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# Management Control System and Performance of Cooperative Societies in Northern Province of Sri Lanka

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## A B S T R A C T

Cooperative societies in Sri Lanka have a long and rich history from British rule. The main purpose of a cooperative society is to meet the common needs of the people in societies around the world. In Northern Province, cooperative societies failed to record a remarkable performance during the past years. Therefore, the study attempts to analyze the relationship between the management controls system and the performance of cooperative societies in the Northern province of Sri Lanka. For the study purpose, 319 questionnaires were received and analyzed. The finding of the study revealed that the logistic regression model was statistically significant. The model explained 31.7.0% (Nagelkerke R<sup>2</sup>) of the variance in performance and correctly classified 93.1% of cases. From the study results, researchers recommend the following: sharing the vision, mission, and objectives of Cooperatives among their staff will lead to higher performance of cooperatives. Cooperatives should increase face-to-face meetings with employees, which will lead to better performance of cooperatives. Diagnostic control has a negative significant relationship with performance. It shows that employees do not like to work under the traditional management control system. Therefore, the valuation standards and incentives scheme of employees should be modified.

**Keywords:** management control system, diagnostic control systems, belief control systems, interactive control system, performance

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## 1. Introduction

Different managers perform different responsibilities in an organization, and therefore, different kinds of information are needed by them to manage the activities in their respective areas. The management control system should be able to develop, gather, and communicate information to the management at different levels in the organization. Controlling as a function of management is of great value and importance in a business organization to ensure

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that the actual state of affairs of a business is along the lines of what is expected to be. One of the most obvious benefits of controlling function is that it provides accurate information on what is wanted for an effective decision-making process as well as maintaining the effective functioning state of a business. However, in Sri Lanka, we have very limited knowledge regarding their Management Control System (MCS). MCS are important tools supporting organizational learning and innovation, as the premise of management control is to ensure the attainment of organizational objectives.

A cooperative society is established for the purpose of fulfilling the common needs of the people in the world. A cooperative society is a form of organization where members join together as human beings to satisfy their common economic, social, and cultural needs. They are also expected to supply needed goods on one hand, and credit facilities and marketing products on the other hand. The emphasis is not on profit-making and the cooperatives should work on a no profit-no loss basis. In Sri Lanka, the Department of Cooperative Development had started on 1st October 1930 under the name of Department of Cooperative, and later in the year 1945, it changed the name to the Department of Cooperative Development. Sri Lanka has very limited knowledge regarding management control systems. MCS are important tools supporting organizational learning and innovation, as the premise of management control is to ensure the attainment of organizational objectives. The combination of performance-driven behaviour and regular use of management control systems leads to improved results (Darja & Metka, 2008). This task can be accomplished by using diagnostic measures as a way to improve operational effectiveness, and the other three types of control measures as a way to mitigate its negative effects on employee creativity (Kimura & Mourdoukoutas, 2000). A cooperative society is established for the purpose of fulfilling the common needs of the people in the world. The business is accepted as distinguished to achieve sustainable development and at the same time, it strictly adheres to social responsibility and ethical values. There is a huge investment employed during the last four years by cooperative societies in the Northern Province. Since the overall performance is not at the expected level, there is a need to examine them in terms of their financial and operational performance so as to establish their current status in terms of assets utilization, the performance of their business activities, and see whether they satisfy the needs of their stakeholders (Mangaleswaran & Alfred, 2014).

### **1.1. Problem statement**

Generally, a cooperative society is an association of people who pool their resources together on a mutual basis to solve specific socio-economic problems, which may include earnings generating activities. Cooperative societies in the Northern province are expected to take part in enriching the lives of poor communities. There are several types of cooperative societies in Northern province, Sri Lanka. They include: farmers cooperatives, cooperatives fisheries federation, cooperatives banks, and cooperative shops and they involve research in agriculture too. During the local war period, they lost considerable assets and most of their administrative records. From 2010 onwards cooperative societies have been supported by many organizations, such as the World Bank, various donor agencies, and NGOs. Many facilities were provided by these organizations for reestablishing cooperatives in the North. The facilities were given in the form of buildings, equipment, vehicles, factories, etc., but the performance of cooperatives is not at the expected level.

A Management Control System provides information to managers in order to assist them in making decisions according to their plans and objectives. There are several

definitions given by previous authors, such as Anthony (1965); Chenhal (2003); Simons (1994, 1995).

Simon (1994) explains MCS as “the formal, information-based day to day activities and procedures managers use to maintain or modify patterns in organizational activities”. In a nutshell, control is a policy or procedure that facilitates an organization to ensure that its goal and objectives are met. Further, he introduced four key variables that must be used for controlling business strategy: belief, boundary, diagnostic, and interactive. According to Flamholtz and Randle (2000), MCS was important for organizational growth as they liberated top managers' attention from processes that could be controlled by exception and provided them with information when their informal network was overloaded. The emergence of MCS was most important for organizations moving through their growth stage when coordination and control problems could not be solved through informal interaction (as happens during the birth stage) according to Moores and Yuvan (2000). MCS then emerged to formalize this learning by codifying routines and liberating management attention from repetitive tasks. Kober et al., (2007)'s finding recognized in the contingency theory that, for enhanced performance, there needs to be a match between an organization's MCS and its strategy. By extension, the contingency framework suggested that when strategy changes, the MCS also changes. Contingency theory also argued that there was no universally appropriate control system applicable to all situations. As such, the appropriateness of different MCS mechanisms was contingent on the circumstances surrounding the organization. While a number of strategic typology frameworks have been advanced in the literature, this research uses the Simons (1994) as the basis for the discussion.

Researchers wish to apply the concepts of management control systems in cooperative societies in the Northern province. Before applying this concept there is a need to find the existing pattern of the management control system and its influence on the performance in cooperatives. Therefore, the research addresses the research question what is the relationship between the Management Control System and the performance of cooperative societies in Northern Province.

Cooperative societies in the Northern Province are expected to take part in uplifting the lives of vulnerable people and displaced communities. During the conflict, they lost considerable assets and most of their administrative records were lost. In the meantime, during the past three years, they have been supported by many organizations such as Department of Cooperative Development (DCD) and various donor agencies and NGOs. Many facilities were provided by these organizations for improving, reestablishing and establishing the co-operatives in the North. The facilities were given in the form of buildings, equipments, vehicles, factories etc

## **2. Literature review**

Asiligwa and Rennox (2017) did a study guided by the agency theory to test empirically the effects of internal control on cooperative performance in tertiary institutions in Kenya. The study used a case study research design. The findings of the research showed that inadequate staffing of the institution's internal audit affects the internal control of the cooperative societies' performance.

Hayali et al., (2014) studied the importance of internal control systems in cooperative societies: evidence from Turkey. In this study, the importance of an internal control system is

expressed, also its impacts on the cooperative system are analyzed. The research showed that the internal control activities of the cooperatives are adapted to the international standards in Turkey and effective control procedures existed in the cooperative system. In addition, efficient internal control mechanisms have a great impact on the strong and stable outlook of Turkish cooperative societies. Antonio et al. (2016) investigated “the management control systems and performance in small and medium family firms”. The purpose of this study is to analyze whether family influence impacts the degree of utilization of the management control system (MCS), and the relationship between the former and performance. This study was carried out using a sample of 900 Spanish SMSs, both family and non-family businesses. The findings of the study show that family businesses use fewer management control systems than non-family firms, and the use of MCS has a positive influence on business performance.

Raymond, (2016) made an empirical analysis on “the effects of management control systems and strategy on performance of minority-owned businesses”. This study addressed the perceived relationships among management control systems, business strategy, and organizational performance in U.S. minority-owned manufacturing businesses. Data was collected from a random sample of 1,000 participants selected from a population of 2,583 minority-owned manufacturing businesses in the United States. The result of this study revealed that financial and non-financial-based management control systems and differentiation strategies were significantly positively related to organizational performance. Low-cost leadership strategy was positively related to organizational performance but was not statistically significant.

Anthony and Govindarajan (2001) explained framework, on the other hand, showed the interrelationship between the management control system, firm structure, firm culture, and human resource management in order to get the management control system to work according to the strategy. They suggested that effective control systems are highly situational and that the system should be personalized to the nature of each firm. Based on their framework, the firm structure demonstrated the roles and responsibilities of the employees to make the decision within the organization.

The firm culture refers to the shared beliefs, attitudes, and norms that explicitly or implicitly lead managerial actions, while human resource management is the selection, training, evaluation, promotion, and termination of employees in order to develop skill and knowledge to increase the firm’s strategy. In order to implement the intended strategy, Simons (1995) framework proposed four levers of control that were inter-related; namely, belief systems, boundary systems, diagnostic systems, and interactive control systems. The implementation mechanism of Anthony and Govindarajan (2001) framework could be discussed in Simons (1995) four levers of control.

### **3. Methodology**

#### **3.1. Sampling and data collection methods**

The researchers focused on the primary data collection methods of interviews and questionnaires. Researchers visited some cooperatives and ask some questions regarding their day-to-day operations and observed their organizational structure. The questionnaire of the study had been designed to include three separate parts (Part A, B, and C) in order to issue to respondents of the study. In part A, demographic information of the employees in cooperative societies was gathered. They are the name of the organization, gender, age, educational qualification, nature of the business, working period, and no of employees. In

parts B and C, are MCS-related variables and performance variables, such as independent and dependent variables of this research. Here five Likert scale methods have been used. The total population of the study are as follows.

**Table 1: Population**

<b>District</b>	<b>Population</b>	<b>Proposed Sample (50%)</b>
Jaffna	1213	607
Mullaithevu	220	110
Manner	193	97
Vavuniya	231	115
Killinochchi	193	97
		<b>1026</b>

*Source:* Department of Cooperative Development (2012)

Table 1 shows that around 2050 cooperatives are registered in the Cooperatives Department, but the nature of the business, amount of capital invested, and the number of employees working is different. Further, some of them are branches of a cooperative society. Therefore, researchers decided to select 50% of cooperatives in each district.

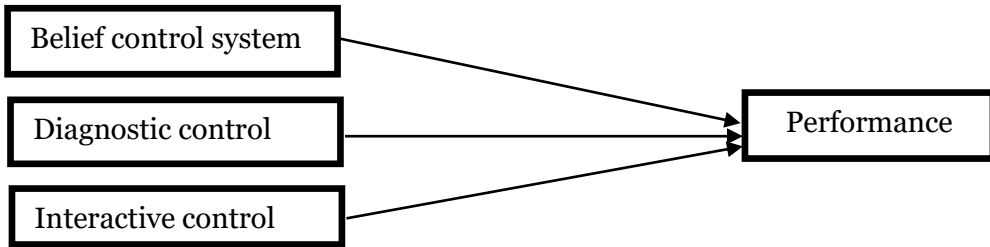
The researchers issued 1026 structured questionnaires among cooperative societies using the stratified random sampling method, but only 319 completed questionnaires were received.

**Table 2: Operationalization of Variables**

<b>Concepts</b>	<b>Variable</b>	<b>Indicator</b>	<b>Measurement</b>
Demographics variables	Gender		Questions Part A (a –j)
	Age		
Employment	Educational level		
	Working Years		
	Belief control system	Mission and vision statements	Part B (6,7,8,9,10)
		Core values	
	Diagnostic control	Budgetary performance	Part B (19,20,21,22,23)
		Variance analysis	
		Costing	
Performance	Financial performance	Interactive control	Part B (11,12,13,14,15)
		Customer satisfaction	
		Meeting	
		Participating in the decision-making process	
		Changes in ROI	Part C (1,2,3,4,5,6,7,8)
		Changes in market share	
		Changes NP	

*Source:* developed by researchers

### 3.2. Conceptualization of the study



**Figure 1: Conceptualization**

### 3.3. Hypotheses development & model specification

The following research model and hypotheses are developed based on Jamil and Rapih (2013); Darja and Metka (2008) studies' findings.

*H<sub>0</sub>*: There is no significant relationship between the management control system and the performance

*H<sub>1</sub>*: There is a significant relationship between the management control system and the performance

## 4. Data analysis

Data Analysis is the process of systematically applying statistical and/or logical techniques to describe and illustrate, condense and recap, and evaluate data. For this study, researchers used the following statistical tools and methods have been utilized to analyze the data.

- Descriptive statistics
- Inference statistics

A binomial logistic regression predicts the probability that an observation falls into one of two categories of a dichotomous dependent variable based on one or more independent variables that can be either continuous or categorical. In this study, the researcher has three independent variables that are categorical and a dependent variable that is also categorical.

$$P = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where

P is Performance

X<sub>1</sub> is Belief Control

X<sub>2</sub> is Interactive control

X<sub>3</sub> is Diagnostic control

### 4.1. Demographic presentation of employees

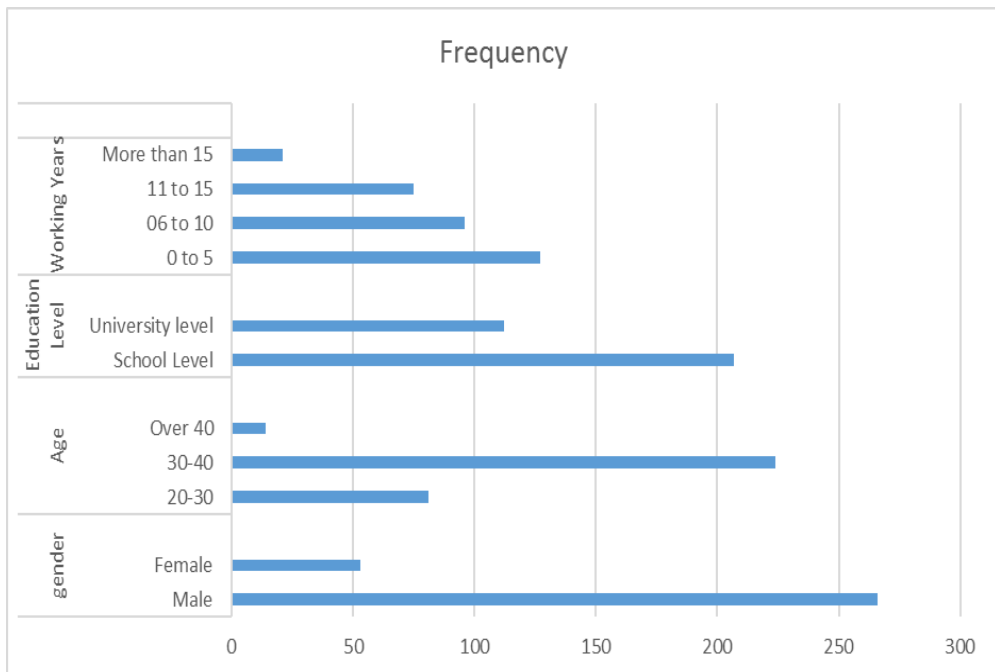
Generally, individuals considerably differ with this socio-demographic profile like gender, educational level, age, monthly income, marital status, and religion. The following Table 1

summarizes and presents information with regards to the demographic profile of the respondents.

**Table 3: Frequency Analysis**

		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	266	83.4	83.4	83.4
	Female	53	16.6	16.6	100.0
	Total	<b>319</b>	<b>100.0</b>	<b>100.0</b>	
Age	20-30	81	25.4	25.4	25.4
	31-40	224	70.2	70.2	95.6
	Over 41	14	4.4	4.4	100.0
	Total	<b>319</b>	<b>100.0</b>	<b>100.0</b>	
Education Level	School Level	207	64.9	64.9	64.9
	University level	112	35.1	35.1	100.0
	Total	<b>319</b>	<b>100.0</b>	<b>100.0</b>	
Working Years	0-5	127	39.8	39.8	39.8
	6-10	96	30.1	30.1	69.9
	11-15	75	23.5	23.5	93.4
	More than 16	21	6.6	6.6	100.0
	Total	<b>319</b>	<b>100.0</b>	<b>100.0</b>	

Source: SPSS output



**Figure 2: Frequency Distribution**

**Table 4: Case Processing Summary**

Unweighted Cases <sup>a</sup>		N	Percent
Selected Cases	Included in Analysis	319	100.0
	Missing Cases	0	.0
	Total	319	100.0
Unselected Cases		0	.0
Total		319	100.0

a. If weight is in effect, see the classification table for the total number of cases.

Source: SPSS output

The case processing summary shows that 319 respondents have participated in the study and there is no missing information.

**Table 5: Block 0 Classification Table**

Observed		Predicted Performance		Percentage Correct	
		Lower performance	High Performance		
Step 0	Performance	Lower performance	0	26	.0
		High Performance	0	293	100.0
Overall Percentage					91.8

a. Constant is included in the model.

b. The cut value is .500

Source: SPSS output

Above Table 5 shows the Block 0 output which is for a model that includes only the constant. A higher level of performance is indicated by (293/319) the 91.8% in the model.

**Table 6: Omnibus Tests of Model Coefficients**

		Chi-square	df	Sig.
Step 1	Step	46.922	5	.000
	Block	46.922	5	.000
	Model	46.922	5	.000

Source: SPSS output

The overall model is statistically significant,  $\chi^2(5) = 46.922, p < .05$ .

**Table 7: Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	133.268 <sup>a</sup>	.137	.317

a. Estimation terminated at iteration number 8 because parameter estimates changed by less than .001.

Source: SPSS output



This Table contains the Cox & Snell  $R$  Square and Nagelkerke  $R$  Square values, which are both methods of calculating the explained variation. The management control system will influence performance ranges from 13.7% to 31.7% depending on the reference of Cox & Snell  $R^2$  or Nagelkerke  $R^2$  methods, respectively.

**Table 8: Hosmer and Lemeshow Test**

Step	Chi-square	df	Sig.
1	3.613	5	.606

Source: SPSS output

Above table Homers and Lemeshow test results revealed that there is no statistical significance because  $p > 0.05$ . A non-significant chi-square indicates that the data fit the model well.

**Table 9: Classification Table**

Step	Observed Performance	Predicted Performance		Percent Correct
		Lower performance	High Performance	
1	Lower performance	10	16	38.5
	High Performance	6	287	98.0
Overall Percentage				93.1

a. The cut value is .500

Source: SPSS output

Table 9 shows a high level of performance through the percentage of correctly predicted cases with the observed characteristic compared to the total number of cases predicted as having the characteristic. Here  $(287 / (16 + 287)) * 100 = 94.71\%$ , all cases predicted as having a higher performance level 94.71% is correctly predicted.

The lower level of performance is  $(10 / (10 + 6)) * 100 = 62.5\%$ . That is, of all cases predicted are not in a higher level of performance, 74.3% were correctly predicted. The overall percentage is 93.1%.

**Table 10: Variables in the Equation**

Step	BC	B	S.E.	Wald	df	Sig.	Exp(B)
1 <sup>a</sup>	Belief Control(1)	-.436	.852	.261	1	.609	.647
	Belief Control (2)	4.377	1.279	11.710	1	.001	79.559
	Interactive Control (1)	2.850	.627	20.642	1	.000	17.295
	Diagnostic Control			5.121	2	.077	
	Diagnostic Control(1)	-1.683	.870	3.739	1	.053	.186
	Diagnostic Control(2)	-2.002	.890	5.055	1	.025	.135
	Constant	1.903	1.066	3.187	1	.074	6.704

a. Variable(s) entered on step 1: Belief Control, Integrative Control IA1, Diagnostic Control.

Source: SPSS output

In Table 9 belief control (2) and integrative control (1) had a statistically positive influence on the performance of cooperative societies, but diagnostic control (2) had a negative statistical significance relationship with the performance of cooperative societies.

Research model is

$$\text{Performance} = 1.903 + 4.377 \text{beliefcontrol} + 2.850 \text{Inteactivecontrol} - 2.002 \text{Dignosticcontrol}$$

## 5. Discussions and conclusion

Generally, males are working in cooperative societies. The analyzed results indicated that 83.4% of respondents are male and the remaining 16.6% of respondents are female. School leavers are joining this field. Analysed data revealed that logistic regression model was statistically significant,  $\chi^2(5) = 46.922$ , at 0.05 significant level ( $p < .05$ ). The model explained 31.7.0% (Nagelkerke  $R^2$ ) of the variance in performance and correctly classified 93.1% of cases. The belief control system is related to the organizational culture of the firm where it is surrounded by the shared vision and mission. This study was found not to be significantly related and contribute to the level of cooperatives performance. In Northern cooperatives societies, there is a moderate level of belief control which has a positive relationship with performance. The relationship is statistically significant at 0.05 levels. Hunt and Auster (1990) suggest that firms should integrate belief control systems in performance management system design to increase people's willingness to share knowledge to create values and change their beliefs in measuring performance. This result is in line with Hunt and Auster (1990) findings. The study suggested to cooperative societies sharing the vision, mission, and objectives of cooperatives among their staff will lead to higher performance of cooperatives. In some cooperatives, employees are not aware of their objectives. Therefore, information about who they are, what are they doing, and how are they doing it should be communicated to their staff.

There is a lack of an interactive control system in cooperatives societies. The lower level of interactive control system has a positive significant relationship with performance. Henri and Journeal (2010) found a positive significant relationship. The study suggested that the use of an interactive control system would not increase cooperatives' performance unless top management and employees are involved with the relevant knowledge and skill sharing. The present study results show that without staff knowledge and skill, the result performance will not improve. However, Simons (1995) suggested an interactive control system may motivate firms to search for new strategies and to adapt to the new strategies and practices to enhance the performance of the firm. The study suggested having a monthly meeting with employees which will lead to better performance of cooperatives.

In many cooperative societies, there is a centralized account-keeping system. Branches of the cooperative society were not preparing proper financial records for their operations. Further, they do not have the proper human resource for this task too. Therefore, they faced more difficulties in measuring their performance accurately. Further, most of the cooperative societies are earning losses and branches do not have the proper facilities to run their business. In most cases, a single person is maintaining a branch. Therefore they faced more difficulties in measuring their performance accurately. As Schaltegger et al., (2003) mentioned a diagnostic control system, such as an accounting information system, is important in communicating practice and strategy to stakeholders. Therefore, by actively applied diagnostic control systems, stakeholders know that management monitors their

performance frequently with appropriate tools which is the proper design of a performance management system. Diagnostic control has a negative significant relationship with performance. It shows that employees do not like to work under a traditional management control system. Therefore, valuation standards and incentives schemes of employees should be modified. Cooperative societies make up a large part of Sri Lanka's economy. Cooperatives are an essential source of employment opportunities and are estimated to contribute about 35% of employment. Therefore, researchers believe that awareness of management control systems is essential to cooperative societies' staff in the Northern Province of Sri Lanka.

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