# Relative Importance of Predictor Variable In Discriminating Cost Management Practices Among MSME's In Coimbatore District

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*Abstract*

*Cost is universal and most highly visible performance metric for indicating project success, which are always prioritized by top management and control professionals. Cost management should be regarded as a process requiring the integration of separate discipline and involvement of the internal and external experts. Effective cost management requires the implementation of methodologies and steps that are repeatable and can be integrated with organization goals. For MSMEs to compete effectively in the global market, the cost of a product should be reduced by increasing productivity, by reducing manufacturing costs at the shop floor. The need is to see the cost management practices employed and the efficacies of such practices, which will enhance the opportunity to improve the decision-making process of the MSMEs. This paper infers the relative importance of variables in discriminating MSME's using Canonical Discriminant analysis to arrive at the inferences, scope for future research are also discussed.*

*Keywords: Cost Management Practices, Variables, MSME's*

## Introduction

Globalization has made cost effectiveness in product/service delivery an absolute 'Must' for staying competitive in the global market. MSMEs are considered to be, more flexible, innovative, quick to react to changing markets, less bureaucratic, entrepreneurial, and 'in-touch' with reality. MSMEs contributes nearly 8 per cent of national GDP, employing over 8 crore people in nearly 4 crore enterprises and accounting for 45 per cent of manufactured output and 40 per cent of exports of India. In view of the significance of the sector, government has been making intense efforts to encourage MSMEs and make it vibrant.

Cost is universal and most highly visible performance metric for indicating project success, which are always prioritized by top management and control professionals. Cost management should be regarded as a process requiring the integration of separate discipline and involvement of the internal and external experts. Effective cost management requires the implementation of methodologies and steps that are repeatable and can be integrated with organization goals.

### 1.1 Purpose of the Study

For MSMEs to compete effectively in the global market, the cost of a product should be reduced by increasing productivity, i.e. relationship between total output and total input or by reducing manufacturing costs at the production floor. The need is to see the efficacy of costing and what

are the factors that don't let the MSMEs to adopt modern methods of costing which are proved to be much effective and exists an opportunity to improve the decision-making process of the MSMEs.

## 1.2 Objective

1. To infer the relative importance of variables in discriminating MSME's

## 2. Research Methodology

This is an analytical study where the, sample framework was based on the firms having capital investment of Rs. 1,00,000 and above are considered, the manufacturing units are only selected for the study, ailing and closed units are excluded, because of difficulty in obtaining relevant data.

Considering the criteria indicated above, a sample frame was designed, based on the data collected from DIC (District of Industrial Centre) directories. 185 firms were circulated with the interview schedule and finally of which exactly 110 of them have been responded. After due editing process, 100 responses were qualified for inclusion in the study. The data were collected through a structured schedule and informal interviews with the managers and officials who were into costing functional role. The data were analysed by using the following Statistical tools were applied for analysis and interpretation of survey data, Weighted ANOVA & average, Garrett rank technique, Inter-correlation & Path analysis, Multiple regression analysis, Discriminant function analysis and Factor analysis.

## 3. Demographic Profile of the Sample MSME's

The profile of the MSME's explained as, 41 percent of the MSME's are in the range of 6-10 years of existence. 37 per cent of industries in 1-5 years of existence and the rest 22 percent are having more than 10 years of existence. 75 percent of the MSME's annual turnover was less than 50 Lakhs. 24 percent of the MSME's had 50-100 Lakhs turnover and the rest 1per cent in the 100-150 Lakh range. The business classification shows 68 percent of the industries fall under small scale classification. While 24 percent fall in the medium scale classification and rest 8 percent in the micro classification, the employment structure means the level of the workforce in the industry. It is divided under 4 different segments. 84 percent of the industries are having majority of 1-100 employees range. 15 percent of the companies are having employees in the 101-500 range and the rest 1percent of the company has an employee structure in 501-1000 range. 81 percent of the companies believe that they are facing competition to some extent. 16 percent say that their competition is to a great extent and 3 percent of the companies state that there is no degree of competition for them.

The mix of business classification describes, 49 percent of the firms represent textiles & garments. 18 percent in pumps & motors, 8 percent in FMGC, 8 percent in automotive spare parts 7 percent in wet grinders and the remaining 10 percent are in the miscellaneous category. it shows that 95 percent of the company do have a cost accounting system in place and 5 percent of the firms do not have any cost accounting system at all. The costing methods and techniques used by some of the MSME' are Lean Costing, Standard Costing, Target costing and Resource consumption cost accounting. However, most of the firms were found using traditional costing.

## 4. Discriminant Function Analysis

Discriminant analysis is a statistical technique which allows to study the differences from two or more groups with respect to several variables simultaneously and provide a means of

classifying any object/individual into the group with which it is most closely associated and to infer the relative importance of each variable used to discriminate from different groups. A linear combination of predictor variables, weighted in such a way that it will best discriminate among groups with the least error is called a linear discriminant function and is given by:

D = L1.X1 + L2.X2 + ...................+ LK.XK, where Xi 's are predictor variables, Li's represents the discriminant coefficients, and D is the value of the discriminant function of a particular individuals/element such that if this value is greater than a certain critical value D*=(D1 bar + D2 BAR)/2, the individual would be classified in group I ; otherwise the individual would be classified in Group II.

In the present study there are two groups namely those enterprises with lower mean score (Group I: n1=46) and enterprises with higher mean score (Group II: n2=54). Ten predictor variables considered for the analysis include, efficacy of existing cost management practices (X1), future objectives planned to achieve (X2), actions taken to achieve business objectives (X3), year of existence (X4), Annual turnover X5), business classification (X6) and employment structure (X7), Degree of competition (X8), Nature of product (X9) and Cost accounting system (X10)

#### Table 3: Mean Score of Enterprises Using Cost Management System

| Explanatory Variables | Enterprises Using Cost Management System | |
|---|---|---|
| | Lower mean score(n1=46) | High mean score(n2=54) |
| Efficacy of existing cost management practices | 23.35 | 26.04 |
| Future objectives planned to achieve business objectives | 13.02 | 13.72 |
| Actions taken to achieve business objectives | 20.93 | 22.94 |
| Year of Existence | 1.87 | 1.83 |
| Annual Turnover | 1.13 | 1.37 |
| Business classification | 2.04 | 2.26 |
| Employment Structure | 1.09 | 1.24 |
| Degree of Competition | 1.89 | 1.85 |
| Nature of Product | 3.87 | 3.91 |
| Cost Accounting System | 1.02 | 1.07 |

#### Table 4: Tests of Equality of Group Means Univariate Anova

| Explanatory Variables. | Wilk's Lambda | F (DF=1, 98) | Sig |
|---|---|---|---|
| Efficacy of existing cost management practices (X1), | 0.88 | 12.79** | 0.00 |
| Future objectives planned to achieve (X2), | 0.95 | 5.69** | 0.02 |
| actions taken to achieve business objectives (X3), | 0.92 | 8.80** | 0.00 |
| Year of Existence (X4), | 1.00 | 0.06 | 0.81 |
| Annual turnover(X5), | 0.93 | 7.07** | 0.01 |
| Business classification (X6) | 0.96 | 4.01* | 0.05 |
| Employment structure (X7) | 0.96 | 3.71 | 0.06 |
| Degree of competition (X8), | 1.00 | 0.22 | 0.64 |

| Explanatory Variables. | Wilk's Lambda | F (DF=1, 98) | Sig |
|---|---|---|---|
| Nature of product (X9) | 1.00 | 0.01 | 0.92 |
| Cost accounting system (X10) | 0.99 | 1.42 | 0.24 |

**-Significant at 1 % level                    *-Significant at 5 % level

There is significant difference between two groups with respect to effective application of cost management, objectives planned to achieve, actions initiated in the past, annual turnover and the size of the firms.

## Cannanical Discriminant Function Fitted

$D = -8.501 + .183\ X1 + .022\ X2 + .030\ X3 - .394\ X4 + .1.127\ X5 + .466\ X6 + .249\ X7 - .742\ X8 + .072\ X9 + 2.018\ X10$

## Test Functions

Eigen value: .323

Percentage of variation explained: 100

Wilks Lambda = .756

Chi-square       =26.06**          DF = 10          p = .004

Canonical Correlation: .494

## 4.1 Classification of Individual

Using the Discriminant function fitted and the observed predictor variables of the respondents, the respondents are classified and the correct percent of classification is presented below.

Table 5: Percentage of Correct Classification By Using Discriminant Function on the Data

| Enterprises with | Lower Mean score | High Mean Score | Total |
|---|---|---|---|
| Lower mean score | 39 | 7 | 46 |
| Higher mean score | 19 | 35 | 54 |

From the above Table no.5 it is observed that out of 46 units with scheme sanction, 39 (84.8 %) were correctly classified; out of 54 units, 35 (64.8 %) were correctly classified. Hence the percentage of correct classification is (74/100) *100 % or 74 % of original grouped cases correctly classified. The percent of correct classification of respondents using the observed observation clearly indicates adequacy of the model in discriminating from the two groups.

## 4.2 Relative Importance of Predictor Variable

The relative importance of each predictor variables in discriminating from the two groups is obtained and the results are presented below.

Table 6: The Relative Importance of Ratios In Discriminating From The Groups

| Explanatory Variables | Importance value of the variable (Ij) | Relative Importance (Rj) % | Rank |
|---|---|---|---|
| Efficacy of existing cost management practices (X1), | 0.4921 | 43.6 | 1 |
| Future objectives planned to achieve (X2), | 0.0154 | 1.4 | 8 |
| actions taken to achieve business objectives (X3), | 0.0603 | 5.3 | 5 |
| Year of Existence (X4), | 0.0143 | 1.3 | 9 |
| Annual turnover(X5), | 0.2704 | 24.0 | 2 |
| Business classification (X6) | 0.1006 | 8.9 | 4 |
| Employment structure (X7) | 0.0383 | 3.4 | 6 |
| Degree of competition (X8), | 0.0293 | 2.6 | 7 |
| Nature of product (X9) | 0.0027 | 0.2 | 10 |
| Cost accounting system (X10) | 0.1056 | 9.4 | 3 |
| Total | 1.1290 | 100.0 | |

Among the variables under study, three variables namely, efficacy of cost management, annual turnover, and cost accounting system are substantially important variables in discriminating between two groups

### Summary of Findings

The following are the summary of findings extracted from the Analysis and Interpretation of survey data; Using D-score, out of 46 enterprises with lower mean score, 39 (84.8 %) were correctly classified; out of 54 enterprises with higher mean score, 34 (64.8 %) were correctly classified which indicates the adequacy of the model fitted for discriminating between the two groups. The Discriminant function analysis showed that three variables namely, efficacy of cost management practices, annual turnover and cost accounting system are substantially important variables in discriminating between the groups.

### Scope for Further Research

The author's suggests that a similar study can be conducted on large enterprises in Manufacturing and Services Industry. Further scope is felt on performing an evaluative study on the implementation of any one of the strategic cost management tools or techniques in specific sector or industry.

### Conclusion

Business in the modern world is much about process than about the product. Any measure that involves an element of cost which facilitates to evaluate the long term effects of a product or process is the most incredible thing in the enterprise. The author's had attempted to revisit the Cost Management practices in the MSME's and understood that they still engage on traditional costing systems and they are suggested that the cost management should be focused more on customer expectations since it will change the way the firm will operate and help the organization in longer run. The MSME's are also suggested to integrate the cost management with planning and budgeting and it should be fully information technology enabled.

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