CHAPTER FOUR

QUANTITATIVE ANALYSIS (SURVEY STUDY)

Chapter Four: Quantitative Analysis (Survey Study)

4.1. Introduction

The idea of Activity Based Costing (ABC) came into discussion in early 1980s, till than plentitude of social scientists and professionals are contributing to the conceptual evolution and practical application of idea. But still this idea is not accepted and practiced across the economic sectors widely and fluently. First part of this study reveals that ABC is popular and practiced by manufacturing sector it is ignored by service sector inspite of significant growth as well as increase in competitiveness in this sector. This reality reflects that their prevails unawareness of ABC and its application despite of significant growth in economic activities with increase in complexities in business decisions as well as arose need for accurate cost data. Thus, one of the objectives of this research endeavor is to explore possibilities with intension to increase acceptability of ABC in service sector. For this purpose it is essential to know the present status and identify the difficulties to put Activity Based Cost accounting system in practice at service sector.

Therefore this part of the present study intends to identify the reasons and problems in practicing ABC particularly in service sector which can help to bridge the gap unfolded during the literature review by involving professionals active in the field of cost accounting. Thus, this study will help cost accountants to grasp the importance of ABC and its use in the service sector as a tool of cost management.

Hence, this part of the study focuses on collecting and analysing opinion received from the randomly selected respondents practicing accountants, owners, trustees, managers, research scholar executives, professionals, academicians, post graduate students with the related discipline of accounting and cost accounting as well as members of professional bodies through a survey method i.e. quantitative method. Quantitative method is generally used when the problem at hand is concerned with questions, concepts and attributes and tests the relationship between the answers to questions and tests a specific theory when factual data is available along with supporting evidence (Creswell, 1998).

In order to obtain views of practicing accountants, owners, trustees, managers, research scholar executives, professionals, academicians, post graduate students with the related discipline of accounting and cost accounting as well as members of professional bodies on practices, awareness and practicability of objective and effectiveness of activity based costing system as a tool of cost management was collected through administration of Structured Instrument.

Therefor this part of study intends to fill the gap between idea and practice of Activity Based Costing in service sector to accomplish the main objective to carry out a systematic study of role of Activity Based Costing in cost management as well as business decisions. The research design followed has been essentially descriptive and explorative one in nature considering objectives identified. This chapter is divided into two sections, section one explains the methodology and second section deals with data analysis.

A Structured instrument was developed to study Operationalisation of Activity Based Costing System as an effective tool for cost management in service sector. The questionnaire was canvassed to 200 target respondent keeping in view their willingness to participate in the research, of which 145 responded. The survey analysed the behaviour of all the important variables on activity based costing as an effective tool for cost management in service sector organisation.

The questionnaire was designed in such a way that it would project the exact data required by the researcher. Multi-item measures were used to provide stronger construct validity as single item measure may not address all of the aspects of the multidimensional constructs. It is believed that more questions under the same construct would enable examination of the construct from different angles (Foster & Swenson, 1997). This study uses a Likert Scale with equal intervals between response categories like opinionnaire in the literature, comprise close ended questions.

The questionnaire in this study contained 15 questions with sub questions make total 88 questions. All these questions are classified under two parts. Part – I was based on evaluation of the awareness and practicability of objective and effectiveness of cost

accounting system, traditional costing system and activity based costing system. Evaluation of all important variables on activity based costing as an effective tool for cost management in service sector organisation. Part – II elicits the Personal Profile (demographic details) of the respondents.

The pilot study consisted of presenting a set of questionnaire comprising of individual questions with a view of collecting the primary data on practices, awareness and practicability of objective and effectiveness of activity based costing system as a tool of cost management. The pilot study was done by administering a pre-test questionnaire to group of practicing selected accountants, owners, trustees, managers, research scholar, executives, professionals and academicians, who were directly or indirectly dealing with cost management. The group taking part in the study were informed about the objective of the questionnaire and were asked to evaluate the questionnaire keeping in view the research objectives and were permitted to make necessary changes in the questionnaire wherever required. The questionnaire was then edited accordingly. The pre-test reframed questionnaire was then presented to a group of three experts who examined and suggested changes. A pilot study of the questionnaire was conducted in order to bring about evaluation of all important variables on activity based costing as an effective tool for cost management in service sector organisation according to the reference by Smith (2003).

The last draft of the questionnaire was then finalized as per the suggestions of the pilot study and the advisors and after that questionnaires were prepared to be introduced to the respondents in the exploration (Appendix 3).

4.2.1 Structure of the Questionnaire

Structurally the questionnaire in this study contained 15 questions with sub questions make total 88 questions. All these questions are classified under two parts. Part – I contains question number 1 to 8. Part – II elicits the Personal Profile (demographic details) of the respondents contains question number 9 to 15. Structure of the Questionnaire along with the review of literature which was considered useful & relevant in the drafting of the Questionnaire too has been outlined as below:

In the first Question regarding evaluation of Cost Accounting System, first four statements are related to designing of cost accounting system and fifth statement is related to the objective of keeping cost accounting system where nine sub statements are provided to the respondents. The answers for this question ranged from 'strongly agree' to 'strongly disagree' on five point scale, Strongly Agree = 5, Agree = 4, Indifferent = 3, Disagree = 2 and Strongly Disagree = 1. Most of the statements incorporated in these questions were derived from Horgren, C.T. (1995) and Cooper and Slagmulder (1998), Brignall,S. (1997). These statements are related to third objective of the study i.e. the objectivity of Cost data and its use in Cost Management practices in Service sector.

In the second Question regarding comparative evaluation of Traditional Costing System (TCS) and Activity Based Costing System (ABC), 1- 12 statements related to basics and accuracy of Traditional Costing System (TCS) and Activity Based Costing System (ABC) were asked. Emphasis is on to measure the accuracy of the costing information provided by Traditional Costing System (TCS) and Activity Based Costing System (ABC). This data expresses if the costing information generated by the system used currently by the company was accurate or not. These statements are scaled from 1 to 5, Strongly Agree = 5, Agree = 4, Indifferent = 3, Disagree = 2 and Strongly Disagree = 1 and reflected the degree of information accuracy provided by ABC or traditional system. Most of the statements incorporated in these questions were derived from Cooper and Kaplan (1988), Cooper (1988), Brignall (1997), Shank and Govlndarajan (1988), Dierks and Cokins (2001), Turney (1996), Gunasekaran, & Singh, (1999), Innes and Mitchell (1995 and 1998) and Gupta and Galloway (2003). These statements are related to fourth objective of the study to ensure the objectivities of present traditional volume based indirect costs allocation practises followed by service organisations and expected enhancement with the Activity Based Costing.

In the third Question regarding comparative evaluation of Application of Traditional Costing System (TCS) and Activity Based Costing System (ABC), twenty statements related to Application of Traditional Costing System (TCS) and Activity Based Costing System are provided. The constructs identified were further divided into various functions i) Cost Object Costing ii) production related functions iii) customer

related functions and iv) managerial decision making. These statements are scaled from 1 to 5, Excellent = 5, Good = 4, Average = 3, Fair = 2 and Poor = 1. Most of the statements incorporated in these questions were derived from Cooper, R. and Kaplan, R. S.,(1991), Turney (1996), Mowen (2000), Banker et al (2008), Cokins (2001), Gunasekaran, & Singh, (1999), Akyol, Tuncel, and MiracBayhan (2005), Chongruksut (2002) and others from Innes et al. (2000). These statements are related to fifth objective of the study to gauge the relationship of indirect costs with reference to use of cost data in decision making of select service sector organisations.

In the fourth questions regarding evaluation of Service Sector, 1 to 10 statements were provided for evaluation of service sector and need of refined costing system in service sector, of which statement 1 to 3 related to contribution of service sector in the development of country, 4 and 6 to 10 related to competitive market, lowering cost, changing environment, refined costing system and customer costing system where as statement 5 related with factor affecting improvement of profitability of service sector. These statements were scaled from 1 to 5, Strongly Agree = 5, Agree = 4, Indifferent = 3, Disagree = 2 and Strongly Disagree = 1. Most of the statements incorporated in these questions were derived from Cooper, R. and Kaplan, R. S.,(1991), Harper, W. M. (1995), Hussain, M. M. and Gunasekaran, A. (2001) and generated by researcher in consultation with experts.

In the fifth question respondents were asked about use of Costing Method in Service Sector. In this question four options i.e. Job Costing or Process Costing Method or Hybrid Costing Method or Any Other were given to put a mark. This question is based on first two objectives of the study which are:

1. to expound the theoretical understanding of cost structure as well as different approaches to the measurement of Costs in service sector organisations and
2. to document the cost ascertainment practises of service sector organisations.

In the sixth question respondents were asked about System for Allocating Overheads in Service Sector Organisation. In this question five options i.e. Traditional budgeting using predetermined cost drivers or Standard costing and variance analysis or Actual

cost reviews or Activity Based Costing System or Any other were given to put a mark. This question is based on first two objectives of the study which are:

1. to expound the theoretical understanding of cost structure as well as different approaches to the measurement of Costs in service sector organisations and
2. to document the cost ascertainment practises of select service sector Organisations.

In the seventh question, Need of Activity Based Costing System in Service Sector was evaluated. In this Question 11 statements related to need of activity based costing in service sector were asked. These statements are scaled from 1 to 5, Strongly Agree = 5, Agree = 4, Indifferent = 3, Disagree = 2 and Strongly Disagree = 1. Most of the statements incorporated in these questions were derived from Kock (1995), Turney (1996), Cooper, R, (Spring 1987), Cooper, R. and Kaplan, R. S.,(1991) Mowen (2000) Cokins (2001) Gunasekaran, & Singh, (1999); Cooper, (2000) Innes and Mitchell (1995 and 1998), Turney 1996, Cooper and Kaplan 1998 and 1999, Cokins (1996 and 2001) Gupta and Galloway (2003) and Hussain, M. M. and Gunasekaran, A. (2001). These statements are related to third objective of the study i.e. to study the objectivity of Cost data and its use in Cost Management practices in Service sector.

In the eighth question, five overall evaluation statements were asked to validate instrument. These statements are scaled from 1 to 5, excellent = 5, good = 4, average = 3, fair = 2 and poor = 1.

Question number nine or part two provides the demographic details of the respondent. It gives the information regarding the following: Name (optional), Age (optional), Education, Occupation Specialization/Department/Expertise, Work Experience and Grading of understanding of the respondent about cost accounting system on scale of 1 to 5 (where 1 is the lowest and 5 is the Highest).

The non-probability sampling approach was put to use based on purposive sampling method for drawing of sampling units. Views of professionals like CA, CMA, CS etc., and representatives from various industries, owners, trustee and academicians are included in the research.To circulate questionnaires wherever it was possible a

personal approach was made to reach the respondents. In some cases questionnaires were also sent to the respondents by post and also e-mail. In response a hundred and forty five questionnaires were received back from the respondents, out of which hundred and twenty nine were considered for further analysis. The answers given by the respondents for each question as well as sub question were quantified in categories and then computed in table form to illustrate the responses.

4.2.2. Data Analysis Techniques

The questionnaires that were completed in all respects were only considered for the analysis. The raw data collected was further converted into numerical data, coded and fed into a computer for analysis and storage. It was stored in the form of a data file using MS Excel. The data collected was coded and subjected to statistical analysis. Consultation with the expert and available statistical package for social sciences (SPSS version 15) software was used for data analysis. The statistical analysis of the variables in the study has been performed using the following tests:

- ✓ Descriptive Statistics,
- ✓ Cronbach alpha
- ✓ Factorial Analysis
- ✓ Pearson's Chi-square and
- ✓ Wilcoxon Signed Test

Descriptive Statistics

Descriptive statistics are used to describe the basic features of the data in a study, to simply describe what is or what the data shows and to present quantitative descriptions in a manageable form. They provide simple summaries about the sample and the measures. Together with simple graphics analysis, they form the basis of virtually every quantitative analysis of data. Descriptive statistics helps to simplify large amounts of data in a sensible way.

In this study, frequency distribution, percentages, graphs, Mean and Standard Deviation used for better understanding and presentation of raw data.

Cronbach alpha

Instrument reliability was tested by evaluating the Cronbach alpha coefficient, which is the usual method accepted by researchers (Smith, 2003). Coefficient alpha indicates the degree of internal consistency among items in the questionnaire. Further, it also suggests how well items in a set are positively correlated to each other (Sekaran, 2003). Although the range of Cronbach alpha is from 0 to 1, values closer to 1 are accepted to have greater internal consistency. Any value above 0.6 is considered to be good and lesser than that as poor (Nunnally, 1978).

In this present study, Consultation with the expert and available software data analyzed and the reliability was calculated. Cronbach's alpha was calculated to find the reliability factor for all the main research variables.

Factor Analysis

Factor Analysis summarizes the information contained in a large number of variables into smaller subsets called factors. Factor analysis is designed for interval data, although it can also be used for ordinal data. In many real life problems, the number of independent variables used in predicting a response variable will be too many. The difficulties in having too many independent variables are as increased time in data collection, too much expenditure in data collection, difficulty in making inferences and presence of redundant independent variables. These can be avoided using factor analysis. Factor analysis aims at 'grouping' the original input variables into 'factors' that underlie the input variables. Theoretically, the total numbers of factors are equal to the total number of input variables. But, after performing factor analysis, the total number of factors in the study can be 'reduced' by dropping the insignificant factors based on certain criterion. Thus, it is commonly used as a data reduction or structure detection method.

This study uses Principal component analysis which provides 'unique solution', so as to reconstruct data from the results. It considers the 'total' variance from the variables, that in order that the generated solution will include factors as many in number as the variables although, the criteria for retention will not be met. This method was used to investigate the reasons for using cost accounting system

(Question 1). Further, it is used for Application of Activity Based Costing System (Question 3), Significance of Service Sector and Need for Redefined Cost Accounting System (Question 4) and Need of Activity Based Costing System in Service Sector (Question 7).

Factor loadings were used to measure correlation between criteria and the factors. A factor loading close to 1 indicates a strong correlation between a criteria and factor, while a loading closer to zero indicated weak correlation. The factors are rotated with the used of Varimax with Kaiser Normalization rotation method. Factors were extracted using Principle Component Analysis (PCA) method and only those factors were considered for interpretation the values of which are greater than 0.6.

Pearson's Chi-square

The chi-square test is an important test amongst the several tests of significance. The Chi Square statistic is commonly used for testing relationships on categorical variables. The null hypothesis states that no relationship exists on these categorical variables in the population; they are independent. Chi-square is a statistical measure used in the context of sampling analysis for comparing a variance to a theoretical variance. As a non-parametric test, it "can be used to determine if categorical data shows dependency or the two classifications are independent. It can also be used to make comparisons between theoretical populations and actual data when categories are used." (Neil R. Ullman)

As a test of independence, Chi-square test enables to explain whether or not two attributes are associated. It may, however, be stated here that Chi-square is not a measure of the degree of relationship or the form of relationship between two attributes, but is simply a technique of judging the significance of such association or relationship between two attributes. To know statistical significance of differences in the observed and expected frequencies the p value were observed. P value less than 0.05 was considered significant.

In this study chi-square test is used to determine relationship among various demographic qualities of respondents and variables like the respondents

understanding about cost accounting system, costing method used in service sector and current system of overheads allocation.

Wilcoxon Signed Test

The Wilcoxon sign test is a statistical comparison of average of two dependent samples. The Wilcoxon sign test works with metric (interval or ratio) data that is not multivariate normal, or with ranked/ordinal data. Generally, it is the non-parametric alternative to the dependent samples t-test. The Wilcoxon sign test tests the null hypothesis that the average signed rank of two dependent samples is zero. The Wilcoxon signed rank test has the null hypothesis that both samples are from the same population. The Wilcoxon test creates a pooled ranking of all observed differences between the two dependent measurements. It uses the standard normal distributed z-value to test of significance. It is also used for after (new) and before (old) treatment type study.

In this study Wilcoxon signed test is used for technical factors related with Traditional Costing System and Activity Based Costing System (Question 2). As a part of the test, a comparison of the information provided by the Traditional Costing System (old) and the Activity Based Costing System (new) was done by putting forth the same question to the individual respondents. The main objective of this question was to assess how effective the ABC was in relation to the TCS. The answers obtained were analysed using the Wilcoxan Signed Test. These factors were evaluated on a 5-Likert scale ranging from Strongly Agree = 5 to Strongly Disagree = 1.

4.3. Data Analysis

4.3.1 Reliability of the Structured Questionnaire

Reliability refers to the extent to which a scale produces consistent results if repeated measurements are made on the characteristics. One of the popular approaches for assessing reliability includes the Internal Consistency Reliability method which is used to assess the reliability of a summated scale where several items are summed to form a total score. Instrument reliability was tested by evaluating the Cronbach alpha coefficient, which is the usual method accepted by researchers (Smith, 2003).

Coefficient alpha indicates the degree of internal consistency among items in the questionnaire. Further, it also suggests how well items in a set are positively correlated to each other (Sekaran, 2003). Although the range of Cronbach alpha is from 0 to 1, values closer to 1 are accepted to have greater internal consistency. Any value above 0.6 is considered to be good and lesser than that as poor (Nunnally, 1978). An overview of all the Cronbach alpha coefficients is illustrated in table:

Reliability Statistics

Table 4.1

Summary of Indicators and Reliability Alpha Score

Sr. No.	**Grouped Indicator Items**	**No. of Item**	**Cronbach Reliability Alpha Coefficient**
01	Evaluation of Cost Accounting System	13	0.858
02	Comparative Evaluation of Traditional Costing System	12	0.907
03	Comparative Evaluation of Activity Based Costing System	12	0.855
04	Comparative Evaluation of application of Traditional Costing System	20	0.960
05	Comparative Evaluation of application of Activity Based Costing System	20	0.876
06	Evaluation of Significance of the Service Sector & need of redefined cost accounting system	13	0.771
07	Evaluation of need of Activity Based Costing System in Service Sector	11	0.843
08	Overall	101	0.914

The reliability tests Cronbach alpha coefficient was run to determine how strongly the attributes/ opinion were related to each other and to the composite score. All dimensions of the questionnaire related with measuring opinion were tested and the Cronbach's alpha ranged from 0.771 to 0.960 which really shows internal reliability of the scale. The reliability of a scale as measured by coefficient alpha reflects the degree of cohesiveness among the scale items (Naresh K. Malhotra, 2007 and Jum C. Nunnally, 1981). Testing the scale for reliability revealed that for all the above

statements Cronbach alpha coefficient is of 0.914. Therefore, this scale is considered reliable and it is capable enough for further data processing.

4.3.2 Validity of the Structured Questionnaire

In this empirical investigation, while undertaking this research study, the structured questionnaire was given to respondents and results of measurement of the criterion wise validity and overall means score is given in the tabular form. It had total number of 14 questions inclusive of Demographic Variables (09 criteria); General Variables of Respondents' Opinion about Activity Based Costing: An effective tool for Cost Management – A Study of Selected Service Sector Organisation (criteria grouped under Q. No. 01 to Q. No. 07); and also their overall opinion respectively (criteria under Q. No.08) (Naresh K. Malhotra, 2007 and Parasuraman et. al., 1991).

Table 4.2

Table Showing Comparison of Mean Scores of Extent of Respondents' Opinion on Activity Based Costing: An effective tool for Cost Management - A Study of Selected Service Sector Organisation

Respondent's Opinion with respect to Criteria		**Respondent's Opinion with respect to Criteria**		**Difference in Mean Count (Column 2-Column4)**
Rating Scale 1 to 5				
(Q-1 to Q- 7)	Mean Score (Rank)	(Q-8-1 to Q-8-5)	Mean Score (Rank)	
1	2	3	4	5
Evaluation of Cost Accounting System	4.41 (2)	The accuracy of Cost accounting System	4.63 (1)	-0.22
Comparative Evaluation of Traditional Costing System	1.75 (4)	The accuracy of Traditional costing system	1.80 (5)	-0.05
Comparative Evaluation of Activity Based Costing System	4.54 (1)	The accuracy of Activity based costing system as a Tool of Cost Management	4.54 (2)	0.00
Significance of Service Sector and need of refined costing system	4.31 (3)	Role played by Service Sector in the development of economy	4.45 (3)	-0.14
Need of Activity Based Costing System in Service Sector	4.41 (2)	The accuracy of Activity based Costing as specific approach of refining costing system in Service Sector	4.43 (4)	-0.02
Overall Average	3.84		3.97	-0.13

Convergent Validity has been measured by comparing mean scores of scale with other measures of the same construct. It becomes clear from the table that the means of same construct were measured and less variation was observed in the given question categories and average score was found to be as similar. Majority of the Respondent's were found as placed between 'Strongly Disagree' to 'Strongly Agree Category'.

4.3.3 Respondents' Profile

The main aim of this survey was to collect the views of practising accountants, company directors, auditors, members of the professional bodies and managers with regard to the utility of information generated by Activity Based Costing. Therefore, these questionnaires were circulated to the respondents from the wide range of different age groups, qualifications, experience etc. The present section presents the overall profile of the respondents in terms of their age, educational background, professional qualification, their employment and work experience.

All the respondents were divided in three age groups as specified in table number 4.3

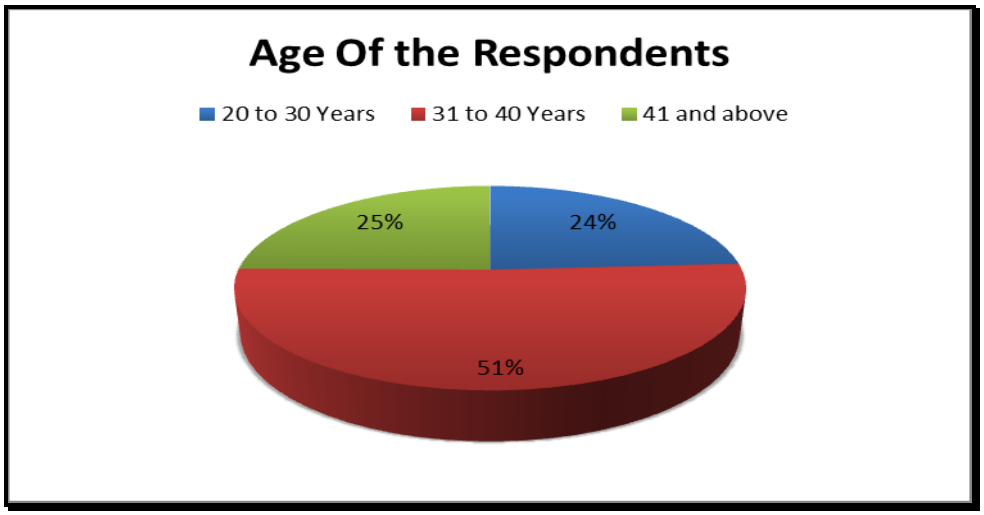
Table 4.3

Age of the Respondent

Age Groups in years		
	Frequency	**Percent**
20 to 30 Years	31	24.03
31 to 40 Years	66	51.16
41 and above	32	24.81
	129	100

From the above graph and table, it is observed that 51% of the respondents are belonging to the age group of 31 to 40 years. 25% of the respondents are above 41 years and 24% of the respondents are in between the group of 20 to 30 years. The same is presented here with the help of pie chart as shown in Graph number 4.1:

Graph 4.1



The mix of respondents indicates that young respondents having age 40 years or less makes about 75% of the total respondents. This indicates that respondents with latest developments and new techniques and technology are higher which can be helpful in any discussion related to new developments and latest knowledge.

In order to obtain views of practicing accountants, owners, trustees, managers, research scholar executives, professionals, academicians, post graduate students with the related discipline of accounting and cost accounting were selected. Educational qualifications of the respondents have been divided into two groups: respondents holding graduate degrees [Table 4.4] post graduate degree [Table 4.5] and respondents holding specialised higher degrees [Table 4.6] professional qualification [Table 4.7].

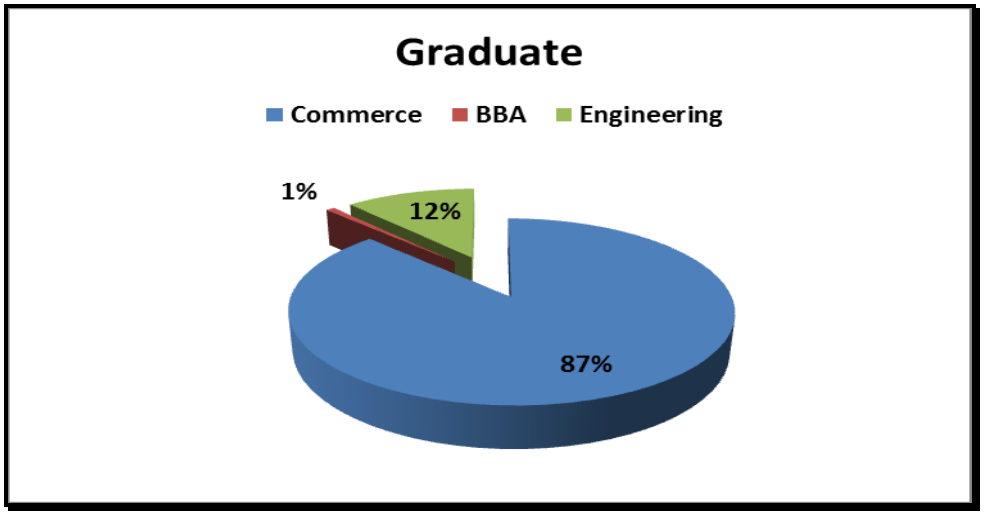
Table 4.4

Education Qualification of the Respondents

Graduate		
	Frequency	**Percent**
Commerce	113	87.60
BBA	1	0.78
Engineering	15	11.63
	129	100

From the above table, it is observed that 87% of the respondents are commerce graduate and 12% are from the group of engineering. The same is presented in the pie chart graph number 4.2

Graph 4.2



The mix of respondents indicates that young respondents having commerce graduation makes about 87% of the total respondents. This indicates that respondents with commerce background can be helpful in any discussion related to new developments and knowledge in the area of commerce.

Table 4.5

Education Qualification (Post Graduate) of the Respondents

Post – Graduate Bifurcation		
	Frequency	**Percent**
Accounting & Finance	91	70.54
Commerce & Management	11	8.53
Any Other	1	0.78

From the above table, it is inferred that 70% of the respondents are post graduated with specialization in Accounting and Finance followed by commerce and management. The knowledge of the respondents with accounting and finance background can be helpful in any discussion related to new developments and latest and detail knowledge in the area of accounting in general and cost accounting in particular.

Table 4.6

Education Qualification (Ph.D) of the Respondents

Post – Graduate Bifurcation		
	Frequency	**Percent**
Commerce	18	13.95
Any Other	2	1.55

From the above table, it is inferred that 14% of the respondents are holding Ph.D. degree in commerce.

Table 4.7

Professional Qualification of the Respondents

Professional Degree	**Frequency**	**Percent**
ICWA	51	39.53
CA	28	21.71
CS	7	5.43
CIMA	2	1.55

Among all the respondents with Professional Qualifications, 40% of the respondents hold ICWA professional degree followed by CA, CS and CIMA. The same is shown in graph number 4.3.

Graph 4.3

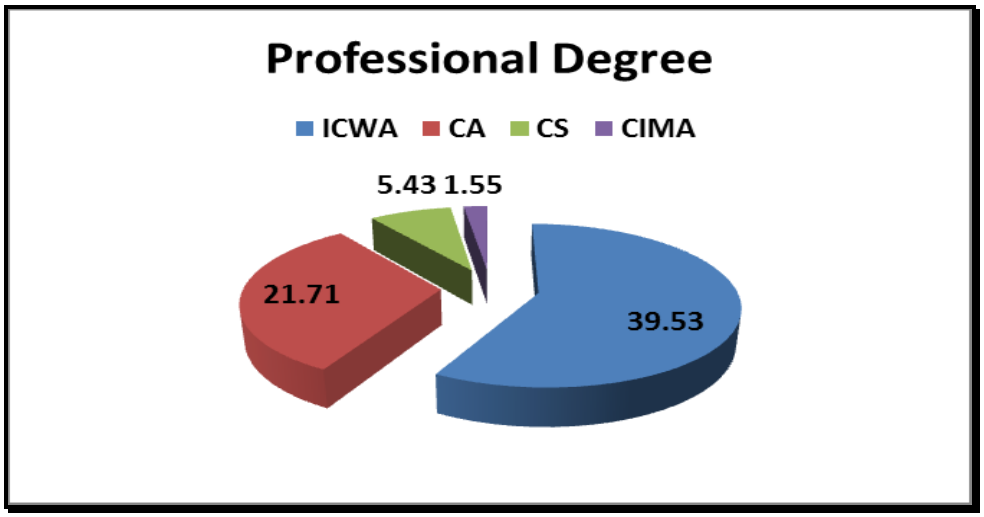


Table 4.8

Occupation Wise Distribution of Respondents

Occupation	Frequency	Percent
Self Employed	23	17.83
Service	106	82.17

From the above table it is evident that 82% of the respondents are belonging to service class.

Table 4.9
Specialization of the Respondents

Specialization/ Department/ Expertise	Frequency	Percent
Accounts	34	26.36
Taxation	7	5.42
Costing	60	46.51
Production	6	4.65
Finance	5	3.87

46% of the respondents are having specialisation in the area of Costing followed by Accounts, Taxation, Production and Finance. This implies that their opinion can be very useful to understand the state of Activity Based Costing practices followed in general and in service sector in particular. The same is shown in graph number 4.4.

Graph No. 4.4

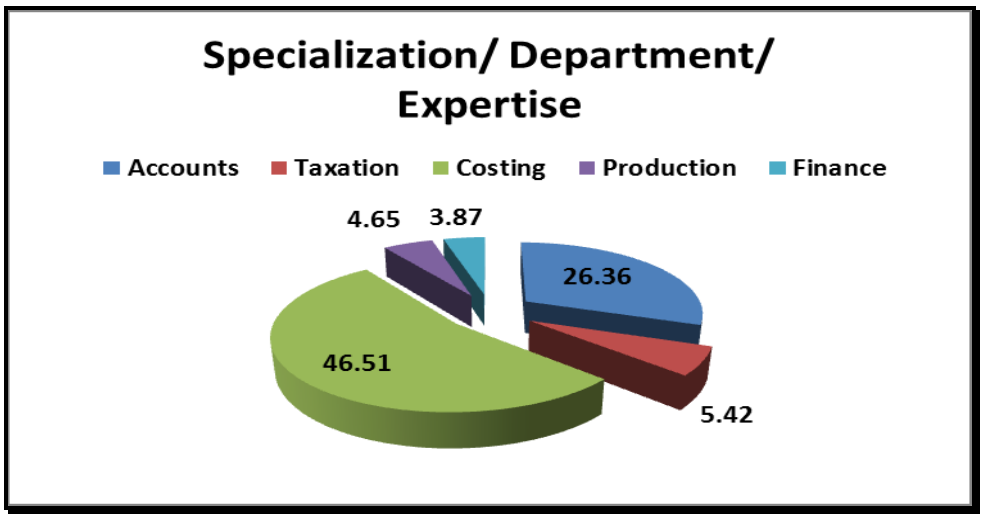


Table 4.10

Work Experience & Occupation of the Respondents

Work Experience	Occupation					
	Self Employed		Service		Total	
	Count	% within Occupation	Count	% within Occupation	Count	% within Occupation
Less than 10 Years	13	56.52	46	43.40	59	45.74
10 to 20 Years	7	30.43	38	35.85	45	34.88
More than 20	3	13.04	22	20.75	25	19.38
Total	23	100	106	100	129	100

59 of the respondents have experience of less than 10 year, 45 of the respondents have experience of 10 to 20 years and 25 of the respondents have more than 20 years' experience. In the case of occupation, 106 of the respondents are service sector employees and 23 are self-employed. More than 70 respondents are having experience of more than 10 years this can be useful to know about awareness and practicability of objective and effectiveness of activity based costing system as a tool of cost management in general and in service sector in particular. The same is shown in the graph number 4.5.

Graph No. 4.5

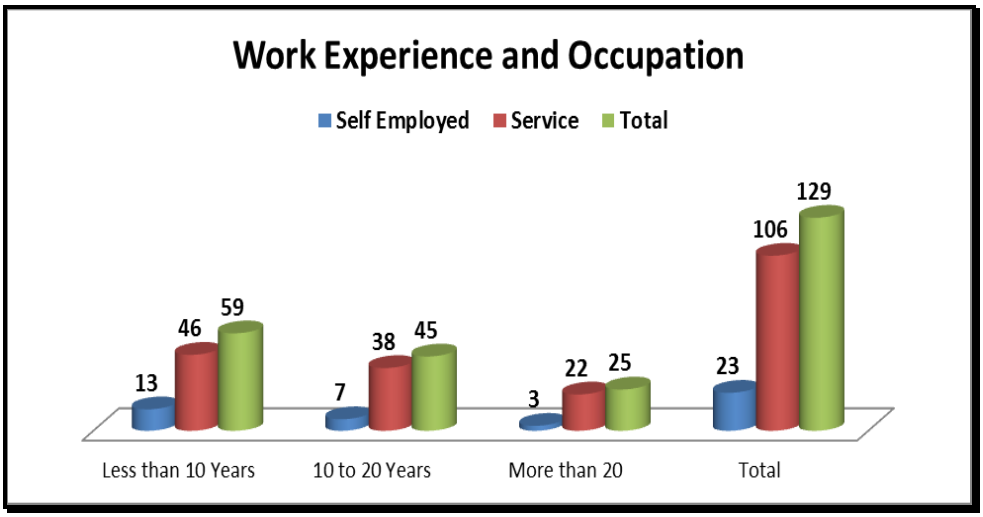


Table 4.11

Respondents' Understanding of Cost Accounting System

Cost Accounting Knowledge	Frequency	Percent
Lowest	2	1.55
Neutral	35	27.13
High	52	40.31
Highest	40	31.01
Total	129	100

Majority of the respondents hold high and highest understanding about Cost Accounting system (71.32 percent). This implies that respondents are aware about the latest knowledge and developments in the area of cost accounting.

4.3.4. Descriptive Analysis

Descriptive statistics is a general means to explore the data collected and summarized in the form of graphs and tables. This is usually the initial procedure undertaken in order to observe and obtain a general idea about the data. Other examples also include frequency distributions. The following section presents the descriptive statistics for each variable in this study.

Evaluation of Cost Accounting System (CAS):

In this question respondents were asked to answer 13 statements regarding need of Cost Accounting System. These statements were evaluated on a 5-Likert scale ranging from Strongly Agree = 5 to Strongly Disagree = 1.

Table 4.12
Evaluation of Cost Accounting System (CAS)

Selected criteria	N	Mean	SD
CAS is needed To facilitate control	129	4.65	0.54
CAS is needed To determine cost	129	4.58	0.62
CAS should differentiate cost for different purposes	129	4.52	0.61
CAS is needed To measure the efficiency of internal operating processes	129	4.50	0.66
CAS designed as per the requirements of the organisation	129	4.47	0.61
CAS is needed To facilitate planning	129	4.47	0.67
CAS is needed To develop competitive strategies	129	4.44	0.71
CAS is needed To improve the efficiency of internal operating processes	129	4.40	0.64
CAS measures the efficiency by which input resources were converted to output	129	4.37	0.57
CAS is needed To provide basis for valuing manufactured inventory	129	4.37	0.73
CAS should be based on cause and effect relationship	129	4.24	0.74
CAS is needed To provide basis for valuing Cost of goods sold for external reporting	129	4.20	0.74
CAS is needed To help in making day- to- day Decision	129	4.17	0.88

Out of the 13 items considered as evaluation of the Cost Accounting System i.e. what are the objectives Cost Accounting System, 'Cost Accounting System is needed to facilitate control (mean value = 4.65) was cited as the greatest objective of implementing Cost Accounting System, followed by 'CAS is needed to determine cost' (mean value = 4.58) and 'CAS should differentiate cost for different purposes information' (mean value = 4.52), 'CAS is needed to measure the efficiency of internal operating processes' (mean value = 4.50), as well as 'CAS designed as per the requirements of the organisation' and 'CAS is needed to facilitate planning'. (mean value = 4.47) were also cited.

It is also evident from the results that individual respondents had opined that 'CAS is needed To develop competitive strategies' (mean value = 4.44), 'CAS is needed To improve the efficiency of internal operating processes' (mean value = 4.40), 'CAS

measures the efficiency by which input resources were converted to output' and 'CAS is needed To provide basis for valuing manufactured inventory' (mean value = 4.37), 'CAS should be based on cause and effect relationship' (mean value = 4.24), 'CAS is needed To provide basis for valuing Cost of goods sold for external reporting' (mean value = 4.20) and 'CAS is needed To help in making day- to- day Decision' (mean value = 4.17).

Almost all the respondents responded on average four plus but 'CAS is needed to facilitate control to determine cost' and 'CAS should differentiate cost for different purposes' were given more importance. The above presented result provides evidence that sound cost accounting system is needed in the organisation to help the management for taking various managerial decisions.

Comparative Evaluation of Traditional Costing System (TCS) and Activity Based Costing System (ABC)

In this question respondents were asked to answer 12 comparative statements regarding Technical elements of Costing System i.e. Traditional Costing System and Activity Based Costing System. These statements were evaluated on a 5-Likert scale ranging from Strongly Agree = 5 to Strongly Disagree = 1.

Table 4.13

Comparative Evaluation of Traditional Costing System (TCS) and Activity Based Costing System (ABC)

Selected criteria	N	TCS		ABC	
		Mean	SD	Mean	SD
Increases accuracy of cost allocation with the help of Cost Driver	129	1.55	0.73	4.81	0.50
Greater cost efficiency	129	1.64	0.71	4.70	0.54
Provides accurate cost information in case of increased overheads	129	1.74	0.73	4.67	0.53
Suitable for cost control	129	1.74	0.62	4.61	0.49
Objectively assigns costs based on cause-and-effect relationships	129	1.88	0.63	4.53	0.72
Shows More realistic cost behavior	129	1.86	0.62	4.53	0.64
Separates Profitable and non-profitable activities	129	1.72	0.70	4.48	0.70
Controls costs based on tangible activities	129	1.78	0.74	4.46	0.75
Separates controllable and uncontrollable cost	129	1.65	0.67	4.45	0.61
Reflects cost actually consumed by cost object	129	1.90	0.72	4.44	0.56
Provides fact-based insight into the spending on cost object	129	1.83	0.76	4.43	0.54
Provides fact-based insight into profitability of cost object	129	1.72	0.72	4.37	0.66

Analysis from the view point of ABC System: Out of the 12 items considered as comparative evaluation of the Traditional Costing System and Activity Based Costing System, 'Costing System increases accuracy of cost allocation with the help of Cost Driver' (ABC Mean = 4.81 & TCS Mean = 1.55) was considered as important factor by respondents. Followed by 'Cost Accounting System should provide greater cost efficiency' (ABC Mean = 4.70 & TCS Mean = 1.64), 'CAS provides accurate cost information in case of increased overheads' (ABC Mean = 4.67 & TCS Mean = 1.74), 'CAS is suitable for cost control' (ABC Mean = 4.61 & TCS Mean = 1.74), 'CAS

objectively assigns costs based on cause-and-effect relationships' (ABC Mean = 4.53 & TCS Mean = 1.88), 'CAS shows More realistic cost behavior'(ABC Mean = 4.53 & TCS Mean = 1.86), 'CAS separates Profitable and non-profitable activities'(ABC Mean = 4.48 & TCS Mean = 1.72), 'CAS controls costs based on tangible activities'(ABC Mean = 4.46 & TCS Mean = 1.78), 'CAS separates controllable and uncontrollable cost'(ABC Mean = 4.45 & TCS Mean = 1.65), 'CAS reflects cost actually consumed by cost object'(ABC Mean = 4.44 & TCS Mean = 1.90), 'CAS provides fact-based insight into the spending on cost object'(ABC Mean = 4.43 & TCS Mean = 1.83) 'CAS provides fact-based insight into profitability of cost object' (ABC Mean = 4.37 & TCS Mean = 1.72).

Almost all the respondents criticized Traditional Costing System as, on an average score is less than 2 whereas almost all the respondents responded on average four and above for Activity Based Costing System but, Activity Based Costing System Increases accuracy of cost allocation with the help of Cost Driver provide greater cost efficiency, provides accurate cost information in case of increased overheads and suitable for cost control are given more weightage by respondents.

From the above table it is evident that improvement in the quality of decisions taken by the management, better cost control information, and more accurate product cost were key areas of ABC benefits. Similar results were achieved by many studies (Clarke *et al.*, 1999; Innes & Mitchell, 2000; Chongruksut, 2002; Cohen *et al.*, 2005; Yousif & Yousif, 2012 and Shafeq Hamoud Mohammed Al-Saidi, 2015).

Comparative Evaluation of Application of Traditional Costing System (TCS) and Activity Based Costing System (ABC)

In this question respondents were asked to answer 20 comparative applications of Traditional Costing System and Activity Based Costing System. These statements were evaluated on a 5-Likert scale ranging from Excellent = 5 to Poor = 1.

Table 4.14

Comparative Evaluation of Application of Traditional Costing System (TCS) and Activity Based Costing System (ABC)

Selected criteria	N	TCS		ABC	
		Mean	SD	Mean	SD
Cost Object costing	129	1.71	0.84	4.76	0.53
As a Total Quality Management tool	129	1.70	0.79	4.63	0.53
Different cost for different purposes	129	1.78	0.74	4.56	0.60
Performance Measurement	129	1.84	0.80	4.55	0.57
Identification of relevant and irrelevant cost for decision making	129	1.90	0.83	4.53	0.60
Improve Customer Value	129	1.85	0.84	4.51	0.63
Process Improvement	129	1.82	0.81	4.50	0.64
Cost Management	129	1.80	0.82	4.50	0.59
Inventory Valuation	129	1.97	0.86	4.49	0.64
Identification of non-value added activity	129	1.69	0.74	4.46	0.57
Product-mix Decisions	129	1.73	0.74	4.46	0.71
Managerial Planning	129	1.78	0.79	4.44	0.57
Pricing Policy	129	1.97	0.83	4.43	0.60
Product Re-engineering	129	1.87	0.72	4.38	0.61
Detection of Causes for Deviation from budget	129	1.86	0.86	4.38	0.60
Quality Control	129	1.98	0.77	4.37	0.69
Customer Satisfaction Analysis	129	1.90	0.77	4.35	0.75
Product Engineering	129	1.84	0.80	4.34	0.70
Decisions Outsourcing	129	1.87	0.80	4.31	0.78
Research and Development	129	1.93	0.80	4.22	0.72

Analysis from the view point of ABC System: Out of 20 criteria for comparative analysis of application of Traditional Costing System and Activity Based Costing System Cost Object Costing (ABC Mean = 4.76 & TCS Mean = 1.71) was considered as important application by majority of the respondents. Followed by As a Total

Quality Management tool (ABC Mean = 4.63 & TCS Mean = 1.70) Different cost for different purposes (ABC Mean = 4.56 & TCS Mean = 1.78), Performance Measurement (ABC Mean = 4.55 & TCS Mean = 1.84) were also considered important.

Identification of relevant and irrelevant cost for decision making (ABC Mean = 4.53 & TCS Mean = 1.90), Improve Customer Value (ABC Mean = 4.51 & TCS Mean = 1.85), Process Improvement (ABC Mean = 4.50 & TCS Mean = 1.82), Cost Management (ABC Mean = 4.50 & TCS Mean = 1.80), Inventory Valuation (ABC Mean = 4.49 & TCS Mean = 1.97), Identification of non-value added activity (ABC Mean = 4.46 & TCS Mean = 1.69), Product-mix Decisions (ABC Mean = 4.46 & TCS Mean = 1.73) were also considered important. Followed by Managerial Planning, Pricing Policy, Product Re-engineering, Detection of Causes for Deviation from budget, Quality Control, Customer Satisfaction Analysis, Product Engineering, Decisions Outsourcing and Research and Development.

Majority of the respondents responded on average four and above for Activity Based Costing System but Activity Based Costing System Cost Object costing, as a Total Quality Management tool, Different cost for different purposes, Performance Measurement are given more weightage. Almost all the respondents criticized application of Traditional Costing System as on an average score is less than 2.

Similar results reported by many studies (Clarke *et al.*, 1999; Innes & Mitchell, 2000; Chongruksut, 2002; Cohen *et al.*, 2005; Yousif & Yousif, 2012 and Shafeq Hamoud Mohammed Al-Saidi, 2015).

Evaluation of Service Sector

In this question respondents were asked ten statements on significance of service sector and need of refined costing system. These statements were evaluated on a 5-Likert scale ranging from Strongly Agree = 5 to Strongly Disagree = 1.

Table 4.15

Evaluation of Service Sector

Selected criteria	N	Mean	SD
Profitability of Service Sector improves with better understanding of the Skills and knowledge	129	4.58	0.50
Significant and growing economic activity is being observed in the Service Sector	129	4.53	0.59
Profitability of Service Sector improves with better understanding of the Customers requirements	129	4.51	0.50
Profitability of Service Sector improves with better understanding of the Innovation	129	4.45	0.54
Profitability of Service Sector improves with better understanding of the Market Condition	129	4.37	0.67
Customer Costing System is required in Service Sector due to non-uniformity in the resource used by customer	129	4.37	0.64
Profitability of Service Sector improves with better understanding of the Information Technologies	129	4.36	0.62
Service Sector needs to focus on myriad of activities performed to serve the customer	129	4.36	0.57
Changing environment has compelled Service Sector to adopt advanced Cost Management practices	129	4.24	0.61
Service Sector contributes maximum share in GDP	129	4.22	0.62
Refined Costing System is required in Service Sector due to non-uniformity in the resource consumption to serve	129	4.16	0.74
Competitive market poses at most challenges to Service Sector for competitive services	129	4.11	0.66
Lowering the “cost to serve” is a critical success factor in Service Sector	129	4.08	0.74
The share of Service Sector in generating Export Revenue is higher	129	4.02	0.71

From the above table it is evident that respondents expressed agreement with all most all the criteria for the significance of service sector in the economy and need of refined Costing System in the service sector.

The main emphasis is on 'improvement of profitability of Service Sector with better understanding of the Skills and knowledge'. Followed by 'significant and growing economic activity is being observed in the Service Sector' and 'profitability of Service Sector improves with better understanding of the customer's requirements', 'innovation and market condition'. 'Customer Costing System is required in Service Sector due to non-uniformity in the resource used by customer' is also considered important.

Costing Method in practice in Service Sector

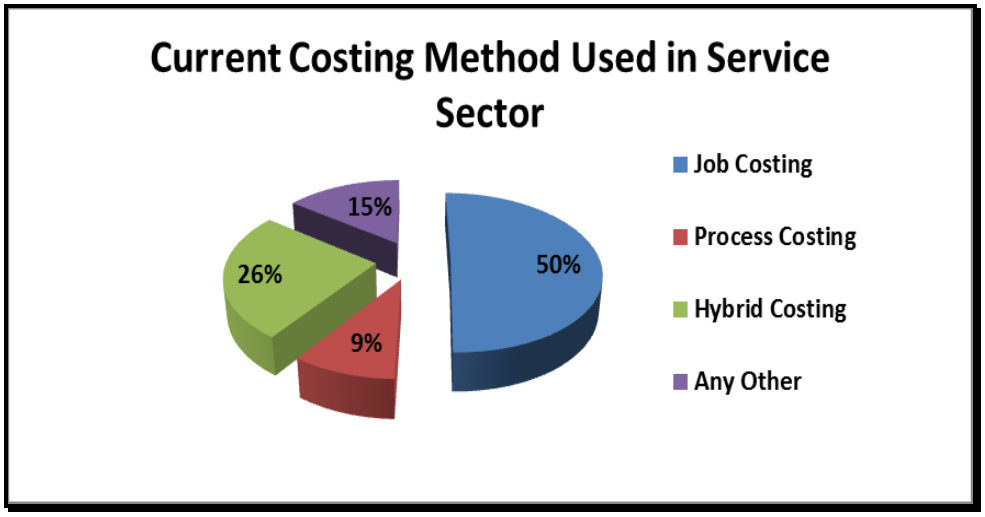
In this question respondents were asked to share their experience about current costing method used in the service sector to ascertain the cost of the service.

Table Number: 4.16

Current Costing Method Used in Service Sector

Costing Method	Frequency	Percent
Job Costing	65	50.4
Process Costing Method	12	9.3
Hybrid Costing Method	33	25.6
Any Other	19	14.7
Total	129	100.0

Graph No. 4.6



The present study reveals that different costing methods were used in service sector to determine cost. Half of the respondents (50 percent) do use Job Costing system for service costing and financial reporting purpose followed by Hybrid Costing Method and other.

Overheads allocation system in practice in Service Sector

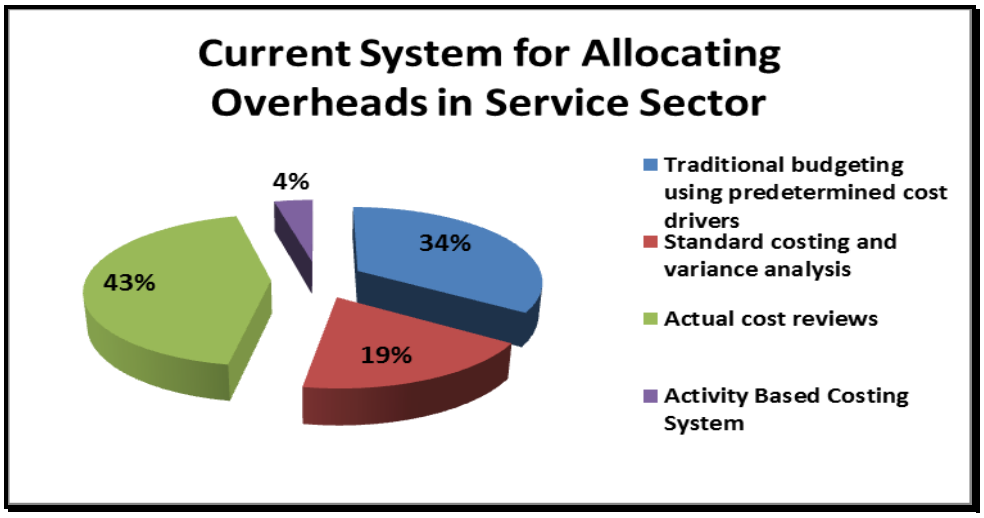
In this question respondents were asked to share their experience about current system for allocating overheads to the services rendered to ascertain the cost of the service.

Table 4.17

Current System for Allocating Overheads in Service Sector

System for Allocating Overheads	Frequency	Percent
Traditional budgeting using predetermined cost drivers	44	34.11
Standard costing and variance analysis	24	18.60
Actual cost reviews	56	43.41
Activity Based Costing System	5	3.88
Total	129	100

Graph No: 4.7



From the above table it is evident that majority of service providers are using actual cost review for allocating overheads (43 percent) followed by Traditional budgeting

using predetermined cost drivers (34 percent) very few service firms are using Activity Based Costing System for allocating overheads in the service sector. This implies that though activity based costing method is provides accurate cost measurement but it is less practiced by the service providers. This shows that in India, activity based costing system is still in infancy stage as compared to Traditional costing system used for cost calculation and reporting.

Evaluation of need of Activity Based Costing System in Service Sector

In this question respondents were asked eleven statements on need of Activity Based Costing System in service sector. These statements were evaluated on a 5-Likert scale ranging from Strongly Agree = 5 to Strongly Disagree = 1.

Table Number: 4.18

Need of Activity Based Costing System in Service Sector

Selected criteria	**N**	**Mean**	**SD**
Providing Insight into Cost Causation	129	4.29	0.71
Rational Ascertainment of Cost	129	4.34	0.59
Cost Management	129	4.43	0.56
Ensuring Cost Control	129	4.40	0.58
Cost Reduction	129	4.48	0.60
Performance Measurement	129	4.49	0.64
Process Improvement	129	4.44	0.66
Managerial Decision Making	129	4.55	0.65
Scope for Corrective Action	129	4.45	0.59
Compare Benchmarks	129	4.24	0.74
Enhance Quality of services	129	4.43	0.69

From the above table it is evident that Respondents agreed with all most all the criteria for the need of Activity Based Costing System in the service sector. The main reasons for the need of Activity Based Costing System in service sector are Managerial Decision Making, Performance Measurement, Cost Reduction and Scope of Corrective Action.

4.3.5. Factor Analysis

Factor Analysis: Reasons for Using Cost Accounting System

Table 4.19

Through KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.747
Bartlett's Test of Sphericity	Approx. Chi-Square	635.605
	Df	78
	Sig.	0.00

Interpretation: In case of the reasons for using cost accounting system the results showed that the KMO measure of sampling adequacy was 0.747, which indicated that the present data were suitable for Factor Analysis. Similarly, Bartlett's Test of Sphericity (0.00) was significant ($p<.05$), indicating sufficient correlation exists between the criteria to proceed with the Factor Analysis.

Table 4.20

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.901	37.702	37.702	4.901	37.702	37.702	2.881	22.165	22.165
2	1.341	10.314	48.016	1.341	10.314	48.016	2.660	20.459	42.623
3	1.215	9.347	57.363	1.215	9.347	57.363	1.916	14.740	57.363
4	.972	7.479	64.842						
5	.931	7.161	72.003						
6	.801	6.165	78.168						
7	.653	5.024	83.193						
8	.557	4.288	87.481						
9	.479	3.686	91.167						
10	.393	3.020	94.187						
11	.343	2.638	96.825						
12	.238	1.832	98.657						
13	.175	1.343	100.000						

Extraction Method: Principal Component Analysis.

Graph 4.8

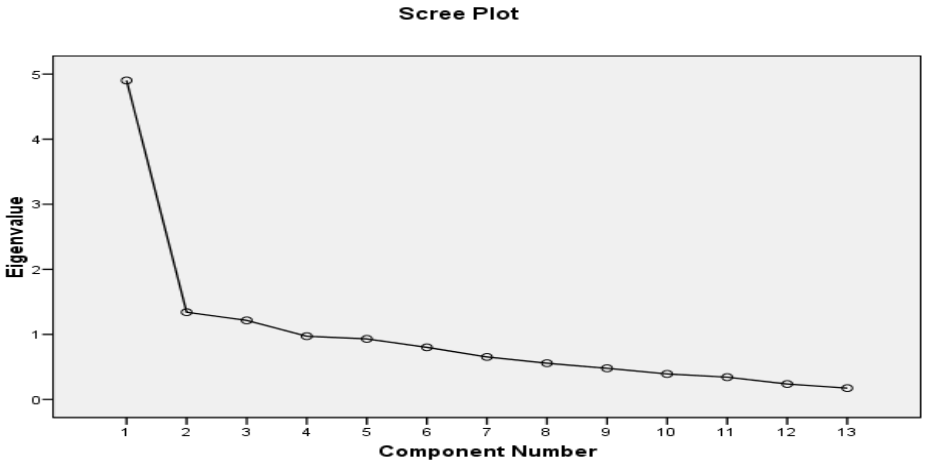


Table 4.21

Total Variance on reasons for using cost accounting system

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.901	37.702	37.702	4.901	37.702	37.702	2.881	22.165	22.165
2	1.341	10.314	48.016	1.341	10.314	48.016	2.660	20.459	42.623
3	1.215	9.347	57.363	1.215	9.347	57.363	1.916	14.740	57.363

Extraction Method: Principal Component Analysis

The first three components (factors) in the initial solution have an Eigenvalues over 1 and it accounted for about 57 per cent of the observed variations in the reasons for using cost accounting system. According to Kaiser Criterion, only the first three factors should be used because subsequent Eigenvalues are all less than 1.

Table 4.22

Communalities and Rotated Component Matrix of organisation's Reasons for using Cost Accounting System

Sr. No.	Selected Criteria	Communalities Extraction	Rotated Component		
			1	2	3
01	CAS designed as per the requirements of the organisation	.610	-.065	.767	0.133
02	CAS measures the efficiency by which input resources were converted to output	.629	.430	.666	.014
03	CAS should be based on cause and effect relationship	.659	.576	.091	.565
04	CAS should differentiate cost for different purposes	.682	.792	-.039	.229
05	CAS is needed To determine cost	.429	.139	.050	.638
06	To facilitate control	.694	-.042	.174	.814
07	To measure the efficiency of internal operating processes	.665	.166	.760	.245
08	To improve the efficiency of internal operating processes	.375	.382	.399	.263
09	To facilitate planning	.658	.784	.209	.011
10	To provide basis for valuing manufactured inventory	.725	.591	.594	-.154
11	To provide basis for valuing Cost of goods sold for external reporting	.410	.518	.348	.142
12	To help in making day- to- day Decision	.511	.452	.439	.338
13	To develop competitive strategies	.410	.319	.372	.412

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 6 iterations.

All the extracted communalities are acceptable and all criteria are fit for the factor solution as their extraction values are large enough.

Factor loadings were used to measure correlation between criteria and the factors. A factor loading close to 1 indicates a strong correlation between a criteria and factor, while a loading closer to zero indicated weak correlation. The factors are rotated with the used of Varimax with Kaiser Normalization rotation method. Principle Component Analysis (PCA) method is used for factor extraction and consider only those factors for interpretation purpose whose values are greater than 0.6.

From the above table it becomes clear that how much different criteria were correlated with three components. The criteria 1 (CAS should differentiate cost for different purposes), and criteria 9 (To facilitate planning) were more correlated with component 1. Criteria 1 (CAS designed as per the requirements of the organisation) and criteria 2 (CAS measures the efficiency by which input resources were converted to output) and criteria 7 (To measure the efficiency of internal operating processes) were more correlated with component 2. Criteria 5 (CAS is needed to determine cost) and criteria 6 (To facilitate control) were more correlated with component 3. The table below shows factors along with % of variance and factor loading items.

Factor	% of Variance	Factor Loading (Items)
1	37.702	CAS should differentiate cost for different purposes and facilitate planning
2	10.314	CAS designed as per the requirements of the organisation, measures the efficiency by which input resources were converted to output and to measure the efficiency of internal operating processes
3	9.347	CAS is needed to determine cost and to facilitate control

Cost Accounting System should differentiate cost for different purposes and be designed as per the requirements of the organization to facilitate control, these are the major objectives found for establishing good Cost Accounting System in the orgainsation.

Application of Activity Based Costing System

Table 4.23

Through KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.758
Bartlett's Test of Sphericity	Approx. Chi-Square	996.384
	Df	190
	Sig.	.000

In case of application of activity based costing system results showed that the KMO measure of sampling adequacy was 0.758, which indicated that the present data were suitable for Factor Analysis. Similarly, Bartlett's Test of sphericity (0.00) was significant ($p<.05$), indicating sufficient correlation exist between the criteria to proceed with the Factor Analysis.

Table 4.24

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.093	30.465	30.465	6.093	30.465	30.465	2.641	13.206	13.206
2	1.809	9.047	39.511	1.809	9.047	39.511	2.273	11.367	24.572
3	1.552	7.762	47.273	1.552	7.762	47.273	2.261	11.306	35.878
4	1.386	6.930	54.203	1.386	6.930	54.203	2.237	11.184	47.062
5	1.238	6.192	60.395	1.238	6.192	60.395	2.050	10.252	57.314
6	1.006	5.028	65.423	1.006	5.028	65.423	1.622	8.108	65.423
7	.933	4.667	70.090						
8	.834	4.172	74.262						
9	.731	3.656	77.918						
10	.660	3.300	81.218						
11	.637	3.185	84.403						
12	.580	2.900	87.303						
13	.512	2.559	89.862						
14	.424	2.121	91.983						
15	.359	1.793	93.776						
16	.335	1.674	95.449						
17	.284	1.419	96.868						
18	.253	1.265	98.134						
19	.224	1.122	99.256						
20	.149	.744	100.000						

Extraction Method: Principal Component Analysis.

Graph 4.9

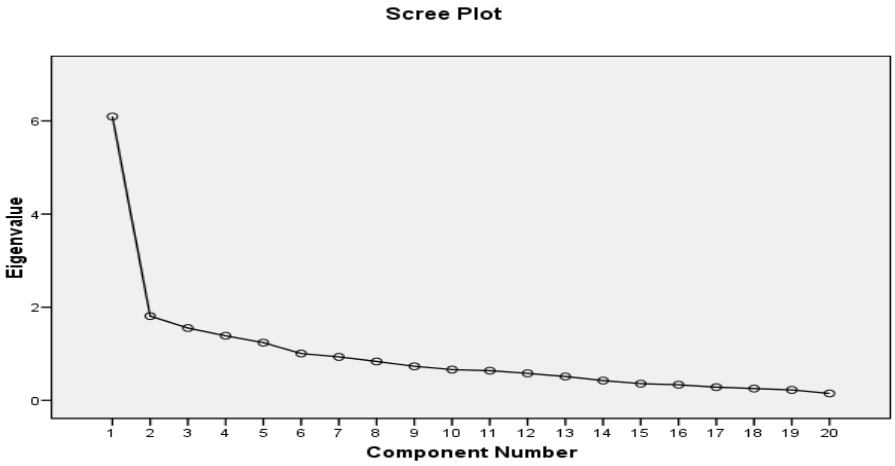


Table 4.25

Total Variance on Application of Activity Based Costing System

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.093	30.465	30.465	6.093	30.465	30.465	2.641	13.206	13.206
2	1.809	9.047	39.511	1.809	9.047	39.511	2.273	11.367	24.572
3	1.552	7.762	47.273	1.552	7.762	47.273	2.261	11.306	35.878
4	1.386	6.930	54.203	1.386	6.930	54.203	2.237	11.184	47.062
5	1.238	6.192	60.395	1.238	6.192	60.395	2.050	10.252	57.314
6	1.006	5.028	65.423	1.006	5.028	65.423	1.622	8.108	65.423

Extraction Method: Principal Component Analysis.

The first six components (factors) in the initial solution have an Eigenvalues over 1 and it accounted for about 65 per cent of the observed variations in the application of activity based costing system. According to Kaiser Criterion, only the first six factors should be used because subsequent Eigenvalues are all less than 1.

Table 4.26

Communalities and Rotated Component Matrix (a) of Application of Activity Based Costing System

Sr. No.		Communalities Extraction	Rotated Component					
			1	2	3	4	5	6
1	Cost Object costing	0.534	-0.023	0.113	0.692	0.122	-0.004	0.165
2	Product Engineering	0.786	0.173	0.093	0.130	0.066	0.848	-0.078
3	Product Re-engineering	0.788	0.091	0.082	-0.037	0.267	0.800	0.245
4	Quality Control	0.585	0.322	-0.027	0.468	0.081	-0.078	0.499
5	Inventory Valuation	0.566	0.726	0.103	0.052	0.138	0.078	-0.018
6	Process Improvement	0.756	0.154	0.330	-0.035	0.223	0.017	0.757
7	Research and Development	0.636	0.734	0.236	-0.071	0.081	0.177	0.003
8	Pricing Policy	0.731	0.347	0.733	0.239	-0.118	-0.031	0.036
9	Improve Customer Value	0.528	0.610	0.012	0.141	0.222	0.041	0.291
10	Identification of non-value added activity	0.611	-0.166	0.216	0.448	-0.022	0.140	0.562
11	Product-mix Decisions	0.607	0.433	0.165	0.380	-0.027	0.482	-0.127
12	Cost Management	0.763	0.022	0.766	0.102	0.241	0.249	0.215
13	Managerial Planning	0.714	0.188	0.040	0.143	0.801	0.087	0.088
14	Decisions Outsourcing	0.514	0.212	0.170	-0.010	0.643	0.143	0.072
15	Customer Satisfaction Analysis	0.579	0.503	0.341	0.067	0.403	0.194	0.068
16	Performance Measurement	0.709	-0.161	0.410	0.331	0.600	0.116	0.179
17	Detection of Causes for Deviation from budget	0.624	0.245	-0.008	0.562	0.493	-0.031	-0.061
18	Different cost for different purposes	0.723	0.108	0.278	0.703	0.082	0.365	0.028
19	Identification of relevant and irrelevant cost for decision making	0.699	0.489	-0.135	0.396	0.018	0.339	0.412
20	As a Total Quality Management tool	0.631	0.175	0.680	0.055	0.338	0.056	0.135

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 8 iterations.

All the extracted communalities are acceptable and all criteria are fit for the factor solution as their extraction values are large enough.

Factor loadings were used to measure correlation between criteria and the factors. A factor loading close to 1 indicates a strong correlation between a criteria and factor, while a loading closer to zero indicated weak correlation. The factors are rotated with the used of Varimax with Kaiser Normalization rotation method. Principle Component Analysis (PCA) method is used for factor extraction and consider only those factors for interpretation purpose whose values are greater than 0.6.

From the above table it becomes clear that how much different criteria were correlated with six components. The criteria 5 (Inventory Valuation), criteria 7 (Research and Development) and criteria 9 (Improve Customer Value) were more correlated with component 1. The criteria 8 (Pricing Policy) and criteria 12 (Cost Management) and criteria 20 (As a Total Quality Management tool) were more correlated with component 2. Criteria 1 (Cost Object costing) and criteria 18 (Different cost for different purposes) were more correlated with component 3. Criteria 13 (Managerial Planning) criteria 14 (Decisions Outsourcing) and criteria 16 (Performance Measurement) were more correlated with component 4 and Criteria 2 (Product Engineering) and criteria 3 (Product Re-engineering) were more correlated with component 5 where as criteria 6 (Process Improvement) was more correlated with component 6.

The table below shows factors along with % of variance and factor loading items.

Factor	% of Variance	Factor Loading (Items)
1	30.465	Inventory Valuation, Research and Development and Improve Customer Value
2	9.047	Pricing Policy, Cost Management and As a Total Quality Management tool
3	7.762	Cost Object costing and Different cost for different purposes
4	6.930	Managerial Planning, Decisions Outsourcing and Performance Measurement
5	6.192	Product Engineering and Product Re-engineering
6	5.028	Process Improvement

Significance of Service Sector and Need for Redefined Cost Accounting System

Table 4.27

Through KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.691
Bartlett's Test of Sphericity	Approx. Chi-Square	475.832
	Df	91
	Sig.	.000

In case of the Significance of Service Sector and Need for Redefined Cost Accounting System the results showed that the KMO measure of sampling adequacy was 0.691, which indicated that the present data were suitable for Factor Analysis. Similarly, Bartlett's Test of sphericity (0.00) was significant ($p<.05$), indicating sufficient correlation exist between the criteria to proceed with the Factor Analysis.

Table 4.28

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.732	26.658	26.658	3.732	26.658	26.658	2.491	17.796	17.796
2	1.614	11.525	38.183	1.614	11.525	38.183	1.991	14.223	32.019
3	1.507	10.764	48.947	1.507	10.764	48.947	1.820	13.001	45.020
4	1.309	9.349	58.297	1.309	9.349	58.297	1.619	11.567	56.587
5	1.240	8.857	67.153	1.240	8.857	67.153	1.479	10.566	67.153
6	.777	5.549	72.703						
7	.740	5.283	77.986						
8	.660	4.713	82.699						
9	.511	3.648	86.348						
10	.487	3.478	89.825						
11	.418	2.988	92.813						
12	.396	2.826	95.639						
13	.366	2.616	98.255						
14	.244	1.745	100.000						

Extraction Method: Principal Component Analysis.

Graph 4.10

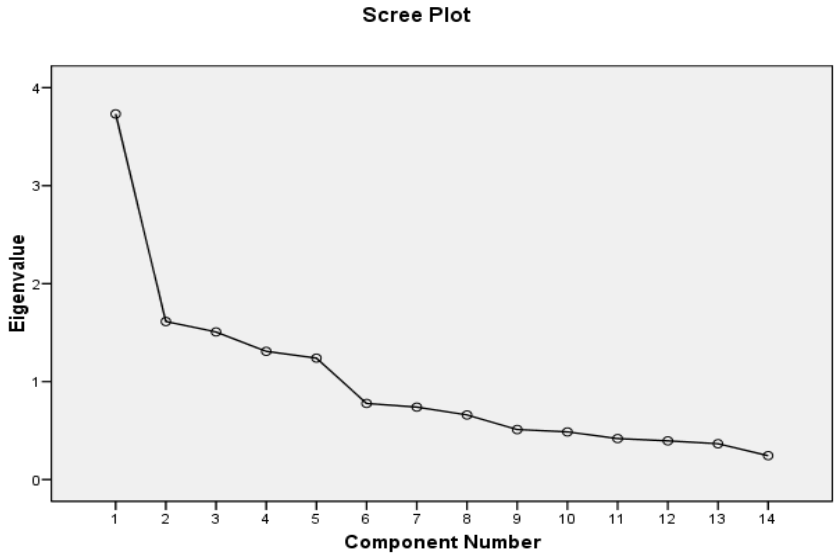


Table 4.29

Total Variance on significance of service sector and need of redefined costing system

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.732	26.658	26.658	3.732	26.658	26.658	2.491	17.796	17.796
2	1.614	11.525	38.183	1.614	11.525	38.183	1.991	14.223	32.019
3	1.507	10.764	48.947	1.507	10.764	48.947	1.820	13.001	45.020
4	1.309	9.349	58.297	1.309	9.349	58.297	1.619	11.567	56.587
5	1.240	8.857	67.153	1.240	8.857	67.153	1.479	10.566	67.153

Extraction Method: Principal Component Analysis.

The first five components (factors) in the initial solution have an Eigenvalues over 1 and it accounted for about 67 per cent of the observed variations in the Significance of Service Sector and Need for Redefined Cost Accounting System. According to Kaiser Criterion, only the first five factors should be used because subsequent Eigenvalues are all less than 1.

Table 4.30

Communalities and Rotated Component Matrix (a) of significance of service sector and need of redefined costing system

Sr. No.	Selected Criteria	Communalities Extraction	Rotated Component				
			1	2	3	4	5
1	Significant and growing economic activity is being observed in the Service Sector	.708	.420	-.119	-.058	.655	.290
2	Service Sector contributes maximum share in GDP	.602	-.049	.159	.114	.749	-.007
3	The share of Service Sector in generating Export Revenue is higher	.642	.051	.694	-.189	.348	.036
4	Competitive market poses at most challenges to Service Sector for competitive services	.725	-.167	.250	.107	.415	.672
5	Market Condition	.549	.331	.424	.394	-.231	.225
6	Customers requirements	.733	-.006	-.135	.836	-.054	.116
7	Information Technologies	.718	.094	.174	.797	.207	.012
8	Innovation	.732	.323	.170	.455	.459	-.426
9	Skills and knowledge	.670	.072	.801	.141	.048	.013
10	Service Sector needs to focus on myriad of activities performed to serve the customer	.713	.318	.047	.097	-.033	.774
11	Lowering the “cost to serve” is a critical success factor in Service Sector	.700	.814	-.038	.157	.100	.038
12	Changing environment has compelled Service Sector to adopt advanced Cost Management practices	.688	.814	.144	-.022	.052	.043

13	Refined Costing System is required in Service Sector due to non-uniformity in the resource consumption to serve	.662	.663	.461	.066	.021	.067
14	Customer Costing System is required in Service Sector due to non-uniformity in the resource used by customer	.562	.433	.522	.049	-.096	.301

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 7 iterations.

All the extracted communalities are acceptable and all criteria are fit for the factor solution as their extraction values are large enough.

Interpretation: Factor loadings were used to measure correlation between criteria and the factors. A factor loading close to 1 indicates a strong correlation between a criteria and factor, while a loading closer to zero indicated weak correlation. The factors are rotated with the used of Varimax with Kaiser Normalization rotation method. Principle Component Analysis (PCA) method is used for factor extraction and consider only those factors for interpretation purpose whose values are greater than 0.6.

From the above table it becomes clear that how much different criteria were correlated with five components. The criteria 11 (Lowering the "cost to serve" is a critical success factor in Service Sector), criteria 12 (Changing environment has compelled Service Sector to adopt advanced Cost Management practices) and criteria 13 (Refined Costing System is required in Service Sector due to non-uniformity in the resource consumption to serve) were more correlated with component 1. The criteria 9 (Skills and knowledge) and criteria 3 (The share of Service Sector in generating Export Revenue is higher) were more correlated with component 2. Criteria 6 (Customers requirements) and criteria 7 (Information Technologies) were more correlated with component 3. Criteria 1 (Significant and growing economic activity is being observed in the Service Sector) and criteria 2 (Service Sector contributes maximum share in GDP) were more correlated with component 4 where as Criteria 10

(Service Sector needs to focus on myriad of activities performed to serve the customer) and criteria 4 (Competitive market poses at most challenges to Service Sector for competitive services) were more correlated with component 5.

The table below shows factors along with % of variance and factor loading items.

Factor	% of Variance	Factor Loading (Items)
1	26.658	Lowering the "cost to serve" is a critical success factor in Service Sector, Changing environment has compelled Service Sector to adopt advanced Cost Management practices and Refined Costing System is required in Service Sector due to non-uniformity in the resource consumption to serve
2	11.525	Skills and knowledge and The share of Service Sector in generating Export Revenue is higher
3	10.764	Customers requirements and Information Technologies
4	9.349	Significant and growing economic activity is being observed in the Service Sector and Service Sector contributes maximum share in GDP
5	8.857	Service Sector needs to focus on myriad of activities performed to serve the customer and Competitive market poses at most challenges to Service Sector for competitive services

Changing environment has compelled Service Sector to adopt advanced Cost Management practices and lowering the "cost to serve" is a critical success factor in Service Sector. Use of Skills and knowledge to focus on myriad of activities performed as per the requirements of Customers are the significant factors for Service Sector so as to contribute maximum share in GDP.

Need of Activity Based Costing System in Service Sector

Table 4.31

Through KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.809
Bartlett's Test of Sphericity	Approx. Chi-Square	489.437
	Df	55
	Sig.	.000

In case of the Need of Activity Based Costing System in Service Sector the results showed that the KMO measure of sampling adequacy was 0.747, which indicated that the present data were suitable for Factor Analysis. Similarly, Bartlett's Test of sphericity (0.00) was significant ($p<.05$), indicating sufficient correlation exist between the criteria to proceed with the Factor Analysis.

Table 4.32

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.40	40.03	40.03	4.40	40.03	40.03	3.16	28.72	28.72
2	1.42	12.93	52.96	1.42	12.93	52.96	2.15	19.50	48.22
3	1.01	9.18	62.14	1.01	9.18	62.14	1.53	13.92	62.14
4	0.85	7.76	69.90						
5	0.79	7.18	77.08						
6	0.58	5.25	82.33						
7	0.53	4.85	87.18						
8	0.44	4.00	91.18						
9	0.36	3.30	94.48						
10	0.34	3.13	97.60						
11	0.26	2.40	100.00						

Extraction Method: Principal Component Analysis.

Graph 4.11

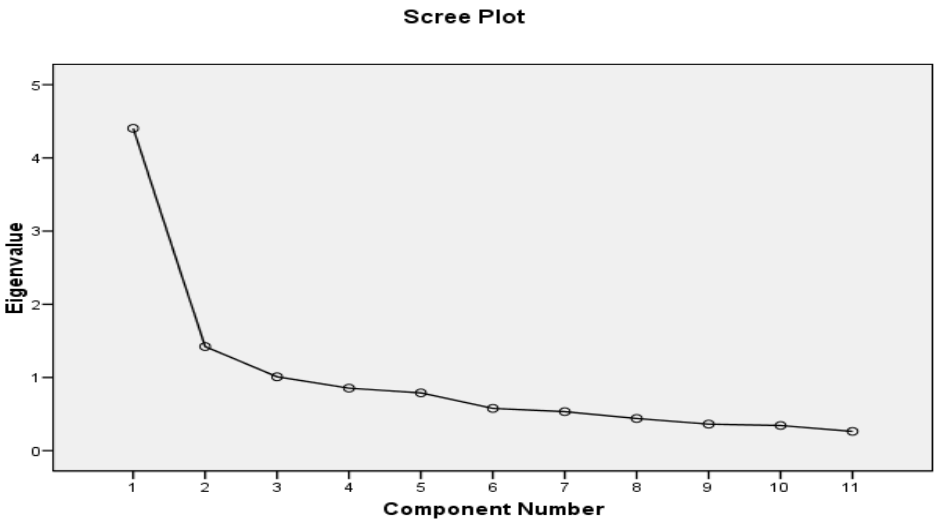


Table 4.33

Total Variance on Need of Activity Based Costing System in Service Sector

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.40	40.03	40.03	4.40	40.03	40.03	3.16	28.72	28.72
2	1.42	12.93	52.96	1.42	12.93	52.96	2.15	19.50	48.22
3	1.01	9.18	62.14	1.01	9.18	62.14	1.53	13.92	62.14

Extraction Method: Principal Component Analysis.

The first three components (factors) in the initial solution have an Eigenvalues over 1 and it accounted for about 62 per cent of the observed variations in the Need of Activity Based Costing System in Service Sector. According to Kaiser Criterion, only the first three factors should be used because subsequent Eigenvalues are all less than 1.

Table 4.34

Communalities and Rotated Component Matrix (a) of Need of Activity Based Costing System in Service Sector

Sr. No.	Selected Criteria	Communalities Extraction	**Rotated** Component		
			1	2	3
1	Providing Insight into Cost Causation	0.58	0.76	0.02	0.01
2	Rational Ascertainment of Cost	0.60	0.68	0.36	0.05
3	Cost Management	0.47	0.38	0.38	0.42
4	Ensuring Cost Control	0.73	-0.01	0.85	0.03
5	Cost Reduction	0.75	0.18	0.83	0.16
6	Performance Measurement	0.61	0.42	0.37	0.54
7	Process Improvement	0.87	0.01	0.05	0.93
8	Managerial Decision Making	0.47	0.66	0.10	0.15
9	Scope for Corrective Action	0.56	0.71	0.01	0.23
10	Compare Benchmarks	0.68	0.79	0.22	0.07
11	Enhance Quality of services	0.52	0.43	0.50	0.28

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization
a. Rotation converged in 4 iterations.

All the extracted communalities are acceptable and all criteria are fit for the factor solution as their extraction values are large enough.

Interpretation: Factor loadings were used to measure correlation between criteria and the factors. A factor loading close to 1 indicates a strong correlation between a criteria and factor, while a loading closer to zero indicated weak correlation. The factors are rotated with the used of Varimax with Kaiser Normalization rotation method. Principle Component Analysis (PCA) method is used for factor extraction and consider only those factors for interpretation purpose whose values are greater than 0.6.

From the above table it becomes clear that how much different criteria were correlated with three components. The criteria 10 (Compare Benchmarks), criteria 1 (Providing Insight into Cost Causation), criteria 9 (Scope for Corrective Action),

criteria 2 (Rational Ascertainment of Cost), criteria 8 (Managerial Decision Making) were more correlated with component 1. The criteria 4 (Ensuring Cost Control) and criteria 5 (Cost Reduction) were more correlated with component 2. Criteria 7 (Process Improvement) was more correlated with component 3

The table below shows factors along with % of variance and factor loading items.

Factor	% of Variance	Factor Loading (Items)
1	40.03	Compare Benchmarks, Providing Insight into Cost Causation, Scope for Corrective Action, Rational Ascertainment of Cost and Managerial Decision Making
2	12.93	Ensuring Cost Control and Cost Reduction
3	9.18	Process Improvement

Service sector needs to implement Activity Based Costing to Compare Benchmarks, ensuring Cost Control and Process Improvement.

4.3.6 Hypothesis Testing: Chi Square Test

Ho1 = There is no significant influence of Education Qualification i.e. Graduation level on understanding about Cost Accounting System.

Table 4.35
Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Graduate: * Cost Accounting Knowledge	129	100.0%	0	.0%	129	100.0%

Table 4.36
Graduate: * Cost Accounting Knowledge Cross Tabulation

Count

		Cost Accounting Knowledge				Total
		Less Lowest	Nutral	Less Highest	Highest	
Graduate:	Commerce	2	26	45	40	113
	BBA	0	1	0	0	1
	Engineering	0	8	7	0	15
Total		2	35	52	40	129

Table 4.37
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.967(a)	6	.044
Likelihood Ratio	16.931	6	.010
Linear-by-Linear Association	8.292	1	.004
N of Valid Cases	129		
a 8 cells (66.7%) have expected count less than 5. The minimum expected count is .02.			

- ✓ Commerce graduates are having highest knowledge of Cost Accounting followed by engineering graduates.
- ✓ The above table reveals that the Pearson Chi square value is .044 which is less than 0.05.
- ✓ The Chi square value which is less than 0.05 proves that null hypothesis is rejected.
- ✓ The above stated value of Chi square test shows that there is significant influence of Education Qualification i.e. Graduation level on understanding of Cost Accounting System.

Ho2 = There is no significant influence of Education Qualification i.e. Post Graduation level on understanding about Cost Accounting System.

Table 4.38
Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Post Graduate * Cost Accounting Knowledge	129	100.0%	0	.0%	129	100.0%

Table 4.39
Post Graduate * Cost Accounting Knowledge Cross tabulation

Count

		Cost Accounting Knowledge				Total
		Less Lowest	Nutral	Less Highest	Highest	
Post Graduate	Accounting & Finance	0	21	36	34	91
	Commerce & Management	0	7	4	0	11
	Any Other	0	0	1	0	1
	No	2	7	11	6	26
Total		2	35	52	40	129

Table 4.40
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.547(a)	9	.015
Likelihood Ratio	21.273	9	.011
Linear-by-Linear Association	4.302	1	.038
N of Valid Cases	129		
a 10 cells (62.5%) have expected count less than 5. The minimum expected count is .02.			

- ✓ Post graduates in Accounting and Finance are having highest knowledge of Cost Accounting.

- ✓ From the above table it is evident that Pearson Chi square value is .015 which is less than 0.05. It proves that null hypothesis is rejected.

- ✓ This means that the chi-square test shows that there is significant influence of Education Qualification i.e. Post Graduation level on understanding of Cost Accounting System.

Ho3 = There is no significant influence of Education Qualification i.e. Professional Degree on understanding about Cost Accounting System.

Table 4.41
Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Professional Degree * Cost Accounting Knowledge	129	100.0%	0	.0%	129	100.0%

Table 4.42
Professional Degree * Cost Accounting Knowledge Cross tabulation

Count

		Cost Accounting Knowledge				Total
		Less Lowest	Nutral	Less Highest	Highest	
Professional Degree	ICWA	2	8	18	23	51
	CA	0	3	12	13	28
	CS	0	3	4	0	7
	CIMA	0	0	2	0	2
	NO	0	21	16	4	41
Total		2	35	52	40	129

Table Number 4.43
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	35.067(a)	12	.000
Likelihood Ratio	39.353	12	.000
Linear-by-Linear Association	17.583	1	.000
N of Valid Cases	129		
a 11 cells (55.0%) have expected count less than 5. The minimum expected count is .03.			

- ✓ Respondents having professional degree in ICWA are having highest knowledge in Cost accounting followed by CA and CS.

- ✓ The above table presents that the Pearson Chi square value is .000 which is less than 0.05. It proves that null hypothesis is rejected.

- ✓ The Pearson Chi square value shows that there is significant influence of Education Qualification i.e. Professional Degree on understanding about Cost Accounting System.

Ho4 = There is no significant influence of Education Qualification i.e. PhD Degree on understanding about Cost Accounting System.

Table 4.44
Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
PhD * Cost Accounting Knowledge	129	100.0%	0	.0%	129	100.0%

Table 4.45
PhD * Cost Accounting Knowledge Cross tabulation

Count

		Cost Accounting Knowledge				Total
		Less Lowest	Nutral	Less Highest	Highest	
PhD	Commerce	0	6	9	3	18
	Any Other	0	0	2	0	2
	NO	2	29	41	37	109
Total		2	35	52	40	129

Table 4.46
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.677(a)	6	.460
Likelihood Ratio	6.817	6	.338
Linear-by-Linear Association	.973	1	.324
N of Valid Cases	129		
a 7 cells (58.3%) have expected count less than 5. The minimum expected count is .03.			

- ✓ From the above table it is evident that Pearson Chi square value is .460 which is greater than 0.05. It proves that null hypothesis is accepted.

- ✓ This means the chi-square test shows that there is no significant influence of Education Qualification i.e. PhD Degree on understanding of Cost Accounting System. So, understanding about Cost Accounting System is independent from the Education Qualification i.e. PhD Degree.

Ho5 = There is no significant influence of Occupation on understanding about Cost Accounting System.

Table 4.47
Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Occupation * Cost Accounting Knowledge	129	100.0%	0	.0%	129	100.0%

Table Number 4.48
Occupation * Cost Accounting Knowledge Cross tabulation

Count

		Cost Accounting Knowledge				Total
		Less Lowest	Nutral	Less Highest	Highest	
Occupation	Self Employed	0	6	7	10	23
	Service	2	29	45	30	106
Total		2	35	52	40	129

Table 4.49
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.526(a)	3	.471
Likelihood Ratio	2.806	3	.423
Linear-by-Linear Association	1.192	1	.275
N of Valid Cases	129		
a 2 cells (25.0%) have expected count less than 5. The minimum expected count is .36.			

- ✓ From the above table Pearson Chi square value comes as .471 which is greater than 0.05. It proves that null hypothesis is accepted.

- ✓ This means the chi-square test shows that there is no significant influence of Occupation on understanding about Cost Accounting System. So, understanding about Cost Accounting System is independent from occupation.

Ho6 = There is no significant influence of Specialization/Department /Expertise on understanding about Cost Accounting System.

Table 4.50
Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Specialization/ Department/ Expertise * Cost Accounting Knowledge	129	100.0%	0	.0%	129	100.0%

Table 4.51
Specialization/ Department/ Expertise * Cost Accounting Knowledge Cross tabulation
Count

		Cost Accounting Knowledge				Total
		Less Lowest	Neutral	Less Highest	Highest	
Specialization/ Department/ Expertise	Accounts	0	10	19	5	34
	Taxation	0	0	4	3	7
	Costing	2	6	20	32	60
	Production	0	2	4	0	6
	Finance	0	5	0	0	5
	Others	0	12	5	0	17
Total		2	35	52	40	129

Table 4.52
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	60.828(a)	15	.000
Likelihood Ratio	67.180	15	.000
Linear-by-Linear Association	8.040	1	.005
N of Valid Cases	129		
a 16 cells (66.7%) have expected count less than 5. The minimum expected count is .08.			

- ✓ Respondent having specialization in Costing is having highest knowledge of Cost Accounting.
- ✓ From the above table the value of Pearson Chi square value comes as .000 which is less than 0.05. It proves that null hypothesis is rejected.
- ✓ This means the chi-square test shows that there is significant influence of Specialization/Department /Expertise on understanding about Cost Accounting System.

Ho7 = There is no significant influence of Work Experience on understanding about Cost Accounting System.

Table 4.53
Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Work Experience: (in Years) * The accuracy of Cost accounting System	129	100.0%	0	.0%	129	100.0%

Table 4.54
Work Experience (in Years) * The accuracy of Cost accounting System Cross tabulation

Count

		The accuracy of Cost accounting System			Total
		Average	Good	Excellent	
Work Experience: (in Years)	Less than 10 Years	3	20	36	59
	10 to 20 Years	0	9	36	45
	More than 20	0	13	12	25
Total		3	42	84	129

Table 4.55
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.482(a)	4	.022
Likelihood Ratio	12.530	4	.014
Linear-by-Linear Association	.006	1	.940
N of Valid Cases	129		
a 3 cells (33.3%) have expected count less than 5. The minimum expected count is .58.			

- ✓ From the above table Pearson Chi square value comes as .022 which is less than 0.05. It proves that null hypothesis is rejected.
- ✓ This means the chi-square test shows that there is significant influence of Work Experience on understanding about Cost Accounting System. Hence, with increase in Work Experience understanding about Cost Accounting System increases.

Ho8 = There is no significant influence of Work Experience on costing method used in service sector.

Table 4.56
Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
costing method used in Service Sector * Work Experience: (in Years)	129	100.0%	0	.0%	129	100.0%

Table 4.57
Costing method used in Service Sector * Work Experience Cross tabulation

Count

		Work Experience: (in Years)			Total
		Less than 10 Years	10 to 20 Years	More than 20	
Costing system in service sector	Job Costing	18	35	12	65
	Process Costing Method	6	2	4	12
	Hybrid Costing Method	20	6	7	33
	Any Other	15	2	2	19
Total		59	45	25	129

Table 4.58
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	26.624(a)	6	.000
Likelihood Ratio	27.462	6	.000
Linear-by-Linear Association	9.693	1	.002
N of Valid Cases	129		
a. 3 cells (25.0%) have expected count less than 5. The minimum expected count is 2.33.			

- ✓ From the above table Pearson Chi square value comes as .000 which is less than 0.05. It proves that null hypothesis is rejected.
- ✓ This means the chi-square test shows that there is significant influence of Work Experience on costing method used in service sector.

Ho9 = There is no significant influence of Work Experience on system for allocating overheads in Service Sector Organisation.

Table 4.59
Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
system for allocating overheads in Service Sector Organisation * Work Experience: (in Years)	129	100.0%	0	.0%	129	100.0%

Table 4.60
System for allocating overheads in Service Sector Organisation * Work Experience (in Years) Cross tabulation

Count

		Work Experience: (in Years)			Total
		Less than 10 Years	10 to 20 Years	More than 20	
system for allocating overheads in Service Sector Organisation	Traditional budgeting using predetermined cost drivers	14	25	5	44
	Standard costing and variance analysis	9	9	6	24
	Actual cost reviews	33	11	12	56
	Activity Based Costing System	3	0	2	5
Total		59	45	25	129

Table 4.61
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.230(a)	6	.004
Likelihood Ratio	20.708	6	.002
Linear-by-Linear Association	.987	1	.320
N of Valid Cases	129		
a 4 cells (33.3%) have expected count less than 5. The minimum expected count is .97.			

- ✓ From the above table Pearson Chi square value is calculated as .004 which is less than 0.05. It proves that null hypothesis is rejected.
- ✓ This means the chi-square test shows that there is significant influence of Work Experience on system for allocating overheads in Service Sector Organisation.

Ho10 = There is no significant influence of Professional Degree on system for allocating overheads in Service Sector Organisation.

Table 4.62
Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
System for allocating overheads in Service Sector Organisation * Professional Degree	129	100.0%	0	.0%	129	100.0%

Table 4.63
System for allocating overheads in Service Sector Organisation * Professional Degree Cross tabulation

Count

		Professional Degree					Total
		ICWA	CA	CS	CIMA	NO	
System for allocating overheads in Service Sector Organisation	Traditional budgeting using predetermined cost drivers	8	9	6	2	19	44
	Standard costing and variance analysis	9	2	1	0	12	24
	Actual cost reviews	31	17	0	0	8	56
	Activity Based Costing System	3	0	0	0	2	5
Total		51	28	7	2	41	129

Table 4.64
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	36.715(a)	12	.000
Likelihood Ratio	41.980	12	.000
Linear-by-Linear Association	12.242	1	.000
N of Valid Cases	129		

a 11 cells (55.0%) have expected count less than 5. The minimum expected count is .08.

- ✓ From the above table Pearson Chi square value is calculated as .000 which is less than 0.05. It proves that null hypothesis is rejected.
- ✓ This means the chi-square test shows significant influence of Professional Degree on system for allocating overheads in Service Sector Organisation.

Ho11 = There is no significant influence of Occupation on system for allocating overheads in Service Sector Organisation.

Table 4.65
Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
System for allocating overheads in Service Sector Organisation * Occupation	129	100.0%	0	.0%	129	100.0%

Table 4.66
System for allocating overheads in Service Sector Organisation * Occupation Cross tabulation

Count

		Occupation		Total
		Self Employed	Service	
System for allocating overheads in Service Sector Organisation	Traditional budgeting using predetermined cost drivers	13	31	44
	Standard costing and variance analysis	1	23	24
	Actual cost reviews	9	47	56
	Activity Based Costing System	0	5	5
Total		23	106	129

Table 4.67
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.383(a)	3	.039
Likelihood Ratio	9.848	3	.020
Linear-by-Linear Association	3.657	1	.056
N of Valid Cases	129		

a 3 cells (37.5%) have expected count less than 5. The minimum expected count is .89.

- ✓ From the above table it is evident that Pearson Chi square value is .039 which is less than 0.05. It proves that null hypothesis is rejected.

- ✓ This means the chi-square test shows significant influence of Occupation on system for allocating overheads in Service Sector Organisation.

Ho12 = There is no significant influence of Occupation on costing method used in service sector.

Table 4.68
Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Costing method used in Service Sector to determine cost * Occupation	129	100.0%	0	.0%	129	100.0%

Table 4.69
Costing method used in Service Sector to determine cost * Occupation Cross tabulation

Count

		Occupation		Total
		Self Employed	Service	
Costing method used in Service Sector to determine cost	Job Costing	15	50	65
	Process Costing Method	0	12	12
	Hybrid Costing Method	8	25	33
	Any Other	0	19	19
Total		23	106	129

Table 4.70
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.874(a)	3	.031
Likelihood Ratio	14.169	3	.003
Linear-by-Linear Association	2.539	1	.111
N of Valid Cases	129		

a 2 cells (25.0%) have expected count less than 5. The minimum expected count is 2.14.

- ✓ From the above table it is evident that Pearson Chi square value is .031 which is less than 0.05. It proves that null hypothesis is rejected.

- ✓ This means the chi-square test shows significant influence of Occupation on costing method used in Service Sector.

4.3.7 Hypothesis Testing: Wilcoxan Signed Test

Ho13 = There is no significant difference in Cost Accounting System (TCS and ABC) with regards to accuracy of cost allocation with the help of Cost Driver:

Table 4.71
Ranks of Increases accuracy of cost allocation with the help of Cost Driver

	N	Mean	SD	Minimum	Maximum	Test Statistics	
TCS 2.1	129	1.55	0.728	1	4	Z	-10.085
ABC 2.1	129	4.81	0.501	2	5	Asymp. Sig. (2-tailed)	0

- ✓ A comparison was done between the Traditional Costing System and Activity Based Costing system to find out which of these increase accuracy of cost allocation with the help of Cost Driver on a scale, where 1 = Strongly Disagree to 5 = Strongly Agree.
- ✓ The results seems to indicate that ABC system shows an increases accuracy of cost allocation with the help of Cost Driver (Mean Rank = 4.81 vs. Mean Rank = 1.55).
- ✓ The output of the Wilcoxon signed rank test indicates that there is a significant difference in Increase in accuracy of cost allocation with the help of Cost Driver for the traditional and ABC system, Z-value = -10.085 and p-value =.000 which is less than 0.05. Thus, null hypothesis is rejected.
- ✓ This means that there is significant difference in Cost Accounting System with regard to accuracy of cost allocation with the help of Cost Driver. Hence, ABC increases the accuracy of cost allocation with the help of cost driver.
- ✓ Anand *et al.* (2005) considered the criteria for success of ABC system as its ability to provide more accurate cost data vis-à-vis traditional costing systems. They hypothesized that firms using ABC system are likely to be more successful in capturing accurate cost and profit information for decision analysis. The results of their study demonstrated that the Indian firms were successful in capturing accurate cost and profit information from their ABC system for their value chain and supply chain analysis vis-à-vis non-ABC user firms.

Ho14 = There is no significant difference in Cost Accounting System (ABC and TCS) with regard to assigning costs based on cause-and-effect relationships

Table 4.72
Comparison between ABC and TCS for objectively assigning costs based on cause-and-effect relationships

	N	Mean	SD	Minimum	Maximum	Test Statistics	
TCS 2.2	129	1.88	0.625	1	4	Z	-9.623
ABC 2.2	129	4.53	0.719	1	5	Asymp. Sig. (2-tailed)	0.000

- ✓ A comparison was done between the Traditional Costing System and Activity Based Costing system to find out which of these assign costs based on cause-and-effect relationships on a scale, where 1 = Strongly Disagree to 5 = Strongly Agree.

- ✓ The results seem to indicate that ABC system assign costs based on cause-and-effect relationships (Mean Rank = 4.53 vs. Mean Rank = 1.88).

- ✓ The output of the Wilcoxon signed rank test indicates that there is a significant difference to assign costs based on cause-and-effect relationships for the traditional and ABC system, Z-value = -9.623 and p-value =.000 which is less than 0.05. Thus, null hypothesis is rejected.

- ✓ This means that there is significant difference in Cost Accounting System with regard to assigning costs based on cause-and-effect relationships. Hence, ABC assigns costs based on cause-and-effect relationships.

Ho15 = There is no significant difference in Cost Accounting System (ABC and TCS) with regard to realistic cost behavior

Table 4.73

Comparison between ABC and TCS for Showing More realistic cost behavior

	N	Mean	SD	Minimum	Maximum	Test Statistics	
TCS 2.3	129	1.86	0.622	1	3	Z	-9.942
ABC 2.3	129	4.53	0.638	2	5	Asymp. Sig. (2-tailed)	.000

- ✓ A comparison was done between the Traditional Costing System and Activity Based Costing system to find out which of these show more realistic cost behavior on a scale, where 1 = Strongly Disagree to 5 = Strongly Agree.

- ✓ The results seem to indicate that ABC system shows more realistic cost behavior (Mean Rank = 4.53 vs. Mean Rank = 1.86).

- ✓ The output of the Wilcoxon signed rank test indicates that there is a significant difference in realistic cost behavior for the traditional and ABC system, Z-value = -9.942 and p-value =.000 which is less than 0.05. Thus, null hypothesis is rejected.

- ✓ This means that there is significant difference in Cost Accounting System with regard to showing more realistic cost behavior. Hence, ABC shows more realistic cost behavior.

Ho16 = There is no significant difference in Cost Accounting System (ABC and TCS) with regard to cost actually consumed by cost object

Table 4.74
Comparison between ABC and TCS for reflecting cost actually consumed by cost object

	N	Mean	SD	Minimum	Maximum	Test Statistics	
TCS 2.4	129	1.90	0.716	1	4	Z	-9.850
ABC 2.4	129	4.43	0.570	3	5	Asymp. Sig. (2-tailed)	.000

- ✓ A comparison was done between the Traditional Costing System and Activity Based Costing system to find out which of these reflects cost actually consumed by cost object on a scale, where 1 = Strongly Disagree to 5 = Strongly Agree.

- ✓ The results seem to indicate that ABC system reflects cost actually consumed by cost object (Mean Rank = 4.43 vs. Mean Rank = 1.90).

- ✓ The output of the Wilcoxon signed rank test indicates that there is a significant difference in reflecting cost actually consumed by cost object for the traditional and ABC system, Z-value = -10.085 and p-value =.000 which is less than 0.05. Thus, null hypothesis is rejected.

- ✓ This means that there is significant difference in Cost Accounting System with regard to reflecting cost actually consumed by cost object. Hence, ABC reflects cost actually consumed by cost object.

Ho17 = There is no significant difference in Cost Accounting System (ABC and TCS) with regard to provide fact-based insight into the spending on cost object

Table 4.75
Comparison between ABC and TCS for providing fact-based insight into the spending on cost object

	N	Mean	SD	Minimum	Maximum	Test Statistics	
TCS 2.5	129	1.83	0.762	1	4	Z	-9.818
ABC 2.5	129	4.43	0.542	3	5	Asymp. Sig. (2-tailed)	.000

- ✓ A comparison was done between the Traditional Costing System and Activity Based Costing system to find out which of these provide fact-based insight into the spending on cost object on a scale, where 1 = Strongly Disagree to 5 = Strongly Agree.

- ✓ The results seem to indicate that ABC system provides fact-based insight into the spending on cost object (Mean Rank = 4.43 vs. Mean Rank = 1.83).

- ✓ The output of the Wilcoxon signed rank test indicates that there is a significant difference in providing fact-based insight into the spending on cost object for the traditional and ABC system, Z-value = -9.818 and p-value =.000 which is less than 0.05. Thus, null hypothesis is rejected.

- ✓ This means that there is significant difference in Cost Accounting System with regard to providing fact-based insight into the spending on cost object. Hence, ABC provides fact-based insight into the spending on cost object.

Ho18 = There is no significant difference in Cost Accounting System (ABC and TCS) with regard to provide fact-based insight into the profitability of cost object

Table 4.76

Comparison between ABC and TCS for providing fact-based insight into the profitability of cost object

	N	Mean	SD	Minimum	Maximum	Test Statistics	
TCS 2.6	129	1.72	0.718	1	3	Z	-9.804
ABC 2.6	129	4.37	0.662	2	5	Asymp. Sig. (2-tailed)	.000

- ✓ A comparison was done between the Traditional Costing System and Activity Based Costing system to find out which of these provide fact-based insight into the profitability of cost object on a scale, where 1 = Strongly Disagree to 5 = Strongly Agree.

- ✓ The results seem to indicate that ABC system provides fact-based insight into the profitability of cost object (Mean Rank = 4.37 vs. Mean Rank = 1.72).

- ✓ The output of the Wilcoxon signed rank test indicates that there is a significant difference in providing fact-based insight into the profitability of cost object for the traditional and ABC system, Z-value = -9.804 and p-value =.000 which is less than 0.05. Thus, null hypothesis is rejected.

- ✓ This means that there is significant difference in Cost Accounting System with regard to providing fact-based insight into the profitability of cost object Hence, ABC provides fact-based insight into the profitability of cost object.

Ho19 = There is no significant difference in Cost Accounting System (ABC and TCS) with regard to provide accurate cost information in case of increased overheads

Table 4.77

Comparison between ABC and TCS for providing accurate cost information in case of increased overheads

	N	Mean	SD	Minimum	Maximum	Test Statistics	
TCS 2.7	129	1.74	0.734	1	4	Z	-9.974
ABC 2.7	129	4.67	0.533	3	5	Asymp. Sig. (2-tailed)	.000

- ✓ A comparison was done between the Traditional Costing System and Activity Based Costing system to find out which of these provide accurate cost information in case of increased overheads on a scale, where 1 = Strongly Disagree to 5 = Strongly Agree.

- ✓ The results seem to indicate that ABC system provides accurate cost information in case of increased overheads (Mean Rank = 4.67 vs. Mean Rank = 1.74).

- ✓ The output of the Wilcoxon signed rank test indicates that there is a significant difference in providing accurate cost information in case of increased overheads in the traditional and ABC system, Z-value = -9.974 and p-value =.000 which is less than 0.05. Thus, null hypothesis is rejected.

- ✓ This means that there is significant difference in Cost Accounting System with regard to providing accurate cost information in case of increased overheads. Hence, ABC provides accurate cost information in case of increased overheads.

Ho20 = There is no significant difference in Cost Accounting System (ABC and TCS) with regard to separation of profitable and non-profitable activities

Table 4.78

Comparison between ABC and TCS for separation of profitable and non-profitable activities

	N	Mean	SD	Minimum	Maximum	Test Statistics	
TCS 2.8	129	1.72	0.696	1	3	Z	-9.673
ABC 2.8	129	4.48	0.697	1	5	Asymp. Sig. (2-tailed)	.000

- ✓ A comparison was done between the Traditional Costing System and Activity Based Costing system to find out which of these separate profitable and non-profitable activities on a scale, where 1 = Strongly Disagree to 5 = Strongly Agree.

- ✓ The results seem to indicate that ABC system separates profitable and non-profitable activities (Mean Rank = 4.48 vs. Mean Rank = 1.72).

- ✓ The output of the Wilcoxon signed rank test indicates that there is a significant difference in separation of profitable and non-profitable activities for the traditional and ABC system, Z-value = -9.673 and p-value =.000 which is less than 0.05. Thus, null hypothesis is rejected.

- ✓ This means that there is significant difference in Cost Accounting System with regard to separating profitable and non-profitable activities. Hence, ABC separates profitable and non-profitable activities.

Ho21 = There is no significant difference in Cost Accounting System (ABC and TCS) with regard to separation of controllable and uncontrollable cost

Table 4.79

Comparison between ABC and TCS for separation of controllable and uncontrollable cost

	N	Mean	SD	Minimum	Maximum	Test Statistics	
TCS 2.9	129	1.65	0.669	1	3	Z	-9.865
ABC 2.9	129	4.45	0.612	2	5	Asymp. Sig. (2-tailed)	.000

- ✓ A comparison was done between the Traditional Costing System and Activity Based Costing system to find out which of these separates controllable and uncontrollable cost on a scale, where 1 = Strongly Disagree to 5 = Strongly Agree.

- ✓ The results seem to indicate that ABC system shows separation of controllable and uncontrollable cost (Mean Rank = 4.45 vs. Mean Rank = 1.65).

- ✓ The output of the Wilcoxon signed rank test indicates that there is a significant difference in separation of controllable and uncontrollable cost for the traditional and ABC system, Z-value = -9.865 and p-value =.000 which is less than 0.05. Thus, null hypothesis is rejected.

- ✓ This means that there is significant difference in Cost Accounting System with regard to separating controllable and uncontrollable cost. Hence, ABC separates controllable and uncontrollable cost.

Ho22 = There is no significant difference in Cost Accounting System (ABC and TCS) with regard to control costs based on tangible activities

Table 4.80

Comparison between ABC and TCS for controlling costs based on tangible activities

	N	Mean	SD	Minimum	Maximum	Test Statistics	
TCS 2.10	129	1.78	0742	1	3	Z	-9.603
ABC 2.10	129	4.46	0.75	2	5	Asymp. Sig. (2-tailed)	.000

- ✓ A comparison was done between the Traditional Costing System and Activity Based Costing system to find out which of these control costs based on tangible activities on a scale, where 1 = Strongly Disagree to 5 = Strongly Agree.

- ✓ The results seem to indicate that ABC system control costs based on tangible activities (Mean Rank = 4.46 vs. Mean Rank = 1.78).

- ✓ The output of the Wilcoxon signed rank test indicates that there is a significant difference in control of costs based on tangible activities for the traditional and ABC system, Z-value = - 9.603 and p-value =.000 which is less than 0.05. Thus, null hypothesis is rejected.

- ✓ This means that there is significant difference in Cost Accounting System with regard to controlling costs based on tangible activities Hence, ABC controls costs based on tangible activities.

Ho23 = There is no significant difference in Cost Accounting System (ABC and TCS) with regard to suitability for cost control

Table 4.81

Comparison between ABC and TCS for suitability for cost control

	N	Mean	SD	Minimum	Maximum	Test Statistics	
TCS 2.11	129	1.74	0.616	1	3	Z	-10.003
ABC 2.11	129	4.61	0.489	4	5	Asymp. Sig. (2-tailed)	.000

- ✓ A comparison was done between the Traditional Costing System and Activity Based Costing system to find out which of these is suitability for cost control on a scale, where 1 = Strongly Disagree to 5 = Strongly Agree.

- ✓ The results seem to indicate that ABC system shows suitability for cost control (Mean Rank = 4.61 vs. Mean Rank = 1.74).

- ✓ The output of the Wilcoxon signed rank test indicates that there is a significant difference in suitability for cost control for the traditional and ABC system, Z-value = -10.003 and p-value =.000 which is less than 0.05. Thus, null hypothesis is rejected.

- ✓ This means that there is significant difference in Cost Accounting System with regard to suitability for cost control. Hence, ABC is suitable for cost controls.

Ho24 = There is no significant difference in Cost Accounting System (ABC and TCS) with regard to Greater cost efficiency

Table 4.82

Comparison between ABC and TCS for cost efficiency

	N	Mean	SD	Minimum	Maximum	Test Statistics	
TCS 2.12	129	1.64	0.706	1	4	Z	-9.996
ABC 2.12	129	4.70	0.539	2	5	Asymp. Sig. (2-tailed)	.000

- ✓ A comparison was done between the Traditional Costing System and Activity Based Costing system to find out which of these provides greater cost efficiency on a scale, where 1 = Strongly Disagree to 5 = Strongly Agree.
- ✓ The results seem to indicate that ABC system shows greater cost efficiency (Mean Rank = 4.70 vs. Mean Rank = 1.64).
- ✓ The output of the Wilcoxon signed rank test indicates that there is a significant difference for providing greater cost efficiency for the traditional and ABC system, Z-value = -10.085 and p-value =.000 which is less than 0.05. Thus, null hypothesis is rejected.
- ✓ This means that there is significant difference in Cost Accounting System with regard to Greater cost efficiency. Hence, ABC provides greater cost efficiency.

Conclusion:

The results of empirical analysis provide information about practices, awareness and practicability of objective and effective use of activity based costing system as a tool of cost management in India. It established the gap between idea and practice of Activity Based Costing in service sector and suggests roadmap towards the application of activity based costing. All the major findings can be summarised as under:

i. Cost Accounting System is needed to determine cost and facilitate planning and controlling. This ascertains that the main objective of designing of sound Cost Accounting System must differentiate cost for different purposes and design as per the requirements of the organisation to measure the efficiency by which input resources can be converted to output based on cause and effect relationship.

ii. Cost Accounting System measures the efficiency of internal operating process and develops competitive strategies.

iii. Cost Accounting System provides basis for valuing manufactured inventory, Cost of goods sold for external reporting and facilitates day- to- day Decision Making.

iv. In response to comparative evaluation of the Traditional Costing System and Activity Based Costing System it was observed that increase in accuracy of cost allocation with the help of cost drivers is an important factor of overheads management system, followed by greater cost efficiency and accurate cost information in case of increased overheads as effective use of indirect cost allocation system.

v. Activity Based Costing system as an indirect costs allocation method is suitable for cost control to objectively assign costs based on cause-and-effect relationships to show more realistic cost behavior.

vi. Activity Based Costing system as an indirect costs allocation method controls costs based on tangible activities, and also separates profitable and non-profitable activities and controllable and uncontrollable costs.

vii. Activity Based Costing system as an indirect cost assignment to replace cost allocation, apportionment and absorption of overheads. It reflects cost actually consumed by cost object by providing fact-based insight into the spending, cost causation and profitability of cost object.

viii. This research is a critique of Traditional Costing System and emphasizes that accurate cost is measured with the help of Activity Based Costing System.

ix. Activity Based Costing System Increases accuracy of cost allocation with the help of cost drivers and provides greater cost efficiency by supplying accurate cost information in case of increased overheads.

x. Application of Activity Based Costing is advantageous as a Total Quality Management tool to perform various functions like i) Cost Object Costing ii) production related functions iii) customer related functions and iv) managerial decision making.

xi. In response to Production related functions Activity Based Costing System provides quality information for Process Improvement, Inventory Valuation, Product Re-engineering Quality Control, Product Engineering and Research and Development.

xii. In response to Customer related functions Activity Based Costing System improves Customer Value with the help of activity analysis, helps in Customer Satisfaction Analysis and it provides competitive cost for sound Pricing Policy.

xiii. In response to Managerial Decision Making related functions Activity Based Costing System provides different cost for different purposes, performance measurement, identification of relevant and irrelevant cost for decision making, cost management, identification of non-value added activity, product-mix decisions, managerial planning, detection of causes for deviation from budget, quality control and decisions outsourcing for decision making.

xiv. As significant and growing economic activity is being observed in the Service Sector with its increasing contribution in the economy, a refined Costing System with better understanding of costs information to improve profitability is the need of the day.

xv. Owing to non-uniformity in the resource consumption by customer in service sector Activity Based Costing System with its focus on resources consumption meets the requirement of service providers.

xvi. Majority of service providers are using actual cost review for allocating overheads followed by Traditional budgeting. Very few service firms are using Activity Based Costing System for allocating overheads in the service sector. This shows that in India, activity based costing system is still in infancy stage as compared to Traditional costing system used for cost calculation and reporting.

xvii. The main reasons for application of Activity Based Costing in service sector are:

- ✓ Performance Measurement,
- ✓ Cost Reduction,
- ✓ Corrective Action,
- ✓ Provide insight into cost causation and
- ✓ Rational ascertainment of cost information for Managerial Decision making.

xviii. This study has witnessed an interesting contradiction on the opinion of the respondents that majority opined the best outcome can be obtained through the application of Activity Based Costing but in reality very few organisations are applying Activity Based Costing in practice.

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