Impact of management control systems on the return on sales of manufacturing companies in Sri Lanka

Kariyawasam A.H.N.
University of Sri Jayewardenepura, Sri Lanka

Keywords

Abstract

Management Control Systems are important tools supporting organization, organizational learning and innovation, as the premise of management control is to ensure the attainment of organizational objectives. The Sri Lankan manufacturing sector is the largest contributor to the industry sector, which in turn is the second largest contributor to the country's GDP, has continuously shown improved financial results. This study focuses on the impact of Management Control Systems on the Return on Sales of manufacturing companies in Sri Lanka. A structured questionnaire was developed and forwarded to a sample population of 83 public quoted manufacturing companies in Sri Lanka. 85.5% or 71 of the companies responded to the questionnaire. Structured interviews were subsequently conducted with selected personnel in these 71 organizations to ensure proper completion of the questionnaire and to authenticate the information provided. Based on the analysis of data it was found that there is a statistically significant relationship between Management Control Systems and Return on Sales of manufacturing companies in Sri Lanka.

1. Introduction

The Sri Lankan manufacturing sector, the main contributor to the industry sector of the economy, has evolved considerably since independence. Prior to obtaining independence in 1947 and in the years immediately after independence, the industry was dominated by the processing of agricultural produce for both domestic consumption and for export. The most important companies in the sector were involved in the preparing and packaging of the country's primary export commodities, namely, Tea, Rubber and Coconut for export. The manufacturing process for these primary commodities was characterized by modest capital investment in machinery, minimum technological knowhow and simple sequential procedures. In the 1960s, deterioration of the country's foreign exchange reserves and the government's socialist economic policies resulted in the exit of many foreign companies from the country that operated in large scale industries such as plantations, transport, banking and finance, health and education.

In 1978, a change in Government and the liberalization of the economy resulted in significant changes in the manufacturing sector. Private sector investment and participation in the sector which was extremely limited in the 1970's, developed rapidly in the late 1970s and 1980s. This increase in private sector participation was further boosted by the establishment of the Greater Colombo Economic Commission and Free Trade Zones in various parts of the country which facilitated the entry of foreign participants into the local manufacturing sector. By the late 1980s, these initiatives had resulted in substantial growth in the manufacturing sector. Manufacturing output growth increased to 5.6% per annum from 1977 to 1988 as against a growth rate of 1.7% per annum during the period 1970 to 1977, whilst manufacturing capacity utilization also increased during this period to 75% per annum, as against 63% per annum

during the 1970 to 1977 period. In addition, total output from the manufacturing sector has increased over the period 1990-2010 from 15% of GDP in 1990 to 17.3% in 2010.

As the performance of companies in the manufacturing sector have improved over time, it is interesting to measure the contribution made by the Management Control Systems (MCSs) implemented by these companies to this improvement in performance. MCSs are an integral for the management of any company regardless of the ownership status of the company. MCSs include a wide variety of tools and mechanisms designed to ensure that budgetary and other policy decisions are executed properly; that resources are utilized appropriately; that mismanagement, waste and fraud are eliminated, if not minimized and that timely information is obtained, maintained and used for decision making. It has been traditionally considered as the formal feedback and control system used to monitor organizational outcomes and correct deviations from established performance standards (Anthony, 1965). However, in recent times, MCSs have been recognized as important tools supporting the organization, organizational learning and innovation (Simons, 1990; Knights & Willmott, 1993; Bisbe & Otely, 2004). This is because the central theme of MCSs involves ensuring that an organization achieves its objectives (Otley, 2003). In this study, the main objective is to analyze the impact of MCSs on the Return on Sales of manufacturing companies in Sri Lanka.

2. Statement of the problem

The role and importance of MCSs has evolved from formal feedback and control systems to important mechanism supporting organization, organizational learning and innovation. Although from an academic context, MCSs have always been identified as an important tool for the management of an organization, one notable fact is that the usage of MCSs among organizations is very limited (Otley, 2003). Further, MCSs used in organizations are most often restricted to the use of traditional techniques such as budgetary control. This use of traditional techniques is a common phenomenon to the Sri Lankan context as well (Fonseka et al., 2005). Poor and inappropriate MCSs can result in dysfunctional behavior, which can have a negative influence on organizational performance. The most common occurrences of dysfunctional behavior include manipulation of actual data either to improve performance or to avoid unpleasant outcomes on account of reporting the actual data. One control mechanism that fuels such behavior is the budgetary control system, which while appearing outwardly rational, has the potential to cause dysfunctional behavior. Furthermore, the reward systems used to improve employee performance compounds these tendencies. Therefore, it is vital to identify how MCSs contribute toward improving organizational performance and profitability. Based on these facts and limiting the scope of the study, the problem statement can be presented as "**what impact do MCSs have on the Return on Sales of Manufacturing Companies in Sri Lanka?**"

3. Main objective of the study

The main objective of this study is to identify the impact of MCSs on the Return on Sales of manufacturing companies in Sri Lanka.

4. Literature review

MCSs are an essential part of management in today's dynamic business environment. MCSs include a wide variety of tools and mechanisms to ensure organizational performance is according to established standards and correct deviations from these performance standards. The use of management controls enable companies to measure the extent to which goals are achieved; detect deviations in performance for which corrective action needs to taken. In addition, management controls help ensure efficient and effective use of resources in an

organization. This section presents the most relevant findings from previous research on this topic.

4.1 Definition of management control systems

MCSs have been defined by Anthony (1965) as the process by which managers ensure that resources are obtained and utilized efficiently and effectively in the accomplishment of organizational objectives. As per Merchant and Otley (2007), the main objective of MCSs is to provide useful information for planning, evaluation and decision making in an organization. Simon (1995) defines Management Control Systems as formal information based procedures and routines that are used by management to measure and alter patterns in organizational activity. These procedures and routines include a wide variety of tools and mechanisms designed to ensure that budgetary and other policy decisions are executed properly, resources are used appropriately, that mismanagement, waste and fraud are eliminated (if not minimized), and that timely information is obtained, maintained and used for decision making. These controls are intended to help the organization motivate employees to make decisions and to use appropriate actions which are in the best interest of the organization (Chow, Shields & Wu, 1990).

4.2 Importance of management control systems

In recent times MCSs have been recognized as important management tools supporting the organization, organizational learning and innovation (Simons, 1990; Knights and Willmott, 1993; Chenhall and Langfield, 2003; Bisbe and Otely, 2004). The central theme of management controls involves helping an organization achieve its objectives (Otley, 2003). MCSs can therefore be considered as a management activity that links operational control and strategic planning (Otley, Broadbent and Berry, 1995). In today's business environment, organizations are likely to experience complex challenges on account of changes in the global economic environment, developments in technology, globalized nature of competition and the increasing dissemination of information across the planet (Drucker, 1997). The ability of management to anticipate and successfully respond to opportunities and threats on account of change are critical for organizational success and survival (Abernethy and Brownell, 1999). Management accounting systems and the resulting information used to assist management in its decision making process are necessary for an organization to develop comparative advantages in today's dynamic and complex business environment (Chenhall and Langfield-Smith (1998). MCSs have become critical in organizational transformation with a number of researchers (Argyis, 1990; Dent, 1990; Chenhall, 2003) providing strong theoretical support for the concept that MCSs play a strategic role in shaping organizational transformation.

In the Sri Lanka context, as per Fonseka et al., (2005) and Abesinghe, (2009) MCSs are not utilized to their full potential. According to Abeysinge (2009) in state controlled companies in Sri Lanka, political interest supersedes all other interests, including financial interests and results in the basic management controls used in these firms becoming mere rituals. Fonseka et al (2005), in their study on Management Accounting (MA) practices in listed companies in Sri Lanka found that MA practices are mostly used for planning & control and internal control purposes. The common MA practices in these companies are internal audits, cash flow planning, budgetary control, performance evaluation, ratio analysis, re-order levels, capital-budgeting techniques, management audits, absorption costing, variable costing, standard costing & variance analysis and CVP analysis. Ekanayake (2004) in his research "Agency Theory, National Culture and Management Control Systems" describes management controls as the structured facet of management. It is the formal vehicle by which the management process is executed with

the end goal of achieving corporate objectives. Because employees do not always give their best efforts in achieving organizational objectives, MCSs are necessary to align the goals of the employees or subordinates (agent) with that of the company (principal).

4.3 Management controls: Use and impact on organizational performance

Analyzing the initial MCSs introduced by organizations, Sandino (2004) demonstrates that the initial MCSs can be classified into four different categories based on the purpose of their introduction. These four MCS categories are namely, "Basic MCSs" such as budgets, pricing and inventory systems; "Cost MCSs" which are focused on enhancing operational efficiencies, minimizing cost and establishing financial and internal controls; "Revenue MCSs" which are focused on gathering non-financial information and responding to customers and finally "Risk MCSs" which are a set of systems introduced to avoid risk and protect asset integrity. Sandino (ibid) argues that whilst "Basic MCSs" are used by all firms, the use of the other three MCSs is contingent on the specific needs of the company, the type of strategy adopted by it and its organizational structure. It is hypothesized that firms adopting differentiation strategies adopt revenue strategies with an emphasis on sales productivity controls and marketing databases; whilst decentralized firms and firms offering a more diverse assortment of products tend to place more emphasis on risk MCSs.

In a 5 year retrospective longitudinal case study, Akroyd and Kober (2010) studied the emergence and utilization of MCSs in a high growth firm. This study investigated at which stage of the life cycle a high growth firm introduces various control mechanisms, the manner in which these mechanisms are used, the reasons for the introduction of these mechanisms and the impact these control mechanisms have on the firm's growth. The study focused on a high growth company, HRV, based in New Zealand, from its start-up in March, 2003, until December, 2007. The primary data collected was transcribed, analyzed and categorized according to Simon's (1995) four levers of control, which was subsequently linked to the documents and observations made by the researchers during their investigation of the company. The stages of HRV's life cycle analyzed by the researchers were the company's start-up and growth stages. The data from the interviews were divided into the selected life cycles by the researchers utilizing Miller and Friesen (1984) framework of firm characteristics. Findings from this study indicate that belief systems are the first control systems to be implemented in an organization and that these belief systems are constantly reinforced and built-upon throughout the start-up and growth stages. This finding differs significantly with the findings of other prominent researchers on the subject, such as Simons (1995) and Sandino (2004) whose MCS based research and experience based models, found that internal controls and diagnostic financial controls, to be the first control categories adopted by young companies.

Through an empirical study of Taiwanese Correctional Institutions, Ho et al., (2011) examined the impact of MCSs on efficiency and quality. This study tested if the efficiency and quality of correctional institutions with tight MCSs were better than those with loose MCSs. The sample of 57 institutions consisted of 20 prisons, 18 detention houses, 3 juvenile reformatory schools and 16 juvenile reformatory and classification houses. The efficiency for each correctional institution was calculated by the researchers using both Data Envelopment Analysis (DEA) and Stochastic Frontier Analysis (SFA). In analyzing quality performance in the correctional institutions, the researchers define quality as the frequency of custody incidents. Quality is then measured by the ratio of the number of custody incidents to the total prison population in each correctional institution. The findings from this study indicate that correctional institutions with tight MCSs have both the higher efficiency and quality as opposed to institutions with loose MCSs.

Bloom et al. (2011) in their research investigated the impact of management practices on selected companies in the textile industry in India. This study, which was conducted in the form of an experiment, selected large, multi-plant Indian textile firms and randomly divided the plants of these firms into treatment and control groups. Plants in the treatment group received five months of extensive management consulting from a large international consulting firm. The consulting firm diagnosed opportunities for improvement in a set of 38 operational practices in the first month. This was followed by four months of intensive support for the implementation of these recommendations. Plants in the control group received only one month of diagnostic consulting. The increase in productivity and annual profitability of the plants in the treatment group highlights the positive impact of management practices on company performance. In addition, the researchers also reported a transfer of expertise from the plants which participated in the experiment to other plants within the selected companies.

The use of MCSs is not only confined to large enterprises. In a study of MCSs from a small businesses' context, Jankala (2007) examined the types of MCSs used by small businesses in Finland. Whilst the traditional view is that small businesses do not have a need or use for MCSs due to their simple structure, findings from this study revealed that a majority of small firms do utilize a wide range of management control practices. In addition, this study also revealed that the use of MCSs in small firms is associated with the firm's strategy, both realized and intended and that MCSs have a very limited impact on the financial performance of these firms. Small businesses in this study were identified as companies with less than 50 employees, which have been in operation for more than 5 years.

5. Theoretical framework

The theoretical framework is the foundation on which the entire research project is based (Sekaran, 2006). It is a logically developed, described and elaborated network of associations among the variables deemed relevant to the problem situation. Variables are anything that can take on differing or varying values (Sekaran, 2006). As indicated in Figure 1, the Return on Sales of manufacturing companies in Sri Lanka is the Dependent Variable (DV) and is the main variable of interest in this study. Six management control types namely; Accounting control, Internal Control, Budgeting, Auditing, Capital Investment and Performance evaluation are the independent variables and it is assumed that these independent variables have a direct impact on the performance of dependent variable.
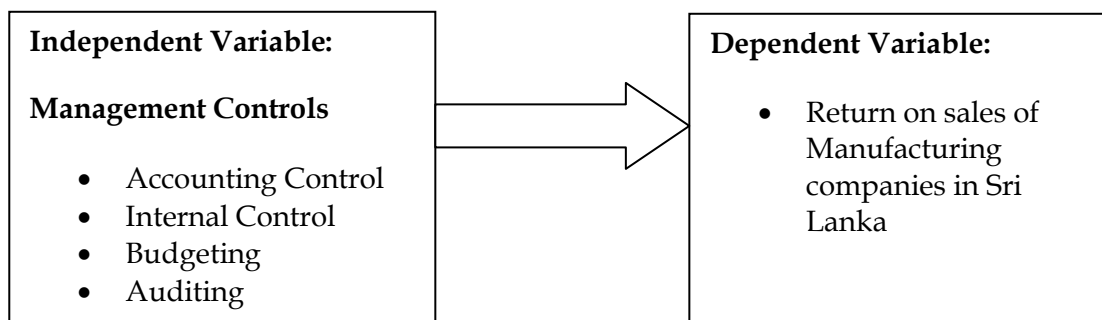
Independent Variable: Management Controls	Dependent Variable:
• Accounting Control • Internal Control • Budgeting • Auditing	• Return on sales of Manufacturing companies in Sri Lanka

Figure 1: Conceptual Framework

6. Hypothesis

$H1_0$: MCSs have no statistically significant impact on the Return on Sales of manufacturing companies in Sri Lanka

H1$_A$: MCSs have a statistically significant impact on the Return on Sales of manufacturing companies in Sri Lanka.

The hypothesis will be tested against th**e significance of 0.05.**

7. Population sample

Population is the total collection of elements about which the researcher intends to make some inferences (Cooper & Schindler, 2006). The research population for this study consisted of 83 public companies in the manufacturing sector in Sri Lanka. The composition of the population for this study is indicated in Table 1. Based on the results of the pilot study, it was decided to consider 71 companies or 85.5% of the population as the research sample for the study.

Industry	No. of companies
Manufacturing	39
Beverage, food and tobacco	21
Chemicals and pharmaceuticals	12
Footwear and textile	07
Construction and engineering	04
Total	83

Source: Colombo Stock Exchange, 2011

Table 1: Manufacturing companies in Sri Lanka selected for the study

8. Data collection methods

Both primary and secondary data instruments were used to collect data for the study. The unit of analysis for this research was at company level. Primary data for the study was collected from the Chief Operating Officers of the companies studied.

For primary data collection, the study used both questionnaire and interview methods. A questionnaire was developed and forwarded to the respective Chief Operating Officers of the selected companies. The questions were framed to collect data on the MCSs used in the sample companies, the financial objectives of the sample companies and the achievement of these financial objectives. The MCSs for primary data collection were identified by referring to recently published textbooks on management controls. In addition, one open ended question was used to identify those MCSs used by the companies, which were not in the list of MCSs provided to them. Subsequent to the completion of the questionnaire, interviews were conducted with the respondents to authenticate the information provided.

Secondary data was collected through the Central Bank of Sri Lanka and the annual reports of the companies studied. The information collected through secondary sources was used to analyze the performance of individual companies and the manufacturing sector as a whole. In addition, company reports were used to measure the extent to which the companies had achieved their financial objectives identified through the primary data collected.

9. Data analysis

The hypothesis was tested using Analysis of Variance (ANOVA), Correlation Test and Regression Analysis. In order to present summaries of data, case summaries and descriptive analysis were used. Analysis of mean, range, standard deviation and the variance in data were carried out to identify how clustered or dispersed the variables are and to understand how well the questions were framed for tapping the concept questioned in the survey instrument.

The following equation was used to assess the Return on Sales of the sample companies.

Return on Sales = Operating (net) profits/ Total Sales

Pearson correlation test was applied **to test the strength of association** between MCSs which is taken as the independent variable and the Return on Sales of Manufacturing Firms which is the dependent variable. The dependent variable; Return on Sales is recognized through the aggregate average value over a five year period.

Scatter plots were utilized to identify if the relationship between the two variables is linear. According to the constructed scatter plots, all the MCSs are **approximately linear** with the Return on Sales of the firms. Thus, Pearson Correlation test was used to test the strength of association between variables.

Statistically Pearson Correlation Coefficient lies between -1 and +1. If the value of correlation coefficient is close to -1, it signifies that there is a strong negative correlation between variables. Similarly if the value of correlation coefficient is close to +1, it can be interpreted as a strong positive correlation between variables. If the correlation coefficient value is close to -0.5 or +0.5, there exists a moderate negative or moderate positive association among variables. Finally, if the coefficient value is very close to 0, it signifies that the relationship between variables is weak.

The sig. (2-tailed) value which is the p-value was used to determine the significance of the relationship among variables in the study. As the alternative hypothesis (H1$_A$) is non-directional, a 2-tailed test was applied. The used confidence interval was 965% and therefore the desired level of significance was 0.05 in the analysis. A sig. (2-tailed) value less than 0.05, is recognized as a statistically significant relationship, if not (sig. > 0.05) the relationship is recognized as statistically insignificant.

10. Key findings

As indicated in Table 2 there is a weak moderate relationship between Return on Sales and MCSs as the coefficient value is 0.422. It is even less than 0.5. But this relationship is significant (sig. < 0.05; which is 0.011). Hence, it could be claimed that there is a statistically significant relationship between Return on Sales in manufacturing companies in Sri Lanka and MCSs.

		Management Controls	Return on Sales
Management Controls	**Pearson Correlation**	1	.422
	Sig. (2-tailed)		.011
	N	71	71
Return on Sales	**Pearson Correlation**	.422	1
	Sig. (2-tailed)	.011	
	N	71	71

Table 2: Correlations – Return on Sales and MCSs

11. Conclusions

The present study has been conducted with a view to assessing the impact of MCSs on the Return on Sales of manufacturing companies in Sri Lanka. The data obtained from the questionnaires, interviews with the sample population have been analyzed and interpreted using various financial ratios, as well as applied statistical tools. Analysis of data indicates that MCSs have a statistically significant impact on the Return on Sales of manufacturing companies in Sri Lanka. The findings of this study support the findings of Bloom et al (2011) and Ho et al.,

(2011) i.e., management controls have a positive impact on organizational performance and contradicts the findings of Jankaka (2007) whose research found that management controls have little impact on the financial performance of an organization.

References

Abernethy, M. A., & Brownell, P. (1999). The role of budgets in organizations facing strategic change: An exploratory study. *Journal of Accounting Organizations and Society*, 24, 189-204.

Abeysinghe, A.A.C. (2009). Budget Contradiction and Consensual Space: A Meaning to Political Interferences in Sri Lanka Railway. *Sri Lankan Journal of Humanities and Social Sciences* Vol.1(2), 51-63

Akroyd, C., and Kober, R.(2010). *The emergence and utilisation of management control systems in a high growth firm*. American Accounting Association Annual Meeting, Washington DC, 2012

Anthony, R.N. (1965). *Planning and Control Systems: A Framework for Analysis* (Boston: Division of Research, Harvard Business School)

Argyris, C. (1990). The dilemma of implementing controls: The case of managerial accounting. *Journal of Accounting, Organizations and Society*, 15, 503-512.

Bisbe, J., & Otley, D. (2004). The effects of the interactive use of management control systems on product innovation. *Journal of Accounting, Organizations and Society*, 29(8), 709-737.

Bloom, N., Eifert, B., Mahajan, A., Mckenzie, D., & Roberts, J. (2012). Does Management Matter? Evidence from India. *The Quarterly Journal of Economics*, Volume 128:1, 1-51

Chenhall, R. H. (2003). Management control systems design within its organizational context: findings from contingency-based research and directions for the future. *Journal of Accounting, Organizations and Society*, 28 (2-3), 27-168.

Chenhall, R. H., & Langfield-Smith, K. (1998). The relationship between strategic priorities, management techniques and management accounting: An empirical investigation using a systems approach. *Journal of Accounting, Organizations and Society*, 23(3), 243-264.

Chow, C.W., Shields, M.D., & Wu, A. (1999). The importance of national culture in the design of and preference for management controls for multi-national operations. *Journal of Accounting, Organizations and Society*, Vol. 24, 561-582.

Cooper, D.R., & Schindler, P.S. (2006). *Business Research Methods. (9th edition.)*. New Delhi, Tata McGraw-Hill Publishing

Dent, J. F. (1990). Strategy, organization and control: some possibilities for accounting research. *Journal of Accounting, Organizations and Society*, 15, 3-25.

Drucker, P. F. (1997). *Managing in a time of great change*, Oxford, Butterworth-Heinemann.

Ekanayake, S (2004). Agency Theory, National Culture and Management Systems. *Journal of American Academy of Business* (March), 49-54

Fonseka, K.B.M., Manawaduge, A.S.P.G., & Senaratne, D.S.N.P. (2005). *Management Accounting practices in quoted public companies in Sri Lanka*, Colombo: CIMA Sri Lanka division.

Ho, J.L., Huang, C., & Wu, A (2011). *The Impact of Management Control Systems on Efficiency and Quality Performance – An Empirical Study of Chinese Correctional Institutions*. [Online] Available: http://merage.uci.edu/Resources/Documents/HoHuangWu%20APJAE%202011.PDF. [Accessed on January 24, 2014].

Jankala, S. (2007). *Management control systems (MCS) in the small business context*, [Online] Available: http://herkules.oulu.fi/isbn9789514285288/isbn97895142852 88.pdf. [Accessed on January 12, 2014].

Knight, D., & Wilmott, H. (1993). Its a Very Foreign Discipline - The Genesis of Expenses Control in a Mutual Life Insurance Company. *British Journal of Management*, l-18.

Merchant, K. A., & Otley, D. T. (2007). A review of the literature on control and accountability. *Handbook of Management Accounting Research.* (Ed.) C. S. Chapman, A. G. Hopwood, and M. D. Shields, 785-804, Amsterdam: Elsevier Press.

Miller, D., & Friesen, P. (1984). A longitudinal study of the corporate life cycl*e. Journal of Management Science,* 30, 1161-1183.

Otley, D. (2003). Management control and performance management: whence and whither?, *The British Accounting Review*, 35, 309-326.

Otley, D. T., Broadbent, J., & Berry, A. (1995). Research in management control: an overview of its development. *British Journal of Management*, Vol. 6, 31-44.

Sandino, T. (2004). *Introducing the first Management Control systems; evidence from the retail sector*. Boston, Management Control Department, Harvard Business School.

Sekaran, U. (2006). *Research Methods for Business: A Skill Building Approach. (4th ed.)*. New Delhi: Wiley-India

Simons, R. (1990). The role of management control systems in creating competitive advantage: New perspectives. *Journal of Accounting, Organizations and Society*, 15 (1/2), 127-143.

Simons, R. (1995). *Levers of control: How managers use innovative control systems to drive strategic renewal*. Boston, Harvard Business Press.