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Significance of Management Accounting Techniques in Decision-making: An Empirical Study on Manufacturing Organizations in Bangladesh

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Management accounting is concerned with gathering and reporting internal financial information to facilitate decision-making process. As management accounting is not required to conform to national accounting standards, it allows business to customize the management accounting techniques as per demand of company. As a process of this customization, some advanced quantitative as well as number of qualitative techniques accompany with the traditional techniques, have been emerged to cater the information need in decision making. This study attempts to measure the significance of management accounting techniques in decision making of the selected manufacturing organizations in Bangladesh. In doing so, a total of 74 manufacturing organizations have been surveyed with a structured questionnaire by using 5 point Likert Scale measurement from different categories of manufacturing organizations. Findings reveal that cash flow statement analysis, ratio analysis, budgetary control, CVP analysis, variance analysis and fund flow analysis have been frequently high-ranking techniques. Secondly, the authors have recognized five factors to calculate the variability in decision-making with the help of rotated component matrix which shows that 75.125 % of the total variability has found in the usage of management accounting techniques. Finally, it is also found by using multiple regression model that only 25.6% of the variation in decision making of manufacturing organizations in Bangladesh.

Keywords: Management Accounting Techniques, Decision Making, Manufacturing Organizations, Rotated Component Matrix.

Field of Research: Accounting

1. Introduction

Decision making is a comprehensive process that comprises with identifying the problem and decision criteria, allocating weights to those criteria, moves to developing, analyzing and selecting an alternative that can resolve the problem, implementing the alternative and ending with the evaluating the decision's effectiveness. Management accounting is concerned with the use of information in facilitating managers to make informed business decisions effectively. Management accounting is not required to conform to national accounting standards. This allows business owners to customize the management accounting techniques as per demand of the company. As a process of this customization, some advanced quantitative as well as number of qualitative techniques accompany with the traditional techniques, have been emerged to cater the information need in decision making.

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The changes that will be necessary for management accounting to be useful in the 21st century are different from the changes that have occurred in the past. In the past, the focus has been on "how can we improve what we do?" The focus for the future should be "how can we make accounting information more useful for decision making?"(Johnson, H.T., 1995).

The last two decades have been a period of wrenching change for many businesses and their decision making techniques. Many managers have learned that cherished ways of doing business do not work anymore and that major changes must be made in how organizations are managed and in how work gets done. These changes are so great that some observers view them as a second industrial revolution. This revolution is having a profound effect on the practice of managerial accounting. Since the early 1980s, many companies have gone through several waves of improvement programs, starting with Just-In-Time (JIT) and passing on to Total Quality Management (TQM), Process Reengineering and various other management programs. When properly implemented, these improvement programs can enhance quality, reduce cost, increase output, eliminate delays in responding to customers and ultimately increase profits (Garrison and Noreen, 2003).

The present study focuses on the significance of management accounting techniques in decision making of the selected manufacturing organizations in Bangladesh. In doing so, the authors have presented the study into five broad sections. After introduction section, in the second section the authors have reviewed related literature, thirdly set the objectives and methodology. Fourth section has been shown analysis and finally conclusion with some limitation has been given in section five.

2. Rationale of the Study

Management accounting is a new discipline and is still very much in a state of evolution. Therefore, it comes across the same impediments as a relatively new discipline has to face sharpening of analytical tools and improvements of techniques creating uncertainty about their application. There is always a temptation to make an easy course of arriving at decisions by intuition rather than taking the difficulty of scientific decision making. It derives its information from financial accounting, cost accounting and other records. Management Accounting will not replace the management and administration. It is only a tool of management. Of course, it will save the management from being immersed in accounting routine and process the data and put before the management the facts deviating from the standard in order to enable the management to take decision by the rule of exception.

The origins of modern management accounting can be traced to the emergence of managed, hierarchical enterprises in the early nineteenth century (Johnson and Kaplan. 1987). The Industrial Revolution in the early nineteenth century resulted in the emergence factory system that dramatically changed the productions process. (Ashton, D., Hopper, T, and Scapens, R.W., 1991). This has created a new demand for accounting information for decision making.

A lot of management accounting information is based on quantitative and qualitative data. This interest was initially prompted by a perceived gap between the theory and practice of management accounting, and specially the generally held belief that the traditional wisdom of management accounting textbooks is not widely used in practice.

This belief was based on a few published studies (such as Cooper et. al., 1983, Berry, 1984, Wilkinson, 1986, Ouibrahim and Scapens, 1988 etc.) of the use of particular management accounting techniques (Hoque, 1991).

A quantitative approach emphasis the subjective nature of the social world and attempts to understand it primarily from the actor's perspective that is from the frame of reference of those being studied (Hoque, 1991). Given the current state of understanding of how management accounting control systems operate in the rich variety of organizational context, the qualitative or grounded approach appears to have much to recommend it as a means of making progress (Hoque, 1991).Some quantitative traditional measures namely cost-volume-profit analysis, cash flow analysis, marginal costing, variance analysis, ratio analysis etc. have been commonly used by the managers managerial decision making, but in order to support rapidly changing technologies as well as to meet the challenges of vigorous global competition they need to use some developed new management accounting techniques such as activity-based costing; target costing; total quality management; just-in-time, process reengineering etc. which seems to be less used in Bangladesh.

Most of the study in relation to management accounting techniques conducted in world is on manufacturing firm as the concept of cost and management accounting has emerged in manufacturing organizations. Researchers and academicians are trying to pay attention on the manufacturing business firm's concerned personnel attitude towards the use of management accounting techniques in decision making as they play the critical role in creating a competitive advantage for the organizations.

Chenhall H. Robert and Smith Langfield Kim (1998)has surveyed Australian manufacturing firms to identify the extent to which they have adopted certain traditional and recently developed management accounting practices. The findings indicate that, overall, rates of adoption of traditional management accounting practices were higher than recently developed techniques. However, newer techniques, such as activity-based costing, were more widely adopted.The evidence suggests that the majority of large Australian firms have adopted a range of management accounting techniques that emphasize non-financial information, and take a more strategic focus.

Adler et. al. (2000) has done a detailed examination of manufacturers' adoption and utilization of advanced management accounting techniques as well as perceived barriers as structural and environmental changes to implementation of new techniques by surveying 165 New Zealand manufacturing sites.

Joshi P.L. (2001) has done a study which examines the management accounting practices in a sample of 60 large and medium size manufacturing companies in India. The findings reveal that the adoption rate in India for traditional management accounting practices was higher than for the recently developed techniques.

Vergauwen G. M. C. Philip and Kerckhoffs Christian (2005) has done a case study which showed Activity Based Costing (ABC) and throughput accounting (TA) as accounting tools to "structure" technical (process) insights in an accounting context. The case shows how working-floor insights and production process data can be used in the computation of income statements that are relevant managerial decision making.

Anand Manoj, Sahay B. S. and Saha Subhashish (2005) has shown that the Balance Scorecard adoption rate is 45.28 per cent in corporate India compared with 43.9 per cent in the USA. The financial perspective has been found to be the most important perspective followed by customers' perspective, shareholders' perspective, internal business perspective, and learning and growth perspective in the performance scorecard of corporate India.

Sarkar Bakul James & Yeshmin Farjana (2005) has focused on the application of responsibility accounting as one of the management accounting techniques in 30 organizations. The authors have focused on four responsibility centre as cost center, revenue center, profit center and investment center to show the accountability of the organization. This study has also revealed that the most common technique - budget is using to evaluate the performance.

Sharkar et. Al. (2006) has given an overview of the management accounting practices in the listed manufacturing companies of Bangladesh. The analysis of this study has revealed that all sectors fail to practice some newly developed techniques. They have suggested to improve and fasten the management accounting practices.

George Joseph (2006) has found the management accounting techniques are driven by the organizational change.

Cadez Simon (2006) has identified 17 Strategic management accounting (SMA) techniques are reported data from 108 large Slovenian manufacturing companies. This study has revealed that there is a wide range of application rates for the techniques appraised: capital budgeting, quality costing and competitor performance appraisal are the most widely used; valuation of customers as assets, lifetime customer profitability analysis and life cycle costing are the least widely used.

Khajavi Shokrollah and Nazemi Amin (2006) have found that the world-class companies should use the newest and modern techniques in manufacturing. Flexibility in manufacturing, advanced information technology, programming and control, sketching and product innovation, organization structure, financial controls, bench marking, long range strategic plans, comprehensive quality management, and personnel active partnership in business operation and business process are considered as the main characteristics of world-class companies. In continuation, a model will be presented, on the basis of which, management accounting system can help these companies. In order to establish this model, activity based costing techniques, target costing, theory of constraint, balanced scorecard, and manufacturing on time will be used.

Wegmann Grégory (2007) has analyzed the management accounting applications which try to improve the Activity-based Costing method. He also shows several proposals: Customer-driven ABC, Interorganizational Cost Management, Resource Consumption Accounting and Time-driven ABC.

Al-Omiri Mohammad and Drury Colin Drury (2007) has conducted a paper which has been unable to establish strong links between ABC adoption and those contextual factors that have been identified in the literature that are conducive to the adoption of ABC systems. Results indicate that higher levels of cost system sophistication are positively associated with the importance of cost information, extent of use of other innovative management accounting techniques, intensity of the competitive environment, size, extent of the use of JIT/lean production techniques and the type of business sector.

Bidhan C. M. (2007) has examined the status of use of management accounting techniques in the manufacturing enterprises of Bangladesh. It has been discovered that modern techniques like Activity-Based Costing, Target Costing, Just-in-Time (JIT), Total Quality Management (TQM), Process Reengineering and The Theory of Constraints (TOC) were not used in public and private sector manufacturing enterprises but a few Multinational Corporations (MNC) are using some of techniques like JIT and TQM. Also traditional techniques like ratio Analysis, Standard Costing, Cash Flow Analysis were found widely used.

Askarany Dr Davood and Yazdifar Hassan (2007) has examined the level of association between attributes of innovation and the diffusion of activity based-costing. The findings suggest that the relatively low implementation of ABC across firms implies that decision makers remain unconvinced that whether ABC's advantages over traditional accounting techniques are high enough to pursue them to implement ABC in practice based on two surveys. The results of the first survey, carried out in 1997 within the Plastics and Chemicals Industries Association (PACIA) in Australia proposed the perceived advantages and disadvantages of management accounting techniques as the most influential contextual factors influencing the implementation of accounting changes. The findings of the second survey carried out in 2002 within industries registered with CPA Australia as well as with PACIA highlight the significant impact of attributes (advantage/disadvantage) of innovation on decision to implement or not management accounting innovations.

Hart F. J. De and Wet De Johannes (2008) has investigated that how existing management accounting and financial management techniques can be adjusted to incorporate the EVA perspective.

Lamminmaki Dawne (2008) conducted a study on the nature and antecedents of accounting systems involved in hotel outsourcing decision-making and control.It appears that accounting appraisal of outsourcing proposals rarely include long-term oriented sophisticated techniques such as the discounting of future cash flows. It is conjectured that this may be because outsourcing decisions are not conducted in the context of the formal capital budgeting process.

Knight Kathy and Collier M. Paul (2009) The paper makes three specific contributions to the literature. First, the dynamic capabilities literature is applied within management accounting to show how the adoption of particular techniques in particular organizational settings can provide decision useful information for the improvement of substantive capabilities and improvements in the resource base. Second, a revised model of dynamic capabilities is presented which takes into account the hierarchical and inter-related nature of resources and capabilities. The managerial role is emphasized through the role of managers in accessing external knowledge resources, transferring that new knowledge into new or modified organizational routines and using that knowledge to develop substantive capabilities, thereby leveraging the use of internal organizational resources. Dynamic capabilities must be learned and embedded within organizational routines. These routines include management accounting routines. Third, the literature of capability lifecycles has been expanded to reflect some additional causes of failure of dynamic managerial capabilities.

Budde Jorg (2009) investigates the role of variance analysis procedures in aligning objectives under the condition of distorted performance measurement. A risk-neutral agency with linear contracts is analyzed, whereby the agent receives post-contract, pre-decision information on his productivity. If the performance measure is informative with respect to the agent's marginal product concerning the principal's objective, variance investigation can alleviate effort misallocation. These results carry over to a participative budgeting situation, but in this case the variance investigation procedures are less demanding.

Yeshmin Farjana and Das Sumon (2009) has conducted a study on financial institutions in Bangladesh. It revealed that managers of the financial institutions are very much satisfied in application of budgetary control analysis and variance analysis to measure their performance among the fourteen management accounting techniques. At the same time managers were very much dissatisfied in application of segment reporting. Yeshmin Farjana and Fowzia Rehana (2010) have made a comparative analysis in a study where the result has focused on the variability of management accounting practice in manufacturing and service industries. The study has revealed that ratio analysis, budgetary control, CVP analysis, variance analysis and fund flow analysis are using frequently in managerial functions.

In Bangladesh, the research on Cost Management Accounting Practice (CMAP) is very rare that made the researchers interested to initiate a research in this area. It will enlarge the scope of further researches benefiting the practitioners to come up with feasible solutions to the problems identified in the research (Shil, Nikhil Chandra1; Alam, Mohammad Faridul1; Naznin, Mahmuda, 2010).

Hoozee Sophie and Bruggeman Werner (2010) has conducted a paper which shows how collective worker participation and leadership style influence the emergence of operational improvements during the design process of a time-driven *activity-based costing* (ABC) system in a case study setting. The case findings suggest that, for operational improvements to appear during the design process of a time-driven ABC system, collective worker participation and appropriate leadership styles are indispensable.

Hansen Allan (2010) presents an analysis of the resolution of organizational externalities through the use of non-financial performance measures for planning. Using a comparative case study, this paper illustrates how centralized controllers' choice of non-financial performance measures and target setting in two companies provides critical information to decentralized agents regarding how to balance their performance with the performance of other decentralized agents in their organization.

King Robyn et al. (2010) presents evidence linking primary healthcare business characteristics, budgeting practices, and business performance. Based on a sample of 144 responses from a survey of members of the Australian Association of Practice Managers (AAPM), we find that factors identified by contingency-based research are useful for predicting a business's budgeting practices.

Chand Mohinder & Dahiya Ashish (2010) has investigated and report the importance and usage of management accounting techniques in Indian SMHEs'. Based on a structured questionnaire over 429 Indian hospitality small and medium enterprises. The findings have suggested that management accounting techniques have a great impact on different firm's aspects especially on cost reduction and quality improvement. Further results indicate the major obstacles for application of management accounting techniques in Indian SMEs relating to ownership and size characteristics and extensive high cost.

The present study has emphasized on the level of usage of twenty-three management accounting techniques (Appendix – I) in making effective decisions by the different manufacturing organizations in Bangladesh. This study would be of particular relevance to Bangladesh, because it would help to asses the significant influence of management accounting techniques in decision-making by manufacturing organizations 0f Bangladesh.

3. Objectives of the Study

The objectives of the study are as follows:

A. To show the necessity of management accounting and to notify its techniques;
B. To assess the significance of quantitative and qualitative management accounting techniques;
C. To examine the usage level of management accounting technique and
D. To show the influence of management accounting techniques in decision making.

4. Research Methodology

4.1 Sample Size

In this study the total number of manufacturing organizations is 74 (Table- 01) which is selected randomly as sample. Those are segregated into five categories: textiles, pharmaceuticals, food and allied, cement and ceramics.

Table- 01: Sample Size of the Study

Categories	Sample
Textile	32
Pharmaceuticals	17
Food & Allied	11
Cement	9
Ceramics	5
Total	74

4.2 Data Collection

This study was an exploratory research. The required primary data was collected by providing a structured survey questionnaire based on 5 point Likert measurement scale (where 1 represents always, 2 represents frequently, 3 represents sometimes, 4 represents rarely and 5 represents never) to each individual (senior officers of management level) of the manufacturing organization. This study was purposive and non-probabilistic in nature. Those who responded on the questionnaire were taken as a sample of the study. For literature review and other purposes, different books, articles, manuals, websites and other secondary data were reviewed.

4.3 Survey Period

Primary data of this study have been collected within the period from November 2009 to February 2010**.**

4.4 Data Analysis

In this study the authors have used three statistical techniques to represent the significance of management accounting techniques in decision making.

- **Mean** is used to measure the relative significance of the Management Accounting Techniques.

- **Factor Analysis** has been conducted to measure the variability of the Management Accounting Techniques in decision making.

- **Multiple Regression Model** has been applied to measure the significant influence of the Management Accounting Techniques in decision-making.

5. Analysis and Findings

This study has exposed the influence of 23 (Appendix-I) management accounting techniques in decision making in manufacturing organizations. At first mean score has been measured to analyze the relative significant management accounting techniques in decision making (Table – 02).

Table-02: Relative Significant Techniques

Sl#	Relative significant techniques	Mean Score
Quantitative Management Accounting Techniques		
1.	Cash flow Statement Analysis	4.3108
2.	Ratio Analysis	4.2432
3.	Budgetary Control	4.2027
4.	CVP Analysis	4.0946
5.	Variance Analysis	4.0541
6.	Fund Flow Analysis	4.0541
7.	Standard costing	38514
8.	Variable Costing	3.7568
9.	Target Costing	3.6622
10.	Absorption Costing	3.5405
11.	Inter-firm Comparison	3.4595
12.	ABC	3.3919
13.	Differential costing	3.2973
14.	JIT	3.2703
15.	Opportunity Costing	3.1757
16.	Responsibility Accounting	2.9865
17.	Segment Reporting	2.8919
Qualitative Management Accounting Techniques		
18.	TQM	3.4459
19.	TOC	3.0946
20.	MBE	2.9730
21.	Process Reengineering	2.7973
22.	Kaizen Costing	2.3649
Both Qualitative & Quantitative Management Accounting Techniques		
23	Balance Scorecard	3.3514

Among the mean score of 17 nos quantitative management accounting techniques, the authors have found that the manufacturing organizations frequently apply cash flow statement analysis, ratio analysis, budgetary control, CVP analysis, variance analysis and fund flow analysis. TQM and TOC are widely used qualitative management accounting techniques. On the other hand, infrequently used management accounting technique is balanced scorecard which includes both quantitative and qualitative measurements.

Secondly, the authors have identified five factors in terms of eigenvalue of larger than 1.0 for application level of managerial techniques in making decisions by manufacturing organizations using the factor analysis (Appendix- II) of 23 statements. These five factors can explain 75.125 % of the total variability in the application of management accounting techniques in manufacturing organizations.

The *first* factor as the highest loadings can alone explain 34.006% of the total variability of application related to ten variables pertaining as budgetary control, variance analysis, CVP analysis, ratio analysis, fund flow analysis, cash flow statement analysis, variable costing, standard costing, segment reporting & TQM. The *second* factor exhibits largely loadings for four variables which are relating to TOC, inter-firm comparison, process-reengineering & kaizen costing. This factor can alone explain 12.651% of the total variability of application. The *third* factor having defined by four variables is target costing, differential costing, opportunity costing and JIT. This can settle 11.343% of the total variability. The fourth one extracted three variables as ABC, absorption costing and MBE to show 8.918% in the variability of application. And the last factor loaded 8.206% of the variability of application contains two variables as responsibility accounting and balance scorecard.

Now the authors are trying to find out the level of significance of managerial techniques in decision making. In this regard the authors have done multiple regression analysis. The regression result shows that the multiple regression model is less significant (Table -04). The coefficient of determination indicates only 25.6% (Table - 03) of the variation in decision making of manufacturing organizations is explained by 23 independent variables. It was observed that eight factors (Table - 05) are significant in decision making by manufacturing organizations. The result (Appendix – III) shows that among them budgetary control, fund flow analysis, absorption costing, balanced scorecard and TOC are significant at 10% level and ABC, segment reporting and inter firm comparison are significant at 5% level.

Table – 03: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.700(a)	.490	.256	.51925

Table- 04: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.965	23	.564	2.091	.015
	Residual	13.481	50	.270		
	Total	26.446	73			

Table –05: Significance of Management Accounting Techniques in Decision

Factors	Standardized coefficient	Significance
Budgetary Control	.698	.100**
Fund Flow Analysis	.403	.058**
Absorption Costing	-.334	.084**
Balanced Scorecard	-.284	.089**
TOC	-.366	.083**
ABC	-.389	.041*
Segment Reporting	.472	.027*
Inter firm Comparison	.348	.031*

***significant at 5, **significant at 10%**

From the regression results it can be concluded that among the eight influential factors budgetary control is the most significant factor for decision making in manufacturing organizations. It also can be noted that other than these eight techniques the remaining fifteen factors have insignificant influence in decision making.

6. Conclusion

Most of the manufacturing organizations are using quantitative management accounting techniques frequently. On the other hand few manufacturing organizations are using qualitative management accounting techniques. It is worth mentioning that most of the manufacturing organizations are not well informed about Kaizen Costing. Among 23 management accounting techniques, most influential techniques are: Budgetary Control, Fund Flow Analysis, Absorption Costing, Balanced Scorecard, TOC at 10% level and on the other hand ABC, Segment Reporting, Inter-firm Comparison at 5% level.

From this research, it can be concluded that though Researchers and academicians are trying to pay attention on the manufacturing business firm's concerned personnel attitude towards the use of management accounting techniques in decision making, still manufacturing organizations of Bangladesh use various management accounting techniques and practices in narrow scale. It is necessary to apply managerial accounting techniques to make effective management decision by the manufacturing organizations operating in Bangladesh. The modern management accounting practices enable the organization to improve the innovative capacity of the organization and flexibility so that it can continually change and improve performance

7. Limitation

The result of the study is completely empirical one and the availability of data also hinders this study to make more analysis. Lack of awareness about the concept and usability of management accounting techniques of the concerned personnel of manufacturing organization depart that organization from the maximum benefit of usage of management accounting techniques in decision making. Moreover, this study suffers from limitation of time. Further, the authors have queer interest to make a framework for creating awareness to the concerned personnel to implement theses management accounting techniques successfully.

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Appendix – I: Management Accounting Techniques

Techniques	Descriptions
Budgetary Control	Budgetary control is the system of management control in which all the operations, as sales, purchase, production etc. are forecasted in advance and the results, when known, are compared with the planned targets (Chakraborty, 1977).
Variance Analysis	Differences between standard prices and actual prices and standard quantities and actual quantities are called variances. The act of computing and interpreting variances is called variance analysis (Garrison and Noreen, 2004).
Cost-Volume-Profit Analysis(CVP)	Cost –Volume- Profit analysis helps managers understand the relationships among cost, volume and profit (Garrison and Noreen, 2004).
Ratio Analysis	Ratio analysis refers to such a treatment of the information contained in the Income Statement and the Balance Sheet so as to afford full diagnosis of the profitability, liquidity and financial soundness of the business (Maheshwari, 1989).
Fund Flow Analysis	Working capital being life-blood of the business, analysis of fund flow is thus extremely useful. Financial analysts also have an understanding of changes in the distribution of resources between two balance sheet dates by analyzing the fund flow statements.
Cash-flow Statement	The statement of cash flows reports the cash receipts, cash payments and net changes in cash resulting from operating, investing and financing activities during a period (Weygandt et. al., 2007)
Activity Based Costing	Activity-based costing (ABC) developed to provide more accurate ways of assigning the costs of indirect and support resources to activities, business processes, products, services, and customers (Kaplan and Atkinson, 2001).
Variable Costing	Variable costing is a technique where only the variable costs are considered while computing a cost of a product. The fixed costs are met against the total fund arising out of excess of selling price over total variable cost (Maheshwari, 1989).
Absorption Costing	Under this technique, both variable and fixed costs are charged to production, i.e. total costs include both variable and fixed cost.
Target Costing	Target costing is a cost management tool for making reduction a key focus throughout the life of a product (Horngren, et. al., 2003).
Differential Costing	Differential cost is the difference in total cost between two alternatives
Standard Costing	Standard cost is preset per unit and then actual cost is compared with the standard cost and finally a variance is sought out and action is taken accordingly.
Opportunity Costing	Opportunity costs are the expected benefits which the company would have derived from those resources if they were not committed to the proposed project.
Segment reporting	A segment is a part or activity of an organization about which managers would like cost, revenue or profit data. Effective decentralization requires segment reporting. In addition to the company wide income statement, reports are needed for individual

	segments of the organization (Garrison and Noreen, 2004).
Responsibility Accounting	The basic idea behind responsibility accounting is that a manager should be held responsible for those items- and only those items- that the manager can actually control to a significant extent (Garrison and Noreen, 2004).
Balance Scorecard	A balance scorecard consists of an integrated set of performance measures that are derived from the company's strategy and that support the company's strategy throughout the organization. Under the balance scorecard approach, top management translates its strategy into performance measures that employees can understand and can do something about.
MBE	Management by exception means that manager's attention should be directed toward those parts of the organization where plans are not working out for one reason or another. Time and effort should not be wasted focusing on those parts of the organization where things are going smoothly.
Total Quality Management	The most popular approach to continuous improvement is known as total quality management. There are two major characteristics of total quality management (TQM): (i)a focus on serving customers and (ii) systematic problem solving using teams made up of front-line workers(Garrison and Noreen, 2004).
Theory of Constraints	A constraint is anything that prevents one from getting more of what he/she wants. Theory of Constraint (TOC) maintains that effectively managing the constraint is a key to success (Garrison and Noreen, 2004).
JIT	JIT is a demand-pull manufacturing system in which each component in a production line is produced immediately as needed by the next step in the production line (Horngren, et. al., 2003)
Inter-firm Comparison	Inter firm comparison is made by some inter –firm comparison ratios based on the financial and other records of the business.
Process reengineering	The fundamental rethinking and redesign of business processes to achieve improvements in critical performance measures such as cost, quality, service, speed and customer satisfaction.(Horngren, et. al., 2003)
Kaizen costing	Kaizen costing ensures continuous improvement by supporting the cost reduction process in the manufacturing phase.

Appendix –II: Factor Analysis of Application Level of Management Accounting Techniques

Variables	Components				
	1	2	3	4	5
Budgetary control	.940				
Variance analysis	.927				
CVP analysis	.871				
Ratio analysis	.939				
Fund flow analysis	.719				
Cash flow statement analysis	.935				
ABC				.518	
Variable costing	.695				
Absorption costing				.716	
Target costing			.598		
Differential costing			.808		
Standard costing	.808				
Opportunity costing			.573		
Segment reporting	.529				
Responsibility accounting					.646
Balanced Scorecard					.865
MBE				.746	
TQM	.617				
TOC		.665			
JIT			.614		
Inter firm comparison		.640			
Process reengineering		.739			
Kaizen costing		.802			
% of variance explained	34.006	12.651	11.343	8.918	8.206
Cumulative % of variance explained	34.006	46.657	58.001	66.918	75.125

Appendix – III: Coefficients

Model	Techniques	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.868	.364		13.357	.000
	Budgetary control	.285	.170	.698	1.678	.100
	Variance analysis	.115	.170	.271	.674	.503
	CVP analysis	-.053	.126	-.129	-.420	.676
	Ratio analysis	-.165	.284	-.405	-.581	.564
	Fund flow analysis	.183	.095	.403	1.938	.058
	Cash flow statement analysis	-.149	.295	-.358	-.503	.617
	ABC	-.167	.079	-.389	-2.099	.041
	Variable costing	-.159	.098	-.385	-1.617	.112
	Absorption costing	-.139	.079	-.334	-1.763	.084
	Target costing	.122	.077	.334	1.580	.120
	Differential costing	.023	.094	.052	.243	.809
	Standard costing	-.110	.098	-.271	-1.121	.268
	Opportunity costing	.037	.079	.080	.463	.645
	Segment reporting	.173	.076	.472	2.285	.027
	Responsibility accounting	-.083	.075	-.213	-1.102	.276
	Balanced Scorecard	-.131	.075	-.284	-1.734	.089
	MBE	.034	.081	.081	.417	.678
	TQM	.066	.089	.170	.743	.461
	TOC	-.151	.085	-.366	-1.769	.083
	JIT	.023	.055	.066	.429	.670
	Inter firm comparison	.142	.064	.348	2.224	.031
	Process reengineering	-.017	.091	-.039	-.183	.856
	Kaizen costing	-.003	.070	-.007	-.036	.971

Dependent Variable: Influence in decision-making.