



Management Control Systems and Its Effect on Performance: A Case of Water Supply Companies in Indonesia

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Abstract

This paper discusses how Management Control Systems is used to control performance in local government owned companies in Indonesia. Performance becomes important and unique in local government owned companies since those companies are not only targeted by profit but they also have responsibilities for social function. This study focuses on performance control in water supply companies as typical local government owned company in Indonesia. Balance Scorecard is chosen as the performance measurement tool in all water supply companies in Indonesia. This research applies quantitative research in order to analyze cause effect relationship between variables by using Multiple Regression Analysis. Data is collected through survey by using questionnaires. The respondents were the managerial team and employees of local government owned companies in Indonesia. The results show that four perspectives of Balance Scorecard are modified into four types of performance i.e. financial, service, operational, and human resource performance. This performance measurement is used to control people in achieving targeted performance. Moreover, this performance measurement becomes an important part of management control systems. This research also discovers that management control systems is effective to influence performance, even when some interventions exist.

Keywords

Management Control System, Performance, Balance Scorecard, Intervention, Performance Control

INTRODUCTION

There are some typical companies owned by local government in Indonesia. Typically, local government in Indonesia has local government owned companies such as Regional Bank, Rural Bank/Rural Credit Firm, Hospital, and Water Supply Company.

This research focuses on water supply company for several reasons. First, most of local government in Indonesia owns this type of company. Since political and cultural conditions in Indonesia are varied from one local government to other local government, this enhances the uniqueness of the research. Second, there is a similar method of performance measurement of water supply company in Indonesia. Thus, the case being researched is comparable to other water

supply companies in Indonesia. This will be beneficial to the researchers to do further research in the same type of companies but in wider scope. Third, water supply company has very strategic position in business since water is a human basic needs and water supply companies in Indonesia have social mission as well as profit generation mission. The company should be managed professionally like public firms in general, but with an addition to obey the regional rules. Regional rules differ from one region with the other regions, in accordance with the social and politic conditions of specific region. Local government owned companies receive a burden to achieve certain number of profit as a contribution to the Regional Income but the social mission should be the priority. Thus,

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the water supply company is a unique business. Fourth, in some local government there are some indications that local government owned companies are operated with some interventions from the local government officers, political parties, and other parties. This make the research becomes important to be conducted.

As the company that have social and profit generation mission, water supply companies should have performance measurement systems that accommodate these two missions. In the past, each water supply companies in Indonesia can choose their own method in performance evaluation. Since 2007 balance scorecard is adopted by all water supply companies in Indonesia as performance measurement systems. All water supply companies have an obligation to report their performance to the national body that assist the development of water supply systems in Indonesia. Hence, the performance of water supply companies in Indonesia is evaluated at least once a year and that evaluation produces a score for each water supply company. Based on that score, water supply companies can be categorized as a healthy company, less healthy company, or not healthy company.

The performance score of the companies is published publicly and used to evaluate the success level of the management. Thus, controlling performance becomes important in a water supply company. Management control systems applied in the company generally is used to ensure that the targeted performance can be achieved.

Management control system is a mechanism and an organizational device to ensure that strategies being planned by the organization are set to achieve the organizational goals. This control could be in the form of formal and informal control (Anthony & Govindarajan, 2007) and can be in the form of result, action, and personnel control (Merchant & Van der Stede, 2012).

This research would use an approach that had been developed by Merchant & Van der Stede (2012) stating that a good controlling should cover three types of control, which is result control, action control, and personnel control. These three control systems complete each other with a variation that is in harmony with the management philosophy (Praptapa, 2009).

The other uniqueness from a management control system on a local government owned water supply company is

on the existence of local government interventions that differs from one regional firm with the other regional firm. Interventions would become positive if it supports the achievements of the organizational goals and motivates performance, whereas interventions would become negative if it does not support the achievement of the organization goals and hampering performance. Thus, result control, action control, and personnel control depends heavily on the type of interventions happening in that regional firm. In other words, control interventions moderate between the three control elements and the firm achievements.

The types and intensity of control interventions differs between one water supply company with the other water supply companies. Issues of how the effect of those interventions in the relationship between result control, action control, and personnel control with the firm performance should be further analyzed.

This research will oversee and analyzed how the effect of result control, action control, and personnel control towards the firm performance in the condition where the firm is using multiple performance measures with interventions as the moderating variables. It is expected with this research, that regional firms would receive suggested solutions on the issues of the right regional firm management, and thus the presence of the regional firms would help the regional economics and also gives an optimal benefit for the societies.

LITERATURE REVIEW AND HYPOTHESES

This research could not be separated with the previous similar research that has been conducted by many scholars. Research that relates management control system with performance had been conducted at least by Hartman and Victor (2010), Bryant, Jones, and Widener (2004), Ferreira and Outley (2009). Those researches connect management control system with performance and other aspects like changes, culture, and strategies.

In this research some organization behavior theories would be synthesized with theories in accounting, especially those that relates to accounting management. It could be mentioned that this research is a behavioral accounting research. The variables involved in this research is

developed from Merchant and Van der Stede (2012), that relates the three elements of control, which is result control, action control, and personnel control with the firm performance.

Performance would always be connected with strategies that are applied, hence the success of performance achievements highly depends on the accuracy of strategies applied (Jänkäälä, 2007). Process in which managers influences the organization members to implement the strategies are expected to be recognized as management control (Anthony and Govindarajan, 2007). Thus, the firm performance depends on how the control system is applied in the firm (Anthony and Govindarajan, 2007; Merchant and Van der Stede, 2012). This concept is the base of this research to analyse the relationship between management control systems with the firm performance.

Merchant and Van der Stede (2012) purposes the concept of control into three form of control, which is result control, action control, and personnel control. In addition, Merchant and Van der Stede (2012) develop personnel control becoming self-control and control among individuals in the organization which are further mentioned as cultural control.

Firm Performance

Firm performance is defined differently on the point of view of accounting and other areas, but in general firm performance is the result from firm activities in a certain time period (Mackey, Mackey, and Barney, 2007). Firm performance is not limited to financial performance, but also to non-financial performance (Anthony and Govindarajan, 2007). Thus, the importance of performance for firms leads the firm to have a right performance measurement system.

Kaplan and Norton (1992) provide solution for the needs of financial and non-financial performance measures. Performance measurement concept that is purposed by Kaplan and Norton (1992 and 1993) is called Balanced Scorecard that measures performance in an integrative manner through four perspectives, which is financial perspective, customer perspective, internal business perspective, and also innovation and learning perspective. Agostino and Arnaboldi (2012) suggest the use of balance scorecard to control performance.

Result Control and Firm Performance

Result control is a system of control to ensure that people within the organization will get result as expected (Merchant and Van der Stede, 2012).

In result control, it should be clearly defined what type of result is the organization expected on the organization unit or individuals within the organization. For that reason, performance dimensions should be defined clearly. The clearness of performance dimensions would become a direction for the employees to see what is considered to be important by the firm. Clear performance definition would eliminate the confusions of the employees because it has been clear what performance that should be performed by neither an organization unit nor individuals inside the organization.

Besides performance dimensions, it is also needed a clear performance evaluation, thus every individual has the same point of view of whether the performance of an individual is satisfying enough or not. The research conducted by Bryant, Jones, and Widener (2004) shows that a clear performance evaluation would persuade individuals in the organization to work better.

After the performance dimensions and performance measurements are defined, the next role of management control system is to define a target. Target must be specific in accordance to the performance dimensions performance. Performance target would influence the employees' behavior in two alternatives. First, performance target would stimulate actions and increase the motivations because performance target guide directions for the employees and organization unit about what they should perform and prioritized in a certain firm. Second, performance target make it possible for employees to understand by nature the performance that they have performed. They could differentiate performance that they receive with the performance that has been targeted.

Reward and punishments is another important element on result control. Reward is a positive reinforcement to encourage employees to have an achievement, and punishment is a negative reinforcement that is expected to persuade employees to behave in a certain manner that will avoid them from not being an achiever (Siegel and Marconi, 1989).

Clear definitions about performance dimensions, right performance

measurements, right target definitions, and the right application of rewards and punishments would encourage employees and organization unit to perform. The effectiveness of result control will influence performance. Then, the hypothesis is formulated as follow:

H1: Effectiveness of result control influence positively toward performance.

Action Control and Firm Performance

Action control is a form of control to ensure that employees perform actions that are advantageous for the firm and avoid actions that is disadvantageous for the firm. This control has preventive characteristic, which is to protect unexpected things not to be performed and known in the end of the process. Fixing actions is done as soon as possible when unexpected actions are happened. Action control could be done at least by doing four actions, which is behavioral constraints, pre-action reviews, action accountability, and redundancy (Merchant and Van der Stede, 2012).

Giving behavioral constraints is a negative form of action control. This behavioral constraint is expected that it would be impossible, or not easy for employees to perform actions that should not be performed. This constraint could be conducted physically nor administratively, through a clear authority system.

Pre-action reviews are a form of control through actions before an individual or an organization unit conducts a certain action. This review could be in the form of formal or informal actions. Formal action could be in the form of defining action plan, verbally as well as written, to those who have an authority to make decisions.

Action accountability is one of a control system to ensure that employees is evaluated based on the performance being performed. To conduct controlling through action accountability, actions that have to be conducted and actions that should not be conducted must be clearly stated. In addition, this action should be communicated to all the layers of employees, and afterwards conducts observation or control about the actions conducted by employees. Good actions should be given rewards and bad actions should be given punishments.

Redundancy is to position people or equipment more than the minimal needs, thus it could receive certainty that when there are employees that cannot conduct their task

available or there are dysfunction equipment, there would be a substitute of employees or equipment so that the firm operational would not be disturb. This form of control should always protect the firm efficiency, thus it is unexpected to perform extravagance.

The explanations above show that if actions conducted by employees are controlled in a good manner, thus the performance achievement could be expected. The effectiveness of action control influences performance and the hypothesis is formulated as follow:

H2: The effectiveness of action control influence performance.

Personnel Control and Firm Performance

Personnel control is a form of control that makes it possible for an individual to control themselves. This is built from a perspective that basically human have the tendency to control themselves and motivate themselves. Personnel control is conducted to ensure that employees understand what is expected by the firm. This could be conducted if the firm has a quality of human resource with an expected quality. Personnel control is conducted since the recruitment process, job placement, training for employees, and also a good job design (Merchant and Van der Stede, 2012).

To ensure that firm performance is achieved, thus employee needs, level of expertise, and expected personality should be planned carefully. Employee recruitment process and employee placement have to be opened with a clear and right system.

Right training should be prepared for current employees. Training has an objective to increase the possibility that employees could give a performance as expected and also to prepare themselves to changes in organization. The training program does not have to be in the form of formal training, but it could also be in the form of informal training.

To motivate employees to perform as expected, employees had to have a certainty of the future in the firm. For that matter, thus job design and career path design for employees is needed to be formulated correctly and open. Good and open employee recruitment system, accurate and open employee placement, enough and qualified training, and also job design and good career design would persuade employees to perform. The effectiveness of personnel control influences performance and the hypothesis is as follow:

H3: The effectiveness of personnel control influences performance.

Cultural Control and Firm Performance

Cultural control is designed to persuade employees to control one another to give directions and group pressure towards individual that acts not in harmony with the norms and values applied in the firm.

Cultural control could be conducted through the availability of agreements and understanding of the codes of conduct, through codes of ethics or through motto or values that is committed in the firm that should be obeyed and believed by every employee. Another form of cultural control is through group-based rewards, intra-organizational transfers, physical and social arrangements, and tone at the top (Merchant and Van der Stede, 2012).

Agreements and understandings of what to perform through code of ethics, firm motto, firm vision and mission, or firm philosophy has an objective to make the employees feel that they are connected to each other in performing the firm mission. Agreements and understanding that is clear, simple, and motivating, will persuade every employee to unite and conduct their performance according to what it should be to achieve the company mission.

Group-based rewards will persuade members of the organization to persuade peers in their group to conduct the task together that are best for their group and also for the firm. Research conducted by Kruse (1992) shows that group-based rewards influence positively towards motivation and performance.

Job rotation has an objective to spread positive culture to other employees. Research conducted by Praptapa & Rokhayati (2012) shows that job rotation will increase the feel of belongingness for employees and will increase the firm performance as a whole. Besides that, job rotation will also decrease the possibility of cheating conducted by employees (KPMG LLP, 1999).

Room management, term management, clothing rules and management in socializing is also an effective way in conducting cultural control. Rooms that make the employees possible to work productively would persuade the firm performance. Rooms that are designed in such way thus between one employee with the others could learn and

control each other will also persuade performance.

Firm culture highly depends on how the leaders behave. Leaders have to show good examples because a leader is usually used as a model by the employees. Research shows that firm success is usually starts from the top and fraud that occurs in a firm also starts from the top (Jenkins, 2002, in Merchant and Van der Stede, 2012).

H4: The effectiveness of cultural control influences performance.

Interventions and Firm Performance

Interventions happens when there are certain parties available outside the organization take parts in intervening the management control system that has been developed by the firm. Interventions could be in the form of encouraging actions and could also be in the form of discouraging actions. Interventions are included in one of the research variables in this research because in practice, local government owned companies often face intervention.

Interventions could persuade the result control in the connection of achieving performance of firms. Target created that is challenging but achievable that are designed by the decision makers would persuade employees and firms to achieve the expected target. But it is also possible of control interventions that might disturb the firm to achieve the performance being expected. In the research language, this means that control intervention moderates the relationship between result control and firm performance (Sekaran, 2003).

In action control, interventions could also happen when there are parties outside the organization being involved in the mechanism of action control. From that intervention, there are possibilities occur where employees could conduct actions that are better and persuade performance, even though there are possibilities where employees becoming unsure with the action they have conduct, thus it would impact negatively to the achievement of performance.

Interventions often occur in personnel control and cultural control. Interventions in employee recruitment and employee placements could persuade performance but will also the other way around. This factor also occurs in cultural control. Then, the hypothesis formulated is:

H5: Intervention moderates the relationship between management control systems with performance.

METHODS

This research is a quantitative research that analyses cause effect relationship between variables by using Multiple Regression Analysis. Data is collected through survey by using questionnaires. The respondents were managerial team of Water Supply Companies in Indonesia. The number of water supply companies in Indonesia in 2013 data was 350 companies and to gather this data, 200 questionnaires were distributed. Returned questionnaires were 147 so the response rate is 73,5%. There were 6 questionnaires

that cannot be processed because the respondents did not answer the questions completely. The data processed are based on 141 questionnaires.

RESULTS AND DISCUSSION

Water supply companies in indonesia commit to adopt balance scorecard as a tool to measure and to control performance. The four perspectives of balance scorecard are modified into four aspects of performance, i.e. Financial, services, operation, and human resource performance. Table 1 describes the adoption of balance scorecard in water supply companies in indonesia.

Table 1: Adoption of Balance Scorecard in Water Supply Company

Four Perspectives of Balance Scorecard	Four Aspects of Performance	Performance Measured
Financial Perspective	Financial Performance	Return on equity (ROE) Operation ratio Cash ratio Collection Effectiveness Solvency ratio
Customer Perspective	Services Performance	Service Coverage Customer Growth Complaint Responded Water Quality Domestic Water Consumption
Internal Business Perspective	Operation Performance	Production Efficiency Non-Revenue Water (Water Loss) Services Operation Hours/Day Water Pressure Water Meter Replacement
Learning and Innovation Perspective	Human Resources Performance	Number of Employees/1000 customers Training and Education of Employees ratio Cost for Training and Education/Total Employees Costs

The modified balance scorecard is use by all local government owned water supply companies in Indonesia. This performance measurement systems is applied nationally and all water supply company is obligated to send performance audit report to the national body that assist the development of water supply systems in Indonesia called *Badan Pendukung Pengembangan Sistem Penyediaan Air Minum (BPPSPAM)*. Every year BPPSPAM produces a Performance Evaluation Report. This report is a compilation of performance report of all water supply companies in Indonesia that generally are audited by a national body called Development and Finance Controller Board or in Indonesian Language is called *Badan*

Pengawasan Keuangan dan Pembangunan (BPKP), which is a State Controller Agency that one of its functions is to conduct an audit, including performance audit.

In this performance measure, each element of performance is scored from 1 to 5 where 1 is the worst and 5 is the best. Performance elements are weighted so the 1 to 5 scores are multiplied by the weight to get weighted score. The total weighted score is used to categorise the company into 3 level of company healthiness, i.e. healthy company if the total weighted score is more than 2,8, less healthy if the total weighted score is more than 2.2 to 2.8, and unhealthy is the total weighted score is less or equal to 2.2. The performance of water supply companies in Indonesia is presented in table 2.

Table 2: Performance of Water Supply Companies in Indonesia 2009 to 2013

Year / Category	2009		2010		2011		2012		2013	
	Σ	%	Σ	%	Σ	%	Σ	%	Σ	%
Healthy	103	31	142	41	144	41	171	52	176	50
Less Healthy	115	34	129	38	105	38	101	31	104	30
Not Healthy	119	35	70	21	86	21	56	17	70	20
Total	337	100	341	100	335	100	328	100	350	100

Source: BPPSPAM, 2014

Since the purpose of this research is to explore how balance scorecard is used in performance measurement system, respondents were asked whether the existing system, which is based on balance scorecard, satisfy them or not. Respondents were also asked whether the performance they make is as expected or not.

The results show that 74% of respondents were satisfied with the existing performance measurement system. The rest of respondents were satisfied with some notes such as the need of individual performance measurement, more details indicators, and integration of balance scorecard with other measurements.

To know how the company and people in the company control their performance, the respondents were asked about the effectiveness of the management control systems in their company. The descriptive statistic shows that respondent agree that the performance they achieved is as their

expectation (score 3.2 of 4). The respondents were also agree that they have good result control (score 3 of 4), good action control (score 3 of 4), good personnel control (score 3.3 of 4), and good cultural control (score 3.2 of 4).

Respondents were also asked whether they got intervention from external parties in doing their job to achieve their performance. They were asked to score the level of intervention, which range from 0 for no intervention to 4 for strong intervention. Respondents agree that intervention exist in their company with score 3 out of 4. Intervention can be positive intervention and negative intervention.

To know the effect of management control systems to performance, multiple regression analysis is used. Table 3 shows the result of multiple regression analysis.

Table 3: Output of Multiple Regression Analysis

Description	t	Sign
Constant	8.674	.000
Result Control	2.343	.021
Action Control	.480	.632
Personnel Control	4.298	.000
Cultural Control	5.262	.000

Table 3 shows that all variables except action control have probability value less than alpha .05. It means that result control, personnel control, and cultural control effect positively to performance. Action control does not affect performance. It can be because action control in the company is more technical day-

to-day works that does not affect performance directly.

The next analysis is to know how intervention affects the relationship between management control systems and performance. Table 4 shows the output of SPSS for moderating effect of intervention by using Moderated Regression Analysis.

Table 4: Output of Moderating Effect of Intervention

Description	Coefficient	T	Sign
Constant	24.731	5.661	.000
Result Control	-.181	-.688	.492
Action Control	.121	.369	.713
Personnel Control	2.043	3.081	.003
Cultural Control	-.851	-4.677	.000
Intervention	.012	.818	.415
Moderating1 (Result - Performance)	-.008	-.432	.666
Moderating2 (Action – Performance)	-.103	-2.699	.008
Moderating3 (Personnel – Performance)	.119	5.277	.000
Moderating4 (Cultural – Performance)	-.789	-3.109	.002

The result in Table 4 shows that intervention has moderation effect only to action control, personnel control and cultural control since their probability value is less than 0.05. Intervention does not moderate the result control. It means that when intervention exists, result control will be best used in the company because it is not influenced by intervention.

CONCLUSION

In the local government owned water supply companies the four perspectives of Balance Scorecard are modified into four types of performance i.e. financial, service, operational, and human resource performance. This performance measurement system is suitable to be applied in the company.

Management control systems are used to control performance. Result control, personnel control, and cultural control affect performance. Intervention has moderating effect to action control, personnel control, and cultural control, but not to result control. This research also discovers that effective management control systems give positive impact to performance, even when some interventions exist.

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