An assessment of the efficacy of Management Control Systems in manufacturing organizations

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Abstract

Objectives: This is a descriptive cross-sectional study to evaluate the efficacy of Management Control Systems (MCS) in manufacturing in Pune, India, using a survey questionnaire.

Materials and Methods: Descriptive hypotheses were set and studied based on primary data collected from a survey questionnaire which was administered to 120 Finance Managers (FMs) from manufacturing companies from Pune with a turnover of more than Rs.100 crores, on the efficacy of MCS in manufacturing and the problems associated with MCS. The variables were measured on a 5-point Likert scale for responses to 10 items under each of the variables. Sample means were compared against the hypothesized population means of the scale mid-points of 2 and were tested for statistical significance at 95% confidence level.

Results: The efficacy as measured on an effectiveness scale of 0-4, returned an average rating of 1.76 by the 120 respondents and was found to be significantly lower than a normal hypothesized level of 3. At the same time, the respondents recorded an agreement of 85% to the problems listed out for the MCS.

Conclusion: Management Control Systems (MCS) in the manufacturing organizations studied lack efficacy. They are haunted by a good number of problems that need to be addressed by the management if they want to make the MCS effective.

Keywords: Management, Manufacturing Organizations, Management Control Systems (MCS)

Introduction

Management Control system involves three main facets i.e. cost control coordination, performance assessment, and reward system (Langfield- Smith, 1997). Management control was defined by Anthony (1965) as, *"the process by which the resources are obtained, used effectively and efficiently in accomplishing the organization's objectives"*. But this definition had connotations of only accounting-based control and did not take into consideration that MCS can help to influence behavior in terms of bringing together individuals of different organizational units with compatible objectives and channeling it towards the specified set of organizational goals (Langfield- Smith, 1997).

In the manufacturing sector, there has been a trend towards customization and innovative approaches to organizing production. There is a propensity for the manufacturing companies to manage workflow among functionally different interdependent departments using the concept of MCS (Gerdin, 2005).

The three most important variables of MCS in manufacturing are:

1. Interdependence: that means, how the departments depend upon each other for resources in the form of *pooled dependence* (autonomous departments with a little workflow between them); *sequential dependence* i.e. output of one unit goes to the other unit as input and till then that unit cannot proceed further and *reciprocal interdependence* where several units are involved in the development of the product (Thompson, 1967).
2. Structure of Organization: this is a complex variable for example a highly advanced budgeting system; formal configurations of communications and the functioning manager is more involved in budgeting (Merchant, 1984).
3. Management accounting system: it is defined as "parts *of the formalized information system used by the organization to influence the behavior of managers to attain organizational goals and objectives"*. It is based on the regularity of reporting and level of detail of the costing system, operating budget, and reliable operational information.

Therefore to study more about the efficacy of MCS in manufacturing and its associated problems using a survey questionnaire which was administered to 120 FMs from manufacturing companies from Pune with a turnover of more than Rs.100 crores.

Literature Review

A study by Shafique-ur-Rehman (2018) from the Pakistani textile industry has elaborated on the importance of MCS regarding organizational performance. They found that the three aspects: planning control, cybernetic control, and administrative control allow a flow of new ideas; effectively help to manage finances by establishing an effective governance structure respectively.

Ramdan (2012) has expounded on the results of his study that in Libya, MCS is more bureaucratically handled with tight, formal controls with no cost leaders or differentiators. An Indonesian study has acknowledged variables such as cultural context, leadership, ethnic groups, and collectivism as important elements of MCS in family business enterprises (Putri and Hermawan, 2018). They have recognized the incorporation of MCS as important guidelines for management control, budgeting, and performance of small to medium scale enterprises.

Studies investigating the performance of MCS are not found easily at least in India.

Methodology

1. A survey questionnaire was administered to 120 FMs from manufacturing companies from Pune with a turnover of more than Rs.100 crores.
2. The selection of the 120 FMs was based on the judgment of the writer of getting an adequate response in a reasonable time. Judgmental sampling was used.
3. The survey questionnaire was divided into two parts: a. Effectiveness of MCS and b. Problems with MCS
4. 10 questions each for the two sections were framed and responses were sought on Likert-scales.
5. Responses for the section I were obtained on a scale of 0-4: 0-Can't say, 1-Least effective, 2-Somewhat effective, 3-Quite effective, and 4-Highly effective
6. Responses for section II were obtained on a scale of 0-4: 0-Can't say, 1-Somewhat agree, 2-Strongly agree, 3-Somewhat disagree, 4-Strongly disagree
7. In the case of section II, to distinguish the somewhat responses from the strong responses, a weight of 2 was assigned to each of the strong responses while doing the analysis.
8. For section I, the average effectiveness rating of the 120 respondents was compared with point-value 3 of the scale indicating an "effectiveness" rating and was tested for statistical significance @95% confidence level.
9. For section II, T-test was used at 95% confidence level and the sample mean (higher of agreement or disagreement) was tested for statistical significance by comparing it with a hypothesized population mean taken at 50% agreement or disagreement connoting an event by chance

Statement of Hypotheses:

Ho1: MCS in manufacturing organizations are effective
Ha1: MCS in the manufacturing organizations are not effective
Ho2: There are no significant problems for MCS
Ha2: There are significant problems for MCS
The survey instrument returned a Cronbach's alpha of 0.8113 that is better than 0.70 (the standard) and hence was considered as reliable.

Table 1: Effectiveness of MCS (Malmi and Brown, 2008)

Sr. No.	Effectiveness of MCS
1	Goals of functional areas of the organization
2	Standards to be achieved concerning the goals
3	Clarifies level of efforts and behaviour expected from members of organization
4	Planning can enable co-ordination of goals across functional areas of organization
5	Helps to control activities in line with the organizations desired outcomes
6	Long term planning with a strategic focus
7	Linking behaviour to targets
8	Establishing accountability for the variation to performance
9	Budgeting for resource allocation decisions
10	Reward and compensation system for employees

Table 2: Problems of MCS (Malmi and Brown, 2008)

Sr. No.	Problems with MCS
1	Lack of Clarity
2	Wide Variation
3	Inconsistent Conceptualization
4	Problems with the interpretation of results
5	Research Design of MCS
6	Lack of well-articulated definitions
7	Whether it is to be used for decision making or controls
8	Large complex phenomena difficult tounderstand
9	Difficulty to measure MCS
10	Difficult to utilize MCS

Results

Descriptive analysis:
Male Representatives (113) dominated the sample as compared to females (7). Most of them belonged to the age group > 40 years (52) and 40-50 years (42). Most of the representatives had atleast fifteen years of experience (94) (Table 3).

Table 3: Description of the Respondents

Gender		No of Respondents(N=120)
1	Male	113
2	Female	7
Age Groups		
Group 1	< 40years	26
Group 2	40-50years	42
Group 3	>50 years	52
Work Experience		
Group 1	10-15 years	26
Group 2	15-20 years	46
Group 3	>20 years	48

Inferential analysis:

The null hypotheses were set as the sample mean ($\bar{x}$) equals the hypothesized population mean (μ). Summary of the responses to the two sections is given in Table 3 and Table 4 below:
Summary of the ratings for the efficacy levels are given in Table 4 below:

Table 4: Summary of responses for efficacy level of MCS

Items	1	2	3	4	5	6	7	8	9	10	Total
Average effectiveness rating	1.64	1.77	1.71	1.82	1.81	1.86	1.82	1.77	1.71	1.66	1.76

Summary of the ratings for the problemsin MCS are given in Table 5 below:

Table 5: Summary of responses for problems in MCS

Problems	1	2	3	4	5	6	7	8	9	10	Total
Average agreement %	91%	95%	81%	83%	84%	69%	92%	86%	75%	90%	85%

Table 6 shows the testing of the two hypotheses at 95% confidence level.

Table 6: Testing of the hypotheses

Parameter	H1 value	H2 value
Sample Mean ($\bar{x}$)	1.76	85%
Hypothesized population mean (μ)	3.00	50%
SD of sample	0.85377	0.89917
N	120	120
t-value	15.9743	4.30521
p-value	0.00000	0.00000
Decision	Reject Null	Reject Null

Both the null hypotheses were rejected in favor of the alternate that the sample means are significantly different from the hypothesized population means.

Discussion of Results

On an overall basis, the efficacy of MCS as measured on an effectiveness scale of 0-4 on ten factors was only 1.76 on a maximum scale value of 4.00. The ten factors, namely, Goals of functional areas of the organization, Standards to be achieved concerning the goals, Clarifies level of efforts and behavior expected from members of the organization, Planning can enable co-ordination of goals across functional areas of the organization, Helps to control activities in line with the organizations desired outcomes, Long term planning with strategic focus, Linking behavior to targets, Establishing accountability for variation to performance, Budgeting for resource allocation decisions and Reward and compensation system for employees, were all rated below a scale of 2. On the other hand, the ten identified problems for MCS were all rated with a wide agreement level with an average agreement of 85%. Problems like Lack of Clarity, Wide Variation, Inconsistent Conceptualization, Problems with the interpretation of results, Research Design of MCS, Lack of well-articulated definitions, Whether it is to be used for decision making or controls, Large complex phenomena difficult to understand, Difficulty to measure MCS and Difficult to utilize MCS, were all rated well-above the 50% mark.

Conclusion

Management Control Systems (MCS) in the manufacturing organizations studied lack efficacy. Ensuring the effectiveness of MCS is one of the main responsibilities of the top management and generally, the finance manager plays an important role in this. It is quite a dismal performance when all the ten parameters rated on an effectiveness scale of 0-4, have been rated well below even a "2" level mark. They are haunted by a good number of problems that need to be addressed by the management if they want to make the MCS effective. Otherwise, the MCS then remains a mere show-piece on paper.

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