

# Providing a model of management accounting to reduce costs for economical firms by combining two strategic instruments of value engineering and target costing: A case study in Cement Co. SAMAN West

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## Abstract

With the increasing development and issues related to WTO countries to join a progressive organization, the necessity of the new management accounting techniques can be felt more than ever important. At the present time, Costing Value Engineering and Target, which are widely used in various industries to developing countries cement companies are used to settle the West in this matter. In order to successfully implement value engineering and target costing, it is required for all companies and manufacturers in various industries, while maintaining the quality and performance of their products, pay particular attention to this aspect of their products, which are still very helpful in reducing the competitive prices of its products, its share in increasing in the market and increase their profitability. Therefore, methods to reduce costs have been considered by enterprises for its huge investments have been made localization and institutionalization. The aim of this new approach in management accounting research enterprise to reduce costs by combining the two tools is of strategic value engineering and target costing. According to the findings, we can say that customer satisfaction, product design, communication with suppliers of raw materials for durability and longevity of the company is critical.

**Keywords:** accounting, management, business, engineering, target price

## Introduction

Today, advances in technology and changes in markets for goods and services and consequently lead to higher customer expectations, devising new methods

and systems of accounting has been (Everaert *et al.*, 2006). Among the new accounting system management, value engineering and target costing is based on. Philosophy based costing requires the application of cost management is a dynamic and constructive process at various stages of production planning and product manufacturing is done. This saves the time of traditional values or standards-based activities are not detected (Abdi, 2002). Today, the firm was closely associated with the economic customers and more profits are seeking to conclude that the reduced cost of production and service delivery, there is a direct relationship with increase profitability. One way to cut costs, the transition from traditional to modern accounting is an accounting system. Fierce competition on the international level, often including manufacturing and service firms, economic institutions, banks and ... Which makes their products and services with higher quality and lower cost to market (Ibusuki and Kaminski, 2007). Value Engineering and Target Costing as an important tool to increase competitiveness, has been created. Have a competitive product factors such as cost, efficiency, performance, timely delivery of goods, quality and flexibility to address. The importance of these factors varies from product to product and from the market. manufacturer cannot be filled without regard to its future competitive prices that customers are willing to pay to pay for the product produced (Gandhinathan, Raviswaran, & Suthakar, 2004). In the present economic enterprises to accelerate the manufacturing-oriented to customer-oriented, traditional production method of lessee to lossless new mode of production, processing and production values were limited to successfully pass the economy and millions of the goals and develop appropriate and effective national and international levels become in (Chin Ho & Hsin Lin, 2009).

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- When approaching market saturation and balance supply and demand in the market
  - increasing pressure to release the country from importing and ...
  - Increased pressure from customers for lower prices for consumers and domestic
    - increasing costs and the cost of industrial production in the past
    - Significant reduction in the rate of domestic manufacturers

Hands and on the most crucial to the administration and management costs, and the most intelligent and powerful challenge to maintain and expand market share in the country's economic firm. Reduced costs and production costs of the firm other countries and urged the necessity of a comprehensive national corporations and CEOs of various companies in the market and achieve competitive today and to realize these demands and the need to have emphasized (Ax, Greve, and Nilsson, 2008).

### Review of Related Literature

Studies show that in few studies have been conducted value engineering and target costing. Some research to identify barriers to the development and application of tools, management accounting studies have (Dastgir and Sokhanvar, 2008) management accounting jobs, spaces.

Khoddami poor and the Taliban (2010) investigated the application of management accounting tools in manufacturing firms listed in Tehran stock exchange and the responses of 112 questionnaires were distributed among the managers of these firms, concluded that the budgeting, analysis and break-even analysis is widely used to analyze deviations. This is because they require the SEC to consider the proposed annual budget. The results of their research, process re-engineering tools and practices emerging as a goal-based costing, management accounting, is rarely used.

In this study, the cost-benefit of using management accounting tools, lack of skilled manpower and cross-sectional and short-term policies by the Government, as the biggest barriers to the use of the tools of management accounting is introduced.

Fleece study (2007) on the application of management accounting techniques in manufacturing firms' decision shows that the Bangladeshi public and private sectors of the country's most manufacturing companies do not use tools of modern management accounting, only a small number of the

companies that few techniques, such as value engineering and target costing system is used to carry.

Dlgan (2001) Evaluation of the Niger Company stated in the continued management accounting, financial control and the cost of providing information for managerial planning and control to take over the and using budgets, cost accounting techniques, decision analysis and responsibility accounting assessment, planning and control information required to provide. The results indicate that the management accounting in Nigeria, the second phase is completed and more companies are on the verge of a third phase Hey.

Articles by Nishimura, in conjunction with the three Asian countries of Singapore, Malaysia and Thailand in 2002 was carried out and the results are revealed through management accounting practices in the countries in transition from stage to stage is traditional. It was also found that almost never advanced management accounting methods chosen by firms in three countries, has never been used.

In Malaysia, AR *et al* (2004) also found that the procedures associated with the first and second stages of the evolution of management accounting in selected Malaysian dominant companies runs in the third stage of the evolution of management accounting methods, such as: costing the company, MRP for manufacturing and Kaizen model is very limited.

Listen and Chan (1997) Improving all aspects of management accounting practices in Singapore were reported and most of the companies, different accounting methods have been used in business management. Showed that in contrast to traditional methods, such as value engineering, target costing less accepted and used by the same factors as the type of multinational corporations Jamandn rival is.

Subsequent research, again by Chan (2002) was conducted in Singapore and aims to identify the implementation of management accounting practices in its business since 1997. The results showed that little progress since 1997 in the field of management accounting has been done, it was also inefficient companies in Singapore costing tools and techniques of modern management accounting is not applied. This is because the methods developed many complications and is associated with high volumes of consumption of resources.

Research conducted by Malyah and colleagues (2004) in four Asian countries, including (Malaysia, Singapore, China and India) shows that the use of modern management accounting techniques such as the system time, activity-based costing, total quality management, process reengineering, life cycle assessment and low expense. Moreover, it can be said that it

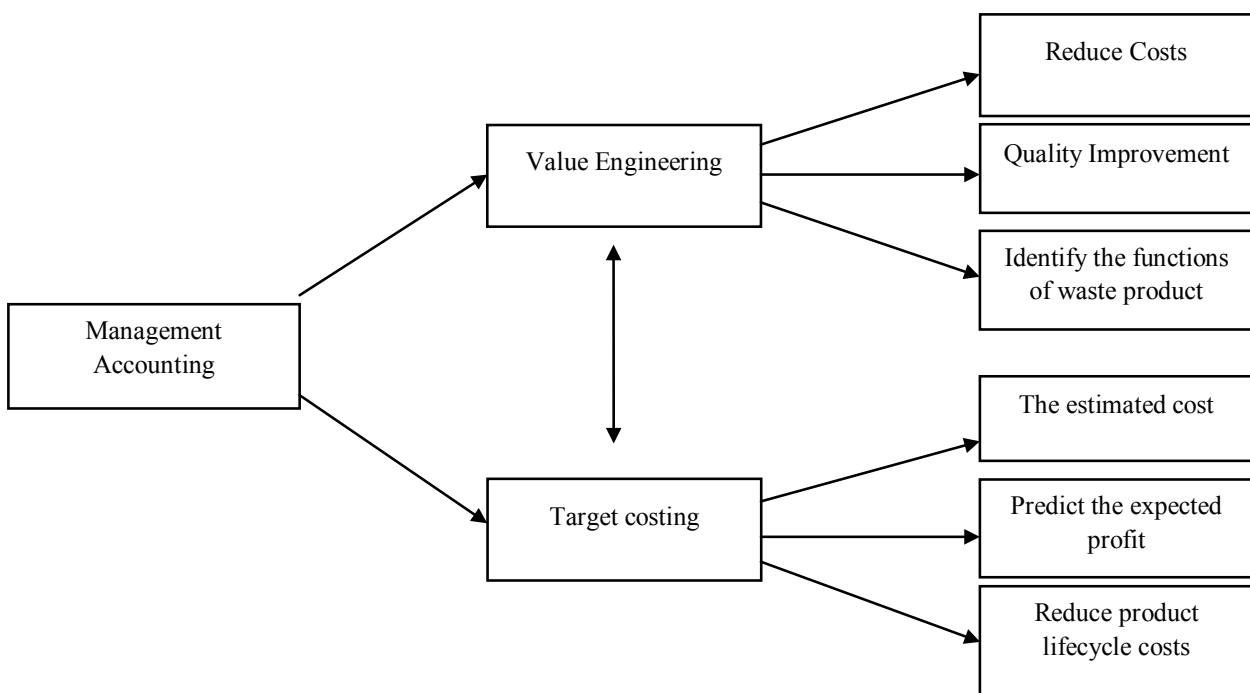
was not used at Ygyrd. In contrast, conventional techniques such as management accounting, costing, standard deviation analysis, traditional budgeting and cost analysis - volume - profit Ygyrd are still widely used.

## Theoretical

### *Management Accounting*

In the late nineteenth century by Frederick Taylor's scientific management as a discipline has been introduced. A summary of the scientific management, orderly and logical way to deal with organizational issues in order to find the best way to do any work and the complete detailed information of what is happening and the consequences of any change that focuses on. It requires a great deal of information management products and services, such as cost, production rate, cost of parts, production capacity and price of products and services from various sources such as

machinery production capacity and to analyze the data (Cooper & Slagmulder, 1997). The current gave rise to the need for information, especially financial information. Managers use financial information led to increased production costing methods, improve and develop services and activities and financial aspects more detailed information is provided (Abdi, 2009). Integrating Strategic Value engineering and costing two tools based on the between management accounting techniques, the cost of the product will be significantly changed Economic agents to produce the products that they are and still had not reached the production stage. Future product cost management is very important, because this will give us the confidence that before the beginning stages of production to ensure profitability. If the product design stage to mass production stage is passed, it will be very difficult, without redesigning it, it caused a marked decrease in costs (Hauser & Clausing, 1988).



**Figure 1.** This conceptual model: integrating tools target value engineering and cost

### *Value Engineering*

Value engineering is a systematic study of the factors influencing the cost associated with maintaining the quality of products to find the best ways to reduce costs and deliver it to the level of goal setting 18. Value engineering to reduce costs through improved design (along with maintaining quality) and redundant functions of identifying the product the customer is willing to pay to help management

(Ansari & Bell, 1998). By the engineering team of various experts in various fields of engineering, product design, manufacturing, marketing, sales and finance will be done at the design stage (Ax, Greve, & Nilsson, 2008). Value analysis and value engineering syllabus for each of the basic constituents of cost are calculated and is trying to address the challenges of cost unless the revised NFP aspects, such as having a variety of products to be considered (Abdi, 2002).

### *Target costing*

Target costing, strategic cost management is a subject of debate, it is estimated that the cost for a product or service based on the sale of products or services, based on the company's earnings (earnings quality) is achieved. In fact, the target costing approach to achieving cost competitive products or services on condition that the price is determined based on the expected profit is predetermined. Therefore, the general equation (cost-profit=sales), sales and profits, and the firm is assumed to be predetermined. So would the costs, and the cost to a level that assumes predetermined selling price and the minimum expected profit, the cost does not exceed the amount anticipated. Thus, target costing, say, part of a comprehensive management process for the organization to survive in an increasingly competitive environment. Target Costing as a whole, is an approach to determine whether a specific product quality and functionality, at what price must be produced in order to predict the sale price to the expected profit. The target costing is an important part of a comprehensive management process that aims to help organizations to survive in the increasingly competitive environment. In this sense, the name Bymismay target costing is a product costing system is looking for, but as Technology Management reductions in the administrative costs of the product life cycle (Cooper & Slagmulder, 1997).

Cost accounting management requires the use of target costing:

- The decision on whether the product is to be sold;
- allows to determine the selling price of the competition and
- costs management in order to obtain the expected profit

Are a circle and the circle Engineering, Sales and marketing, working closely with (Hales & Staley, 1995). The target based costing, cost reduction and cost-effective option in the management plans for research, development and design (pre-production) is. Because the processes and production methods, equipment type, and type of product is already in the planning stage and established clear, efforts to reduce costs in the production phase takes place, the effect is limited to be present (Dekker & Smidt, 2003).

The dominant features of the method aimed Based Costing Based Costing method of characteristics can be summarized as follows: expected costs must be spent is determined and then the cost will be the company spent on product design and the feasibility of the plan, implement it (Gandhinathan, Raviswaran, & Suthakar, 2004). This is the way to understand customers:

1. What products do they want?
2. How much are willing to pay for it?
3. Does the money that customers are willing to pay for such a product, the company can benefit gained?

Before doing any work to be producing all these questions will be answered. Control the cost of the initial phase (product design) is done. As we know, 70 to 90 percent of production costs in the design stage of a product are to be controlled. Therefore a special focus on the product design is based costing to the beginning, to avoid duplication of costs to control. Production processes and product delivery are designed simultaneously. This is for the following reasons: Ensuring that all the features customers expect from a product with an acceptable cost, is estimated remove stretch to add features to the product for their customers value not only increases production costs. Cost control in all stages of the product life cycle is done. The steps are as follows: 1- Design 2- generation 3- delivery and commissioning of 4- costs the customer to obtain ownership of the product bears (e.g. costs that one must take to make a product to purchase) 5- Service and Maintenance 6- Destroy and recycling. The main purpose of cost control in all stages of the product lifecycle, lowering all the costs on the price of the product is done until the customer is willing to pay for the product. The product is economic (Hales & Staley, 1995). to minimize conflicting In other words, these are part of the agency's decision not to reduce their costs, which increase the cost of other parts of The team members are from the following sectors: 1- Marketing 2- Design 3- Production of 4- Order (order, are producers of raw materials for the Based Costing describe the process (Ribbens, 2000). The goal of a two-step process to determine the cost-based costing and the cost of achieving that aim are described in the following outlines.

### *Determination of the target cost*

The cost of Based Costing in the first step, the determination of costs or in other words, the cost of the product, the company is authorized to expend considered. Therefore, firms should attempt to perform the following actions: Of the product and its market. In the second step, according to research done by the company in the market to meet customer needs, a concept or a primitive type of product is introduced to the market. At this stage, the firm decides whether to introduce completely new product to the market, or an alteration of their previous products introduced to the market again does anyway, enough of your product to meet the need



for change in order to cope with the target market. After the company's product could cope response to customer needs, it is time to set prices for the product. Price determined for the product must have two characteristics: firstly and secondly, that the customer has accepted the product provider to compete with the prices of other firms. To determine the price, there are several methods. Those prices can be made by adding (reducing) the value-added features to the product (decrease) the current price of the product obtained. Another way is to bid the product design team consensus. Third method of determining a price that is thought to contribute to creating a favorable market for the company. The fourth step in determining the cost, the expected profit of the company. Based Costing method instead of focusing on return on capital, return on sales, focus your attention on it (Ax, Greve, & Nilsson, 2008). This can be explained by the following reasons: Due to the variety of products on the market today, they calculate the return on investment for their individual work is painstaking and time-consuming is (Ellram, 2006). In order to determine the rate of return on sales, the company can take advantage of the following ways:

- 1) Expected rate of return
- 2) Historical return rates for similar products
- 3) The industry average for similar products

Since the rate of return on sales during the product life cycle fluctuations, the rate of return for the company instead of a single product, the return rate for total sales during the product life cycle is calculated (Hales & Staley, 1995). The final step of the cost, the cost calculation is based on data collected in the previous steps.

### *Achieving cost targets*

To achieve the goal of cost, should always be considered the fact that the products are produced to meet the needs of customers at the same time that costs more than the cost of production, not because it failed to destroy the profit the company expects will result. Therefore, the customer must reduce property values declined and the features that add value for the customer is to be avoided, and the only cost increases (Dekker & Smidt, 2003).

### *The cost of achieving*

The cost gap between current expenses and current expenses allowable costs are determined based on the following elements: Components of the current crop of current suppliers of raw materials, production processes, current products, current product distribution systems, in other cases (Han, *et al.*, 2001). Analysis of

the gap between the cost and the current cost is based on product life cycle. Eliminate the gap between the cost and the current cost of production. In this stage, using techniques and tools aimed Based Costing 're trying to eliminate the gap between the cost of such a bargain with suppliers of raw materials, to reduce the price of raw materials and so on. One of the main instruments used to eliminate the gap between the cost of costing based on engineering design (Chin Ho & Hsin Lin, 2009), which is explained below using the example discussed (Gandhinathan, Raviswaran, & Suthakar, 2004).

### *Costing process based on objective*

Objective Based Costing must be run in a certain order. Thus begins the process of trying to be the price that customers are willing to pay and the needs and specifications of the products that they want to be communicated to the market analysis helps us to determine the location of life pay (Everaert, 2006).

### *Product costing based on market-determined allowable cost*

Costing is based on the analysis of market conditions. The aim is that the selling price before the product will be designed to be specific. The company must specify the type of function and quality of future products and to determine the output based on a predetermined price, will be successful or not? The usual starting point for determining a desired profit margin product, profits are the same products (Monden, 1995). If all other conditions are constant and equal, this method can be used for the purpose of profit. But competitive pressures associated with the condition can lead to determine the profitability of the company, the profit margin for each product, the profit margin of the product life cycle, which should reflect economic conditions it is (Hauser & Clausing, 1988). The result is that the companies that manufacture products with long life cycles and large investments are often based on the use of life cycle costing shall stress the unwillingness product. Because companies can reduce their costs to achieve considerable in the manufacturing process and product life cycles, reduce costs. To determine the appropriate selling price, function and quality of product desired, may be allowed to deduct the cost from the selling price of the margins achieved (Jariri & Zegordi, 2008).

### *Costing of the product*

Allowable cost, capabilities and competencies designers and suppliers to reduce costs not considered. But when the product is available at an acceptable cost is a higher level of product-level target

costing is entitled. But if the company is going to produce the same date, the cost of achieving material cost increases we now call it. If the current cost to produce future gains realized from the reduction of the deficit, we will have the cost.

These objectives will be achieved at the expense of reducing dynamic and significant efforts should be made in the design of the final product ingredients. But the difference between the cost and the cost of legal challenges to the strategic cost reduction benefits can be accessed. How best to manage the objective and effective process -based costing, the costing system should be able to create and maintain rules based on the rigorous procedures designed to reduce the cost of the product. These rules and regulations are available two ways: Display of continuous improvement in product design team to achieve cost reduction and product cost. Application of Rule Based Costing goal, the theme of which never cost will not increase. Rule Based Costing purpose of considering the following applies: If only for the cost of product components can be increased, reducing the cost of the same amount to make sure the other components. Products that cost more than the material cost of production, they will be rejected. Management practices to reduce costs at the design stage should be transferred to the production processes to achieve the target cost is computed sure. Like all other laws and rules, and sometimes the law is violated. Violation of this rule will be permitted only if products which may be more profitable, otherwise not. Revealing the cost of the product, the product designers are looking for ways to produce a product that will achieve the goal of cost. Tool to achieve the goal of cost, value engineering.

## Methodology

Interviews and questionnaires were used to collect data. Research sampling, stratified random sampling of questions and hypotheses were that the acceptance or rejection of a statistical hypothesis test and independent sample t-test was used. In the present study, due to various constraints such as manpower, time limit, in case of delay in the process of interviewing, etc. The questionnaire method was used. In this regard, the researcher distributed the questionnaire itself, finally admitted frequent collection of 280 questionnaires, 130 questionnaires were collected approximately 122 responses to the questionnaire and the researcher concluded criteria was.

## Hypothesis

The main hypothesis

- Costing is able to establish an organizational structure for the management and value engineering techniques are aimed Based Costing.

Hypothesis sub

- The durability and longevity of customer satisfaction economic entity is Critical.
- Cost management is a good alternative for the economic development agency.
- How to communicate with suppliers of raw materials for durability and longevity economic enterprise is critical and sensitive.
- Management accounting for sustainability and economic viability Firm is Critical.
- Products design for sustainability and economic viability Firm is Critical.

## Reliability (reliability) questionnaire

The consistency reliability, the questionnaire was designed for this study using the software 17 SPSS. Cronbach alpha was calculated to be about .86 ,which was pretty good. Whatever the number is closer to .100, reliability rate increases.

## Sampling

Although sampling to estimate population parameters helps, it is possible that sub-group of members known to exist in the population is expected. Researcher on various parameters of interest are varied. Stratified random sampling, as its name suggests would require categorization then randomly selected students from each class. In stratified random sampling, the population groups that received non-related research and a significant proportion are divided. Sampling and classification of samples in the data collection and analysis will be performed.

## Statistical Methods

Method used to test the acceptance or rejection of each of the questions was t-test statistical hypothesis testing. To test the hypothesis of a one-sided test, One-tailed was used. The value of each question number 3 with the advice of respected teachers guide was determined as a measure of comparison was compared. Above-average number of coefficients is dedicated to alternative questions (3-5) / (5 +4 +3 +2 +1). Since the question of the relative benefit of scale, and attempting to use a Likert scale options were very high, high, medium, low and very low values 5, 4, 3, 2 and 1 and thus nonparametric data were qualitatively and quantitatively with numerical values were interpreted

and were calculated on the basis of action. Statistical hypotheses of the form  $H_0$  &  $H_1$  and  $H_1$  were defined that represent alternative conflicting claims and  $H_1$  implies the desired assertion.

### Inferential Statistical Analysis (Student's t test)

Student's t test was used to evaluate the hypotheses. In the analysis of this test, compared with a median value of 3 is considered. In the following example, the tests in the first hypothesis have been demonstrated.

Hypotheses are stated as follows:

$H_0$ : Costing is unable to establish an organizational structure for the management and value engineering techniques.

$H_0: \mu \leq 3$

$H_1: \mu > 3$

The first analysis was conducted according to the following table for the meaning of the (P-Value = Significant Level) of the estimated error  $05/0 = \alpha$  is smaller than the mean value is significantly different from the results of the t-statistic is positive, so the first hypothesis is larger than 3, with a 95 % confidence interval is approved.

**Table 1. Statistical analysis of research hypotheses**

Hypothesis	Number	Mean	SD	t	Sig.
First hypothesis	122	3/125	0.554	3.03	.003
Second hypothesis	122	3.125	.554	2.5	0.014
Third hypothesis	122	3.016	0.767	0.236	0.814
Forth hypothesis	122	3.40	0.64	6.94	0.000
Fifth hypothesis	122	2.65	0.65	5.82	0.000

According to the above table, the following results can be considered:

- Management Accounting for sustainability and economic viability Firm is Critical.
- The durability and longevity of customer satisfaction economic entity is Critical.
- Products design for sustainability and eco-

nomic viability Firm is Critical.

- How to communicate with suppliers of raw materials for durability and longevity economic enterprise is critical and sensitive.

Looking at the non-profit organization West Khasl to sell the company's cement industry is an indicator of this is that:

**Table 2. The ratio of gross profit to sales order Cement Company since 2001-2012**

Year	2002	2003	2004	2005	2006	2007
Gross profit to sales ratio	27/01	31/46	23/27	19/97	16/2	15/09
Year	2007	2008	2009	2010	2011	2012
Gross profit to sales ratio	10/14	8/62	26/54	19/39	12/57	13/71

It is beyond the scope of this article. Therefore, the cost management techniques in order to correctly use the available resources can be felt in the industry. Another important point to mention here is the essential component of the economic cost venture. According to researchers, about 80 to 85 percent of the cost of the product design stage, it is a commitment. Technique also noted that the change costing based on the constituent parts of raw materials and

product planning we manage costs and production costs, and it is based on the cost to maintain. It is important to know the composition of the material in the share price had jumped from 86 % upside firm economy in 2001, 90 % in the rising 2012 1,386th, the proportion of wages and the share of overhead has decreased. Therefore, changes in product design can achieve cost reduction goals sooner and consequently increase the profitability of making.

**Table 3. Production of Cement Company organized constituents of the Year 2005-2012**

2008		2007		2006		2005		year
Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Factors of production
92/42	8808158	90/02	7070953	88/02	5224623	89/42	3540298	Materials
1/86	176855	1/38	108717	1/08	64069	1/02	40337	Pay
5/72	545482	8/59	674834	10/90	644852	9/56	378546	Overhead
100	9530495	100	7854504	100	5935534	100	3959181	Total
2012		2011		2010		2009		year
Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Factors of production
91/76	34584042	93/11	33125686	93/24	25467002	91/63	14772646	Materials
1/10	415287	0/96	341864	1/18	323347	1/50	24197	Pay
7/14	2690108	5/93	2108629	5/57	1522431	6/87	1107789	Overhead
100	37689437	100	35576179	100	27312780	100	16121532	Total

The subjects discussed above with respect to the issue of the practical experimental results indicate that the new it is not a desired financial structure for the implementation of value engineering and target costing based Cement Company in order to exist. Therefore, the fifth hypothesis of the study said:

- Cost management is a good alternative for the economic development agency.
- Able to establish an organizational structure for the management and value engineering techniques are aimed Based Costing.

### Conclusion and Recommendations

In this study, the statistical tests on the data than the hypothesis ( $\rightarrow$  enterprise cost management alternative for economic development), all hypotheses were confirmed. Thus it can be said that earnings management, customer satisfaction, product design, communication with suppliers of raw materials for durability and longevity of the company is Critical. However, we find that the company's management to establish an organizational structure for implementing value engineering and target costing is based. According to the findings of this study, the necessity of using value engineering and target costing is based on the firm's economic is felt. Environmental conditions that affect the application of this technique in the management accounting techniques support the economic agent Based Costing of Value Engineering techniques there. The only factor that has to be considered to create an appropriate context for the action is the human factor. Firms move into inter-

national markets and economic targeting this market, we are committed to reducing the cost to compete with other manufacturers of the products we offer.

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