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   STATEMENT OF THE PROBLEM

   OBJECTIVES

   HYPOTHESES

   RESEARCH METHODOLOGY

   RESULTS & DISCUSSION

   FINDINGS

   RECOMMENDATIONS/SUGGESTIONS

   CONCLUSIONS

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CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

JOURNAL AND OTHER ARTICLES

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

CONFERENCE PAPERS

- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

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- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

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SIGNIFICANCE OF COST MANAGEMENT TECHNIQUES IN DECISION MAKING: AN EMPIRICAL STUDY ON ETHIOPIAN MANUFACTURING PRIVATE LIMITED COMPANIES (PLCs)

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ABSTRACT

The manufacturing industry plays a key role in Ethiopian economy due to its labour advantage, generating jobs, contributing to social and political stability, and adding high value exports to help the balance of payment. As Ethiopia becomes more and more active in its pursuit of global economic integration, the entry of many foreign as well as domestic companies into its own domestic market will surely intensify the competition. Recognizing the importance of cost management accounting techniques to the company's performance will help the company improve its decision making, competitiveness, reduce its operating costs and maximize its profitability. Cost Management is concerned with gathering and reporting internal financial information to facilitate decision-making process. As cost management is not required to conform to national accounting standards, it allows business to customize the cost management 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 provide the information need in decision making. This study attempts to measure the significance of cost management techniques in decision making of the selected manufacturing Privated Limited Companies (PLCs) in Ethiopia. In doing so, a total of 33 manufacturing PLCs have been surveyed with a structured questionnaire by using 5 point Likert Scale measurement from different categories of manufacturing companies. A total of 33 questionnaires were distributed. Consequently 31 questionnaires were collected at gross response rate of 94%. Findings reveal that Budgetary Control followed by Funds Flow Analysis, Absorption Costing, ABC Analysis, Segment Reporting, and finally Total Quality Management (TQM) 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 68.262 % % of the total variability has found in the usage of cost management techniques. Finally, it is also found that by using multiple regression model only 25.9% of the variation in decision making of manufacturing PLCs is explained by the 21 independent variables. So, manufacturing private limited companies have to think about production at lowest possible cost. On these circumstances, using only traditional cost and management accounting techniques are not giving the fruitful result to response to the keen competition. Management has to realize also the need for adopting the modern techniques and methods of cost management accounting techniques to evaluate outcomes associated with their operations and various problems, such as, asset utilization management, operating at reduce cost, improve profitability and optimizing the value/wealth of the firm. Therefore, manufacturing companies have to adopt advanced cost and management accounting techniques. Both traditional and advanced techniques affect the planning, control and decision making.

KEYWORDS

Cost Management Techniques, Manufacturing Companies, Mean Score, Factor Analysis, Regression Analysis.

I. 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. Cost Management is concerned with the use of information in facilitating managers to make informed business decisions effectively. Cost Management is not required to conform to national accounting standards. This allows business owners to adapt 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 provide the information need in decision making.

Managerial accounting techniques and practices have changed in response to the challenges of global and domestic competition, international markets, technological advances, and complexity of business. Adoptions of these innovations by the future management accountant will need to be knowledgeable of production, quality control, marketing, and management strategy. The results also indicate a broadening of management accounting and a trend toward the integration of management accounting information with strategic planning, production, marketing, and financial management suggesting the emergence of the integrative area of cost management.

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?"(Hoque, Zahirul AKM 1991)[1]. 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, 2004[2)]. Manufacturing Companies has been selected for conducting this study because manufacturing companies in Ethiopia are the one which most needs to implement modern concepts and techniques of cost management.

The aim of this study, therefore, is to outline the current state of the art in cost management accounting practice in manufacturing companies in Ethiopia and then to show the influence of cost management techniques in decision making. The study takes empirical approach. In doing so, the author has presented the study into five broad sections. After introduction section, in the second section the author has reviewed related literature, thirdly set the methodology of the study. Fourth section has been shown discussions and findings and finally conclusion with some research implication has been given in section five.

I.1 RATIONALE OF THE STUDY

Cost Management refers to the activities of managers in short-run and long-run planning and control of costs. Therefore, besides the traditional techniques new methods appear. Global market, international business process, technological innovation and customers' growing needs for high quality with low price focus managers" all these lead to attention to cost management. The new business environment demands relevant information and data about costs and performance within the organization's activities, processes, products, services and customers. Leading companies are using their costing systems to:

- Design products and services that both meet customers' expectations and can be produced and delivered at a profit;
- Signal where either continuous or discontinuous improvements in quality, efficiency, and speed are needed;
- Assist employees in their learning and continuous improvement activities;

- Guide product mix and investment decisions;
- Negotiate about prices, product features, quality, delivery and service with customers; and
- Efficient and effective distribution and service processes to target market and customer segments.

In recent years, the increasing level of global competition has intensified the challenges for the managers' and many experts have warned that if cost management accounting is to maintain its relevance, it needs to adopt to meet the changing needs of managers. To keep pace with this increasing market economy, it becomes imperative for the manufacturing companies to adopt a new cost management accounting techniques.

The cost management accounting literature advocates a decision relevant approach in which selling prices are determined after undertaking special studies that compare incremental revenues with incremental costs. Estimating incremental revenues requires demand estimates to be prepared for a range of possible selling prices. The optimal selling price is the price that maximizes the contribution towards common/unavoidable fixed costs and profit. Because pricing decisions have a direct effect on revenue, they have always occupied a crucial place in strategic planning. Regardless of product or industry, a well established price enables the firm to best capture the value embodied in a product and thereby establish a competitively advantageous position in the market. This can only be achieved by improving specific cost management techniques.

In Ethiopia, the research on Cost Management Accounting Practice (CMAP) is very rare that made the researcher 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.

1.2 STATEMENT OF THE PROBLEM

In today's competitive world of business, having accurate information may be the key factor in distinguishing between the loser and the winner. Using more accurate cost information while determining the optimal product mix of a company put together management to make better decisions; and as a result, may have a greater effect on the success of a company. The potential for cost reduction via product cost management techniques is enormous. However, it is assumed that there is an enormous gap between the need for and supply of cost management information from product development up to its disposal through sales in the case of Ethiopian manufacturing companies. Thus, the purpose of this study is to assess the extent to which manufacturing private limited companies have altered their cost management practices along these lines, the perception of its success and their association with several contextual factors important for effective decision making.

I.3 RESEARCH QUESTIONS

The study tried to address the following specific research questions:

- What factors have shaped, and currently influence, cost management accounting practices in manufacturing Private limited companies in Ethiopia?
- Which cost and management techniques are effective on the profit planning decision and the overall satisfaction level of these techniques in manufacturing private limited companies on the basis of perception of managers?

I.4 OBJECTIVES OF THE STUDY

1.4.1: MAIN OBJECTIVE

The overall purpose of this study is to evaluate the "**SIGNIFICANCE OF COST MANAGEMENT TECHNIQUES IN DECISION MAKING"** by Manufacturing Private Limited Companies in Ethiopia.

1.4.2: SPECIFIC OBJECTIVES

The specific objectives of the study are as follows:

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

II. REVIEW OF RELATED LITERATURE

II.1 EMPIRICAL STUDIES

The researcher has made an attempt here to review based on a few published studies made to have a picture of the findings, conclusions and suggestions forwarded by these studies with all the degree that it is going to help to identify the gaps in the literature.

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)[3].

The Industrial Revolution in the early nineteenth century resulted in the emergence factory system that dramatically changed the productions process. (Ashton, D., Hopper, T, & Scapens, R.W., 1991)[4]. 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.

More than 30 popular cost and management accounting techniques have been introduced, since 1950. According to Smith (1999)[5], the major developments in management accounting since 1950s can be explained as follows:

- Cost and management accounting innovations in 1950s can be identified as: Discount cash flows, Total quality management, Colum charts and Optimum transfer pricing.
- Cost and management accounting innovations in 1960s can be identified as: Computer technology, Opportunity cost budgeting, Zero-base budgeting, Decision tree, Critical path scheduling, and Management by objectives.
- Cost and management accounting innovations in 1970s can be identified as: Information economics and agency theory, Just-in-time scheduling, Strategic business units, Experience curves, portfolio management, Materials resource planning, Diversification, Matrix organization and Product repositioning.
- Cost and management accounting innovations in 1980s can be identified as: Activity based costing, Target costing, Value-added management, Theory of constraints, Vertical integration, Private labels and Benchmarking.
- Cost and management accounting innovations in 1990s can be identified as: Business process reengineering, Quality functional deployment, Outsourcing, Gain sharing, Core competencies, Time-based competition and Learning organization.

Chenhall H. Robert & Smith Langfield Kim (1998)[6] have 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)[7] 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)[8] 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 GMC Philip & Kerckhoffs Christian (2005)[9] have 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 BS & Saha Subhashish (2005)[10] have 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)[11] 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.
Cadez Simon (2006)[12] 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.
To examine the status of use of management accounting techniques in the manufacturing enterprises of Bangladesh, a list of traditional and modern management accounting tools were identified and the extent of their use was evaluated in the study of Bidhan, C.M (2007)[13]. It was 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) were using some of techniques like JIT and TQM.
Hart F. J. De & Wet De Johannes (2008)[14] has investigated that how existing management accounting and financial management techniques can be adjusted to incorporate the EVA perspective.
Hoozee Sophie & Bruggeman Werner (2010)[15] 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.
Chand Mohinder & Dahiya Ashish (2010)[16] 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.
A recent study (Yeshmin and Fowzia, 2010)[17], aimed to examine the use of the management accounting techniques in manufacturing and service industries of Bangladesh for discharging managerial functions. To achieve this objective, 151 organizations from manufacturing and service industries had been surveyed. By identifying 14 management techniques, three factors had been identified to determine the variability's of the usage level in managerial functions. The findings revealed that management accounting techniques such as financial statement analysis, budgetary control, CVP analysis, variance analysis and fund flow analysis were common 14 both the industries and were used frequently in managerial functions.
The present study has emphasized on the level of usage of twenty-one management accounting techniques in making effective decisions by the different manufacturing private limited companies in Ethiopia. This study would be of particular relevance to Ethiopia, because it would help to assess the significant influence of management accounting techniques in decision-making by manufacturing companies in Ethiopia.

III. METHODOLOGY OF THE STUDY

III.1 STUDY DESIGN

This study has employed empirical research design following a qualitative and quantitative approach to assess the significance of cost management accounting techniques in decision making evidence from Ethiopian Manufacturing Private Limited Companies.

III.2 DATA SOURCE AND COLLECTION METHODS

The data needed for this study is gathered mainly from primary data. In gathering primary data structured survey questionnaire has been used. The primary data was collected from the finance staff and top management of the respected companies. A total of 33 questionnaires were distributed. Consequently 31 questionnaires were collected at gross response rate of 94%. The application of the cost and management accounting technique is measured by the Scaling Technique and are presented in terms of its Mean Value/ Score based on 5 point Likert measurement scale (where 1 represents always, 2 represents frequently, 3 represents some times, 4 represents rarely, and 5 represents never) to each respondent. All have responded and the questionnaires are gathered. Secondary data is extracted from different books, local and international published articles, websites, seminar papers etc.

III.3 SAMPLING DESIGN

The sample frame employed for this study is ERCA list of firms.. A disproportionate stratified sampling design is followed where sample from each stratum is selected using convenient sampling technique. The criterion used to select the sample firms is that those manufacturing PLCs having at least five years capital investment, that is, from 2006/7 to 2010/11. The list was substantially refined and modified to obtain a list of firms consistent with the aims of the study and within the parameters the Ethiopia definition of a Private Limited Companies (PLCs). The study takes a sample size of 33 PLCs who fulfill this criterion. The companies selected as a sample were from both public and private sectors. Total 33 listed manufacturing companies have been surveyed. Among those, 6 textile & wool, 6 building materials, 7 food and beverage, 7 leather products and 5 hides and skin companies have been considered. The companies selected as a sample were from both public and private sectors. Time period of the study was March to July, 2012.

III.4 METHOD OF DATA ANALYSIS

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

- **Mean Score** 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.

III.5 SCOPE AND LIMITATION OF THE STUDY

The present study has emphasized on the level of usage of twenty one cost management accounting techniques (See Table1) only in making effective decisions by manufacturing companies in Ethiopia and the **Limitations are:**

- The study is restricted to manufacturing Companies who are under engaged in operation for five consecutive years for the period of 2007– 2011 only. Other manufacturing companies' are beyond the scope of this study.
- Since this study was based on the measurement of managers' perception, a bias may occur in the survey. Therefore, the results may observe some nonobjective.
- Several behavioral and organizational variables (structure and Culture) are important to cost management accounting practice but will not be examined here.
- Difficulties in collection of data.

IV. DISCUSSIONS AND FINDINGS

The more the development of the market economy, is the more the significance of the cost and management accounting. To keep pace with this increasing market economy, it becomes imperative for the manufacturing companies to adopt a new cost management accounting techniques. It is also important for the private limited companies in Ethiopia.

Cost management accounting tools are essential to exert control over cost and to appraise management performance in different segments of an organization particularly in manufacturing organizations (Hilton, 2000)[18]. The implementation of the total cost management accounting methodology will help top management in their decision making, to select projects and prioritize them, and give the final decision whether to go or not, and if they decide to go whether to make it or buy it. Cost management accounting embraces a range of techniques essential to all phases of an asset life cycle – from providing reliable information for strategic decision making, to managing construction and maintenance costs.

A firm that fails to reduce costs as rapidly as its competitors will find its profit margins squeezed and its existence threatened. The competitive environment demands the development of sophisticated cost management accounting practices to keep cost down. From early on, the Japanese manufacturers recognized that the most efficient way to keep costs down was to design them out of products rather than to reduce costs after products entered production.

Nowadays, companies and managers need cost systems to perform three primary functions:

- Valuation of inventory and measurement of the cost of goods sold for financial reporting - because of the external circumstances with investors, creditors, regulators and authorities;
- Estimate of the cost of activities, products and services and customers – because of the internal managers needs to understand and improve the economics of their operations;
- Provide accurate and timely cost information and economic feedback to managers and operators about process efficiency to make both strategic decisions and operational improvements.

Under these conditions managers need to rethink their managerial practices and in close relation to this they need to reshape their existing cost and management accounting systems.

IV.1 DESCRIPTION OF COST MANAGEMENT ACCOUNTING TECHNIQUES

Table 1 below depicts the description of the twenty one qualitative and quantitative management accounting techniques are observed.

TABLE 1: DESCRIPTION OF COST MANAGEMENT ACCOUNTING TECHNIQUES

Techniques	Descriptions
QUANTITATIVE MANAGEMENT ACCOUNTING TECHNIQUE	
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)[19]
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[20])
Cost-Volume-Profit Analysis(CVP)	Cost –Volume- Profit analysis helps managers understand the relationships among cost, volume and profit (Garrison and Noreen, 2004)[20]
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)[21]
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)[22]
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)[23]
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)[21]
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)[24]
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.
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.
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)[20]
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)[24]
QUALITATIVE MANAGEMENT ACCOUNTING TECHNIQUE	
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)[20]
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).
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., 2002)[34]
Kaizen costing	Kaizen costing ensures continuous improvement by supporting the cost reduction process in the manufacturing phase.
QUALITATIVE &QUANTITATIVE MANAGEMENT ACCOUNTING TECHNIQUE	
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.

IV.2 DESCRIPTIVE STATISTICS

To examine the status of use of cost management accounting techniques in manufacturing PLCs in Ethiopia, a list of twenty-one traditional and modern cost management accounting techniques are identified and the extent of their usage was measured by the Scaling Technique and are presented in terms of its Mean Values/ scores under Table 1 for 31 sample manufacturing PLCs that have been in operation for the period of 2006/7-2010/11.

To determine the adoption levels of different cost management tools, the author has applied mean analysis. Here, the author has used 5 –point measurement scale where 1 denotes "no adoption" and 5 denotes "highest adoption".

TABLE 2: RESPONSE TO RELATIVE SIGNIFICANT OF THE TECHNIQUES

S. No.	Techniques	No. of Respondents	Degree of Application SCALE Always 5	Frequently 4	Sometimes 3	Rarely 2	Never 1	Total	Mean Score
1	**Budgetary Control**	31	28 (92.00)	3 (8.00)	0 (0.00)	0 (0.00)	0 (0.00)	31 100.00	**4.90**
2	**Cash-flow Statement**	31	25 (84.00)	6 (16.00)	0 (0.00)	0 (0.00)	0 (0.00)	31 100%	**4.81**
3	**Absorption Costing**	31	20 (71.00)	9 (25.00)	2 (4.00)	0 (0.00)	0 (0.00)	31 100%	**4.58**
4	**Variance Analysis**	31	16 (58.00)	12 (35.00)	3 (7.00)	0 (0.00)	0 (0.00)	31 100%	**4.42**
5	**CVP- Analysis**	31	12 (47.00)	11 (34.00)	8 (19.00)	0 (0.00)	0 (0.00)	31 100%	**4.13**
6	**Ratio Analysis**	31	10 (40.00)	13 (41.00)	8 (19.00)	0 (0.00)	0 (0.00)	31 100%	**4.06**
7	**Target Costing**	31	0 (0.00)	11 (43.00)	18 (53.00)	2 (4.00)	0 (70.00)	31 100%	**3.29**
8	**Fund Flow Analysis**	31	0 (0.00)	9 (36.00)	18 (54.00)	5 (10.00)	0 (0.00)	31 100%	**3.23**
9	**ABC**	31	2 (11.00)	4 (18.00)	12 (41.00)	13 (30.00)	0 (0.00)	0 100%	**2.84**
10	**Differential Costing**	31	0 (0.00)	7 (35.00)	14 (52.00)	1 (2.00)	9 (11.00)	31 100%	**2.61**
11	**Variable Costing**	31	0 (0.00)	5 (27.00)	6 (25.00)	15 (41.00)	5 (7.00)	31 100%	**2.35**
12	**Standard Costing**	31	0 (0.00)	0 (0.00)	18 (75.00)	5 (14.00)	8 (11.00)	31 100%	**2.32**
13	**Segment reporting**	31	0 (0.00)	0 (0.00)	0 (0.00)	17 (71.00)	14 (29.00)	31 100%	**1.55**
14	**Responsibility Accounting**	31	0 (0.00)	0 (0.00)	0 (0.00)	5 (28.00)	26 (72.00)	31 100%	**1.16**
15	**JIT**	31	0 (0.00)	0 (0.00)	0 (0.00)	3 (18.00)	28 (82.00)	31 100%	**1.10**
16	**Total Quality Management**	31	0 (0.00)	9 (40.00)	17 (53.00)	5 (7.00)	0 (0.00)	31 100%	**3.13**
17	**MBE**	31	0 (0.00)	0 (0.00)	6 (37.00)	6 (24.00)	19 (39.00)	31 100%	**1.58**
18	**Process reengineering**	31	0 (0.00)	0 (00.00)	2 (17.00)	1 (5.00)	28 (78.00)	31 100%	**1.16**
19	**Kaizen costing**	31	0 (0.00)	0 (0.00)	0 (0.00)	4 (23.00)	27 (77.00)	31 100%	**1.13**
20	**Theory of Constraints**	31	0 (0.00)	0 (0.00)	0 (0.00)	3 (18.00)	28 (82.00)	31 100%	**1.10**
21	**Balance Scorecard**	31	0 (0.00)	0 (0.00)	10 (46.00)	14 (43.00)	7 11.00)	31 100%	**2.10**

Source: Field survey results

Table 2 above reveals that among the mean score of the 17 numbers quantitative management accounting techniques, The author has found that the manufacturing PLCs frequently apply **budgetary control**, **cash flow statement analysis**, **Absorption Costing**, **variance analysis**, **CVP analysis**, and **Ratio Analysis**. **TQM** is 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.

IV.3 FACTOR ANALYSIS

Factor analysis has been conducted to measure the variability of the Management Accounting Techniques in decision making. Table 3 below demonstrated the results of this analysis.

TABLE 3: FACTOR ANALYSIS OF APPLICATION LEVEL OF MANAGEMENT ACCOUNTING TECHNIQUES

variables	components				
	1	2	3	4	5
Budgetary Control	0.980				
variance analysis	0.945				
CVP- Analysis	0.873				
Ratio Analysis	0.725				
Fund Flow Analysis	0.632				
Cash-flow Statement	-0.971				
ABC				0.845	
Variable Costing			0.559		
Absorption Costing	0.896				
Target Costing			0.637		
Differential Costing		0.524			
Standard Costing				0.668	
Segment reporting			0.927		
Responsibility Accounting					0.463
JIT			0.875		
MBE				0.761	
Total Quality Management	0.639				
Theory of Constraints		0.546			
Process reengineering		0.789			
Kaizen costing		0.871			
Balance Scorecard					0.652
% of variance explained	**41.293**	**8.532**	**7.243**	**6.826**	**4.367**
Cumulative % of variance explained	**41.293**	49.825	55.069	59.895	**68.262**

Source: Regression results

The author has identified five factors in terms of eigenvalue of larger than 1.0 for application level of managerial techniques in making decisions by manufacturing PLCs using the factor analysis of 21 statements. These five factors can explain 68.262 % of the total variability in the application of management accounting techniques in manufacturing organizations.

The *first* factor as the highest loadings can alone explain 41.294% of the total variability of application related to eight variables pertaining as budgetary control, variance analysis, CVP analysis, ratio analysis, fund flow analysis, cash flow statement analysis, absorption costing, and total quality management. The *second* factor exhibits largely loadings for four variables which are relating to differential costing, theory of constraints, process-reengineering & kaizen costing. This factor can alone explain 8.532% of the total variability of application. The *third* factor having defined by four variables is variable costing, target costing, segment costing and JIT. This can settle 7.243% of the total variability. The fourth one extracted three variables as ABC, standard costing and MBE to show 9.826% in the variability of application. And the last factor loaded 4.367% of the variability of application contains two variables as responsibility accounting and balance scorecard. Now the author is trying to find out the level of significance of managerial techniques in decision making. In this regard the author has done multiple regression analysis.

IV.4 REGRESSION ANALYSIS

To investigate the influence of the managerial techniques in decision making on the basis of perception of managers, the researcher has used multiple regression analysis.

The model is specified as follows:

$IDM=\beta_0+\beta_1X_1+\beta_2X_2+3_3X_3+\beta_4X_4+\beta_5X_5+\beta_6X_6+\beta_7X_7+\beta_8X_8+\beta_9X_9+\beta_{10}X_{10}+\beta_{11}X_{11}+\beta_{12}X_{12}+\beta_{13}X_{13}+\beta_{14}X_{14}+\beta_{15}X_{15}+\beta_{16}X_{16}+\beta_{17}X_{17}+\ \beta_{18}X_{18}+\ +\ \beta_{19}X_{19}+\ \beta_{20}X_{20}+\beta_{21}X_{21}+ ei$ --------- eq. 1

Where:

- IDM = Influence in Decision making
- β_0 = Constant
- β_1 = Coefficient of Budgetary Control
- β_2 = Coefficient of variance analysis,
- β_3 = Coefficient of CVP- Analysis,
- β_4 = Coefficient of Ratio Analysis,
- β_5 = Coefficient of Fund Flow Analysis,
- β_6 = Coefficient of Cash-flow Statement,
- β_7 = Coefficient of ABC,
- β_8 = Coefficient of Variable Costing,
- β_9 = Coefficient of Absorption Costing,
- β_{10}= Coefficient of Target Costing,
- β_{11} = Coefficient of Differential Costing,
- β_{12} = Coefficient of Standard Costing,
- β_{13}= Coefficient of Segment reporting,
- β_{14} = Coefficient of Responsibility Accounting,
- β_{15} = Coefficient of JIT,
- β_{16}= Coefficient of, MBE,
- β_{17} = Coefficient of Total Quality Management,
- β_{18} = Coefficient of Theory of Constraints,
- β_{19}= Coefficient of Process reengineering,
- β_{20} = Coefficient of Kaizen costing,
- β_{21} = Coefficient of Balance Scorecard, and
- ei=The Error Term

TABLE 4: MODEL SUMMARY

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.721(a)	0.452	0.259	0.5275

Source: Regression results

TABLE 5: MODEL ANOVA

Model	R	Sum of Squares	Df	Mean Square	F	Significance
1	Regression	12.098	21	0.573	2.668	0.012
	Residual	13.673	15	0.269		
	Total	25.771	35			

Source: Regression results

TABLE 6: SIGNIFICANCE OF COST MANAGEMENT TECHNIQUES IN DECISION MAKING

Factors	Standardized Coefficients	Mean
Budgetary Control	0.695	0.100''
Fund Flow Analysis	0.442	0.058''
Absorption Costing	-0.381	0.084''
ABC	-0.269	0.041'
Segment reporting	-0.493	0.027'
Total Quality Management	0.377	0.031'

'significant at 5%, ''significant at 10%

TABLE 7: COEFFICIENTS

Model	Techniques	Un-standardized Coefficients		standardized Coefficients	t	Significance
1		B	Std. Error	Beta		
	(Constant)	4.762	0.367		12.698	0.000
	Budgetary Control	0.294	0.189	0.695	1.779	0.100
	variance analysis	0.115	0.189	0.281	0.783	0.522
	CVP- Analysis	-0.061	0.136	-0.137	-0.451	0.564
	Ratio Analysis	-0.175	0.256	-0.453	-0.531	0.549
	Fund Flow Analysis	0.193	0.095	0.442	1.949	0.058
	Cash-flow Statement	-0.218	0.391	-0.362	-0.511	0.661
	ABC	-0.178	0.094	-0.269	-2.117	0.041
	Variable Costing	0.038	0.076	0.090	0.452	0.659
	Absorption Costing	0.171	0.074	-0.381	1.535	0.084
	Target Costing	0.136	0.078	-.353	1.470	0.124
	Differential Costing	0.025	0.084	0.063	0.251	0.705
	Standard Costing	-0.119	0.098	-0.361	-1.231	0.357
	Segment reporting	-0.142	0.075	-0.493	-1.654	0.027
	Responsibility Accounting	-0.071	0.075	-0.313	-1.117	0.286
	JIT	0.033	0.055	0.066	0.429	0.672
	MBE	0.044	0.078	0.078	0.425	0.641
	Total Quality Management	-0.153	0.085	0.377	-1.668	0.031
	Theory of Constraints	0.152	0.055	0.359	0.469	0.073
	Process reengineering	-0.015	0.087	-0.048	-0.164	0.848
	Kaizen costing	-0.005	0.070	-0.008	-0.043	0.745
	Balance Scorecard	0.066	0.089	0.175	0.782	0.467

Source: Regression results

The regression result shows that the multiple regression model is less significant (Table 5). The coefficient of determination indicates only 25.9% (Table 4) of the variation in decision making of manufacturing organizations is explained by 21 independent variables. It was observed that six factors (Table 6) are significant in decision making by manufacturing PLCs. The result of coefficients (Table 7) 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.

From the regression results it can be concluded that among the six influential factors Budgetary Control is the most significant factor for decision making in manufacturing PLCs in Ethiopia context. It can also be noted that other than these six techniques the remaining fifteen factors have insignificant influence in decision making.

V. CONCLUSION AND RESEARCH IMPLICATIONS

V.1 CONCLUSION

From this research, it can be concluded that among the cost and management accounting techniques investigated, manufacturing private limited companies in Ethiopia have been using widely the following techniques: Budgetary Control followed by funds flow analysis, Absorption Costing, ABC analysis, segment reporting, and finally total quality management (TQM)). These were strongly influencing the planning, controlling and decision makings. The remaining other techniques have either slightly been used or never have been used. It is evident from these investigations that the companies are heavily relaying on the traditional methods.

Cost management refers to the activities of managers in short-run and long-run planning and control of costs. Therefore, besides the traditional techniques new methods appear. Global market, international business process, customers' growing needs for high quality with low price focus managers' and attention to cost management have contributed for these. At the inception of cost accounting concept, manufacturing companies used traditional cost and management accounting techniques. Now, competition and complexity of the structure of production process of products have become increased. So, manufacturing private limited companies have to think about production at lowest possible cost. On these circumstances, using only traditional cost and management accounting techniques are not giving the fruitful result to response to the keen competition. Management has to realize also the need for adopting the modern techniques and methods of cost management accounting techniques to evaluate outcomes associated with their operations and various problems, such as, and asset utilization management, operating at reduce cost, improve profitability and optimizing the value/wealth of the firm. Therefore, manufacturing companies have to adopt advanced cost and management accounting techniques. Both traditional and advanced techniques affect the planning, control and decision makings.

V.2 RESEARCH IMPLICATIONS

This paper has laid some groundwork to explore the significance of cost management accounting in decision making by Ethiopian selected manufacturing private limited companies upon which a more detailed evaluation could be based. Further work and detailed study is required to assess the application of CMAT in decision making to represent the total population of manufacturing companies. 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 private limited companies depart that companies from the maximum benefit of usage of management accounting techniques in decision making.

This study is based on few structured questionnaire in survey and some secondary data. Some cost management tools have been considered. But there is huge number of cost management tools. Only usage and application in decision making have been considered but what are the reasons behind it have not been concentrated. If the study considered the qualifications of them, the finding might be different. This study lacks consideration of a good number of cost management tools and also the level of the qualifications of them towards justification of their responses. Also merely manufacturing organization has been considered. The study could consider the usage and satisfaction levels of service organizations also. That prospect is kept open for further research.

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