

Criteria of Selecting Banks by Teachers: A Factor Analytic Approach

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ABSTRACT

This paper attempts to analyze the factors that affect the choice of customers about their bankers. The customers choose their bank after considering number of factors. So from the bank's point of view it becomes important to understand the relative importance of these factors. This paper has tried to determine the criteria that teaching professionals consider important while selecting a bank and how these criteria are prioritized according to their importance and examine whether teaching professionals constitute a homogeneous group in relation to the way they select a bank. In nutshell, the paper aims to study and rank the factors responsible for the selection of bank by teaching professionals. The study involves a survey of 50 bank customers using questionnaire as the research instrument along with the formal interviews. In the study, the author has tried to analyze as to which factors exert the Highest, Moderate, Low, Neutral and Negative influence as choice criteria among individual customer.

Key words: Customers Choice for Bank, Factor analysis, Principal Component analysis, SPSS

Introduction

The paper is focusing the priorities of the customers of the bank specially the teachers, how they select the bank? What are the parameters on the basis of which they evaluate various banks available in the locality? The different factors identified to start with for the research are Safety of Deposits, Size and Strength, Responsiveness to the Problem, Bank Ownership (Public /Private), Accuracy in computation, Security in area where bank is located , Price and Service Charges, Number of branches in city , General Service Quality, Convenient Location, Number of ATM's in city, Parking Facility, Bank Size, Cordiality of Staff, Proximity, Infrastructure of Bank, Product Packaging, Technology, Peer Group Impression, Advertisement & Publicity, Online Facility etc. By using SPSS for Factor analysis we identify the important factor that makes the way to achieve Bank's Corporate mission through customer orientation . Results of the Factor Analysis for the total sample Indicate that the bank selection decision by customers is based primarily on six selection criteria.

Factor Analysis is a data reduction technique used to reduce a large number of variables to a smaller set of underlying factors that summarize the essential information contained in the variables.

The technique in using factor analysis is grouping the variables by their correlation in such a

way that a particular group is highly correlated among them but relatively smaller correlation with the variables in other group. Each group thus constructs a factor. So the data reduction is possible with the identification of smaller number of factors that explains most of the variance observed in much larger number of variables. We can also generate hypothesis on the basis of these construct.

Objectives

The objectives in this study are two-fold:

1. To determine the criteria that teaching professionals consider important when selecting a bank and how these criteria are prioritized according to their importance
2. To examine whether teaching professionals constitute a homogeneous group in relation to the way they select a bank.
3. To study and rank the factors responsible for the selection of bank by teaching professionals.

Literature Review

A limited number of studies dealing with the topic of bank selection criteria of teachers have been conducted.

A study by Thwaites and Vere (1995), conducted in a British setting, showed that proximity

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of an ATM to college, free banking service and overall student offer were the top three selection criteria employed by college students in selecting which banks to patronize.

Poh (in Gerard and Cunningham, 2001), in a study which sampled Singapore's university and polytechnic students, found that factors relating to ATMs and speed of service were of the most important criteria affecting their bank selection. Criteria relating to third party influences were found to be so unimportant during the pilot test and therefore were excluded from the actual study.

Huu and Karr (2000) sampled 198 undergraduate students in Singapore to identify factors which influence their bank selection decisions. Using "analytical hierarchy process" they found that undergraduates place high emphasis on the pricing and product dimensions of bank services. The third party influences were found to be the least important selection criteria.

Almossawi (2001) conducted a study in Bahrain to examine the bank selection criteria employed by college students. A total sample of 1000 students from five colleges of the University of Bahrain was surveyed in the study. He found that the key factors determining college students' bank selection were: bank's reputation, availability of parking space near the bank, friendliness of bank personnel and availability and location of automated teller machines (ATM).

More recently, Pass (2006) surveyed 373 students from four community colleges and universities located in a large metropolitan area of the Western United States to obtain information about the reasons for students switching banks and selecting new banks.

Pricing and convenience were found to be the principal reasons for selecting a new bank and 'hypothetically' switching banks. The finding that price is a chief reason for switching to another bank and selecting a new one.

A perusal of the literature presented above revealed that research studies conducted on bank selection decisions examined a variety of attributes as determinants of the bank selection process and unearthed a variance in the nature and importance of these attributes.

The present study attempts to partially fill the gap in the literature through an empirical analysis of bank

selection criteria by teaching professionals employed in various colleges and universities of Uttarakhand, U.P. and nearby region.

It is worth noting from the review that no relevant published work to date has appeared concerning the banking behavior of teachers in market. Far less is known about the relative homogeneity of teachers in relation to their bank choice criteria.

Research Methodology

A comprehensive questionnaire was designed based on the variable identified through the relevant literatures. The questionnaire designed was also tested for its validity and used as the survey tool in the selected sample identified as a part of this work. The responses obtained were coded and analyzed with appropriate statistical tools. The statistical analysis was performed with the help of SPSS software package.

In order to conduct this study, 50 customers of teaching professionals working in various colleges and universities of Uttarakhand, U.P. and nearby states have been surveyed. The questionnaire and Direct Interview is used for Data Collection. All the data required for this study has been obtained mainly from primary sources, but at times, a secondary source of data has also been referred.

Statistical tools and Techniques

For measuring various phenomena and analyzing the collected data effectively and efficiently to draw sound conclusions, a number of statistical techniques including Descriptive analysis, Pie chart, Chi-square test and Factor analysis have been used.

Analysis and Discussion

A structured questionnaire was prepared for use in the survey based on literature review and objectives of the study. The questions were organized into two sections as follows:

The first section contains the information required to obtain personal background of the respondents. Questions regarding their Name, age, Education and Salary were included in this section of the questionnaire. The Number of Bank Accounts that customers have in various banks was also considered.

The second section of the questionnaire asked respondents to rate the importance of 21 attributes of the banks when choosing the commercial banks for

doing transactions. They were measured on a five point Likert-type scale of importance ranging from 1 (negative influence) to 5 (high influence). The list was based on previous similar studies (Thwaites and Vere, 1995; Almossawi, 2001; Gerrard and Cunningham, 2001; Shikha, 2008).

The questionnaire sought to obtain information on the banking behavior of respondents.

To determine the potential effectiveness of the questionnaire and whether further revision is needed prior to conducting the survey, the questionnaire was pilot tested. The researcher distributed the questionnaire to 15 persons as a sample group. The subjects were asked if they had any problems understanding the questionnaire or have specific comments regarding the questionnaire. The format for responding was through open-ended questions. The subjects were encouraged to be very free with their responses, make suggestions for improvement and delineate any difficulties they found.

After each questionnaire was completed, each subject was asked what he/she meant in checking various answers. Comments were solicited on the clarity of the questions and what changes should be done in order to make the questions simpler. These respondents also gave their comments on understanding the instructions about the scaling and the time taken to answer the questions. The test found no serious problems and minor amendments were made to the survey questions based on the verbal feedback received from the interview. The final result of the pilot test indicated that the questions had face validity.

Sample and Data Collection

The sample for this study was selected among teaching professionals employed in various colleges and universities of Uttarakhand, U.P. and nearby region, teaching degree courses ranging from Management programs to Technical Engineering Programs. Given the nature of the study, a non-probability (convenience) sample was chosen. To get a representative cross-section of the population, the sample was drawn from a wide range of teachers from all disciplines.

Since this is an exploratory study, a sample size of 50 has been considered to be adequate. Self-administered surveys were distributed in June 2009. The survey was taken in a controlled classroom environment; allowing for a stronger research design.

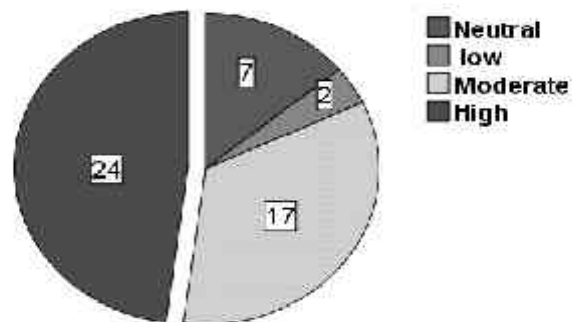
Specifically, the researcher read a standard set of instructions to the class, informing them of the survey purpose and conditions and encouraged their participation in the study. Respondents were assured of the confidentiality of their responses and their names were not solicited.

Respondents were given approximately 30 minutes to complete the questionnaire. They were prevented from communicating with each other while the survey was in progress. From a total of 60 questionnaires distributed, 54 were returned, out of which 4 were deemed unusable (invalid and incomplete), thereby yielding a response rate of about 83 percent.

Such a response rate was considered sufficient for statistical reliability and generalisability (Tabachnick and Fidell, 2001) and most satisfactory especially when compared with earlier research works on bank selection decisions (Khazeh and Decker, 1992-93; Huu and Karr, 2000; Gerrard and Cunningham, 2001). This relatively high response rate was attributed to the self-administered approach undertaken in distributing questionnaires.

Demographics of the Respondents

Examination of the respondents (N=50) indicated that about 24 teachers attached high value to online facilities of the banks in their criteria of choosing a bank.



Responsiveness to Online Facility of Banks

All analyses were conducted using SPSS statistical software version 16 for Windows. As a preliminary step, evaluative criteria items were Factor analysed to reduce the variables to a manageable number of components. Factoring ceased when all Eigen values of greater than one were obtained and when a set of factors explained a large percentage of the total variance.

Now our first step is to check whether the data we consider is fit for factor analysis. First we prepare correlation matrix with 21 variables that we have started with. We checked the determinant of the correlation matrix thus produced. The calculated determinant for raw data containing 21 variables is 7.46E-06 which is less than .00001 showing the problem of multicollinearity. Thus by carefully eliminating 6 variables before finally proceeding, it comes out to be .004 and thereby removing this problem.

For that there must be significant correlation among the variables. Here we observe from the correlation matrix that few correlations are small so we can go for analysis.

Table 1. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.511
Bartlett's Test of Sphericity	Approx. Chi-Square	234.966
	Df	105
	Sig.	.0001

Factor Analysis was deemed appropriate for the items because the Keiser-Meyer-Olkin (KMO) measure of sampling adequacy test index equaled 0.511 (Table 1). Further Kaiser (1974) recommends accepting values greater than 0.5 as acceptable.

Bartlett's measure tests the null hypothesis that original correlation matrix is an identity matrix. Bartlett's test gives a significance level of less than 0.0001 confirming the appropriateness of the factor model (Table 2). A significant test tells us that the matrix is not an identity matrix; therefore, there are some relationships between the variables we included in the analysis. Bartlett's Test is highly significant ($p < 0.001$) and therefore factor analysis is appropriate.

Factor Extraction

Further analysis, therefore was carried out. In the final results, total six factors out of 15 have Eigen values more than 1.00 (Table 3).

The eigen values associated with each linear component (Factor) before extraction, after extraction and after rotation. Before extraction, SPSS has identified 15 linear components within the data set

Table 2. Correlation Matrix^a

	SOD	RTP	BOS	AIC	SIB	PSC	NOB	CoL	NOA	PaF	COS	IOB	P Pack	AdP	OLF
SOD	1.000	-.025	-.196	.074	.216	-.073	-.067	.010	.004	-.044	.146	.372	.276	-.160	-.199
RTP	-.025	1.000	.121	.235	.048	.367	.055	.392	.273	-.180	.085	.198	-.136	-.132	.332
BOS	-.196	.121	1.000	-.010	.291	.266	-.207	.025	-.104	-.080	.053	-.089	.262	.013	-.070
AIC	.074	.235	-.010	1.000	.057	.021	.304	.243	.107	.000	.195	.301	.086	.048	.150
SIB	.216	.048	.291	.057	1.000	.161	-.197	.353	-.304	.366	.316	.095	.499	.143	-.346
PSC	-.073	.367	.266	.021	.161	1.000	-.161	.009	.185	.076	-.252	.179	.039	-.163	.149
NOB	-.067	.055	-.207	.304	-.197	-.161	1.000	.084	.357	.254	-.025	.200	-.050	-.080	.089
CoL	.010	.392	.025	.243	.353	.009	.084	1.000	.134	.112	.185	.319	.278	.373	.167
NOA	.004	.273	-.104	.107	-.304	.185	.357	.134	1.000	.095	.023	.213	-.205	.033	.620
PaF	-.044	-.180	-.080	.000	.366	.076	.254	.112	.095	1.000	.165	.178	.336	.235	-.124
COS	.146	.085	.053	.195	.316	-.252	-.025	.185	.023	.165	1.000	.177	.278	.389	.059
IOB	.372	.198	-.089	.301	.095	.179	.200	.319	.213	.178	.177	1.000	.433	.199	-.004
PPack	.276	-.136	.262	.086	.499	.039	-.050	.278	-.205	.336	.278	.433	1.000	.419	-.218
AdP	-.160	-.132	.013	.048	.143	-.163	-.080	.373	.033	.235	.389	.199	.419	1.000	.203
OLF	-.199	.332	-.070	.150	-.346	.149	.089	.167	.620	-.124	.059	-.004	-.218	.203	1.000

a. Determinant = .004

(we know that there should be as many eigen vectors as there are variables and so there will be as many eigen vectors as there are variables and so there will be as many factors as variables). So factor 1 explains 19.1715 % of total variance. It is clear from the table that first few factors explain relatively large amounts of variance whereas subsequent factors explain only small amount of variance. SPSS then extracts all factors with Eigen values greater than 1, which leaves us with six factors. The Eigen values associated with these factors are again displayed (and the percentage of variance explained) in the columns labeled *Extracted Sums of Squared Loadings*. The values in this part of the table are the same as the values before extraction, except that the values for the discarded factors are ignored (hence, the table is blank after the Sixth factor). In the final part of the Table 3 (labeled *Rotation Sums of Squared Loadings*), the Eigen values of the factor after rotation are displayed.

Hence, total six factors are to be considered for interpretation. The results also show that these six factors account for 72.955 percent of the total variance. Rotation has the effect of optimizing the factor structure and so for the data the relative importance of the six factors is equalized. Before rotation, factor 1 accounted for considerably more variance (19.171%) than remaining five however after extraction it accounts for only (12.903%).

Table 4 of communalities shows communalities before and after extraction. The communalities in the column labeled extraction reflect the common variance in data structure. So we can say that 79.1% of the variance associated with safety of deposit is common or shared variance.

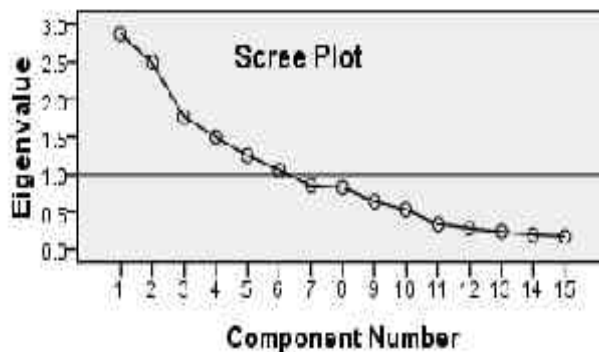
Table 3. Total Variance Explained : Extraction Method: Principal Axis Factoring.

Factor	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.876	19.171	19.171	2.443	16.288	16.288	1.935	12.903	12.903
2	2.490	16.601	35.772	2.133	14.221	30.508	1.794	11.961	24.864
3	1.767	11.783	47.556	1.487	9.913	40.421	1.367	9.116	33.980
4	1.504	10.027	57.582	1.198	7.984	48.406	1.359	9.057	43.037
5	1.252	8.344	65.926	.883	5.887	54.293	1.239	8.260	51.297
6	1.054	7.028	72.955	.695	4.631	58.924	1.144	7.627	58.924
7	.848	5.655	78.610						
8	.824	5.496	84.106						
9	.641	4.273	88.379						
10	.528	3.522	91.900						
11	.338	2.251	94.151						
12	.280	1.864	96.015						
13	.235	1.570	97.585						
14	.191	1.271	98.855						
15	.172	1.145	100.000						

Table 4. Communalities: Extraction Method: Principal Axis Factoring.

Component	Initial	Extraction
Safety Of Deposit (SOD)	.485	.791
Responsiveness To Problem (RTP)	.514	.755
Bank Ownership (BOS)	.382	.245
Accuracy In Computation (AIC)	.261	.230
Security In Bank (SIB)	.651	.661
Price and Service Charges (PSC)	.509	.948
No Of Branches (NOB)	.441	.810
Convenient Location (COL)	.531	.453
No of ATM (NOA)	.607	.596
Parking Facility (PaF)	.464	.422
Cordiality Of Staff (COS)	.424	.308
Infrastructure Of Bank (IOB)	.536	.506
Product Packaging (PPack)	.620	.648
Advertising and Publicity (AdP)	.555	.760
Online Facility (OLF)	.592	.706

The six selection criteria revealed by the preferences of the teachers are online facility, Responsiveness to problem, Advertising and publicity, safety of deposit, Number of branches of bank and lastly the Price and services charges by the bank



The Factor matrix and Rotated factor matrix is same. But the RFM contains the same information as the component matrix except that it is calculated after rotation.

Factor loading less than 0.4 have not been displayed because we asked for these to be suppressed. An accepted method of interpretation of Factor loadings is to regard as significant any variable with a

Table 5. Factor Matrix^a: Extraction Method: Principal Axis Factoring.

	Factor					
	1	2	3	4	5	6
Product Packaging	.776					
Security In Bank	.686					
Infrastructure Of Bank	.502					
Convenient Location	.487					
Cordiality Of Staff	.449					
No of ATM		.710				
Online Facility		.706				
Responsiveness To Problem		.609	.436			
Accuracy In Computation						
Price and Service Charges			.803			
No Of Branches		.432	-.486		.463	
Bank Ownership						
Safety Of Deposit				.674		
Advertising and Publicity	.523			-.576		
Parking Facility	.410				.468	

a. Attempted to extract 6 factors. More than 25 iterations required. (Convergence=.006). Extraction was terminated.

Table 6. Rotated Factor Matrix^a : Extraction Method: Principal Axis Factoring.

	Factor					
	1	2	3	4	5	6
Advertising and Publicity	.844					
Product Packaging	.611					
Cordiality Of Staff	.470					
Online Facility		.778				
No of ATM		.698				
Security In Bank	.402	-.600				
Responsiveness To Problem			.784			
Convenient Location	.423		.515			
Accuracy In Computation			.402			
Price and Service Charges				.946		
Bank Ownership						
Safety Of Deposit					.868	
Infrastructure Of Bank					.518	
No Of Branches						.803
Parking Facility						.499

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 15 iterations.

loading of 0.4 or greater as associated with the appropriate factor (Hair, Anderson, Tatham and Black, 1998).

Conclusion

The factors that significantly influence choice of bank by the teachers, in decreasing order of importance are: online services, responsiveness to problems, advertising and publicity, safety of deposit, number of branches of a bank, and service charges.

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