequate amount ” exert substantially high importance on financial services and products supported by vulnerable.

Principal component analysis was used for extracting factors with Varimax was applied. The factors having Eigen values greater than one were considered significant. There are five factors each having Eigen value more than one are 3.638, 2.794, 1.779, 1.736 and 2.782. The index for the present solution accounts for 92.736% of total variations for service factors, in other hand 7.264% choice of variables lost. The percentage of variance under five factors was explained by 90.959%, 93.128%, 88.942%, 86.795% and 92.736%. Large communalities indicate that large number of variance has been accounted by the factor solutions. Factor analysis with reference to account holder and non account holder samples results that vulnerable group support the same attributes of financial services and products irrespective of their issue on financial inclusion.

Fig. 5.1 Eigen Value of Five Factors



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