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Effect of Management Control System (MCS), Activity Based Management (ABM), and Value Chain on Effectiveness, Efficiency, Economic Value Added (EVA) and Its Impact on Profitability in Construction Service Companies in East Java Province

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ABSTRACT

The purpose of the study was to analyze the effect of Management Control System (MCS), Activity Based Management (ABM), and Value Chain on Effectiveness, Efficiency, Economic Value Added (EVA) and Its Impact Against Profitability in Construction Service Companies in East Java Province. The type of research used in this study is quantitative research. Quantitative research is a method used to test certain theories by examining the relationship of how much influence between variables is the level of business competition and Islamic business ethics on the behavior of Muslim entrepreneurs with statistical analysis. This research is a survey research because it uses a data collection tool in the form of a questionnaire / questionnaire. The results of the questionnaire were then tested using validity test, reliability test. The population in this study were construction service companies incorporated in the Association of Indonesian National Construction Implementation Association (GAPENSI) East Java Province with K1 sub-qualifications of 978 companies, K2 as many as 1369 companies and K3 as many as 1194 companies with a total of 3541 construction service companies (contractors). The sample used in this study was 97 contractors. For this study data analysis used theapproach Partial Least Square (PLS). The results of this study indicate that; variable Management Control System (MCS) significantly affects the effectiveness variables, (2) variable Management Control System (MCS) significantly affects the variable efficiency, (3) the variable Management Control System (MCS) significantly affects the variable Economic Value Added(EVA),(4) Management Control System (MCS) variable has a significant effect on profitability variable (5) Activity Based Management (ABM) variable has a significant effect on effectiveness variable (6) Activity Based Management (ABM) variable influences efficiency variable (7)variable Activity BasedManagement (ABM) has a significant effect on the variables Economic Value Added (EVA), (8) Activity Based Management (ABM) variables have a significant effect on profitability variables, (9) variables Value Chain have no significant effect on effectiveness variables, (10) variables Value Chain significant effect on the efficiency variable (11) variable Value Chain experienc the effect is not significant on the variables Economic Value Added (EVA), (12)variables Value Chain have a significant effect on profitability variables, (13) effectiveness variables have a significant effect on profitability variables, (14) efficiency variables have a significant effect on profitability variables, (15) variables Economic Value Added (EVA) has a significant effect on profitability variables.

Keywords: management control system (MCS), activity based management (ABM), and value chain for effectiveness, efficiency, economic value added (EVA), profitability.

INTRODUCTION

In East Java, especially in the city of Surabaya, developments in construction services have increased rapidly due to the many developments in the city of Surabaya such as hotels, apartments and housing. Construction services are a business sector that is in great demand by community members at various levels, as seen from the increasing number of companies engaged in construction services. The government encourages the growth of the construction sector by 10-15% per year. Based on data from the Central Statistics Agency (BPS), the growth of the construction sector in 2013 was 7.5%, in 2014 it was 5.2%, and in 2015 it was 8.7% (JatimProv Bappeda).

The large number of companies engaged in construction services will certainly result in high competition among each of these companies. Of the many business links that exist in a construction industry, it is certain that this will be the main focus of competition. The more complete the business link in a company engaged in the construction service industry, the higher the competitiveness of the company.

In line with the increasing competition, the construction service companies demand to always improve their qualifications and performance. Seeing this, it is very important to examine the performance of construction service companies in developing their business and increasing competitiveness in the global market. One of the factors that influence and determines the success of construction service companies, namely internal factors. Internal factors are one of the important factors in determining the strategy for company development. These internal factors include management, corporate culture, human resources, finance, and other resources. Unfortunately in many cases in the construction industry, contractors still pay less attention to this marketing function (Pearce, 1992). Pearce in his study stated that contractors believe that the most important part of an organization is part of production, so they are more production-oriented than marketing. They are more likely to see opportunities that are suitable for their abilities as contractors, compared to adapting to current conditions and market opportunities in the future. Although the results of the study stated that, but in reality the construction service contractors in Indonesia in particular, still exist. This situation is certainly an interesting thing to observe.

Answering this, Babiarz (2000) provides practical examples of how the construction industry can learn from what has been commonly done in other products and services industries. Project failure can be caused by failure to implement or use of improper working methods, inappropriate use of equipment and use of materials that are not in accordance with the specifications and standards that have been set. Therefore the failure in the implementation of ordinary construction in terms of quality, cost and time in the construction period. Failure to implement this construction illustrates the poor performance of a construction service company. While excellent performance is needed to maintain the reputation and reliability of a company competing with similar competitors. Performance is a result that must be known and confirmed to certain parties to find out the level of achievement of an agency's target associated with the vision carried out by an organization or company and to know the positive and negative effects of an operational policy.

Based on this background, the purpose of this study was to analyze: (1) The Effect of *Management Control System* (MCS) on the Effectiveness of Construction Service Companies in East Java Province. (2) Effect of *Management Control System* (MCS) on Efficiency in Construction Service Companies in East Java Province. (3) Effect of *Management Control System* (MCS) on *Economic Value Added (EVA)* in Construction Service Companies in East Java Province. (4) Effect of *Management Control System* (MCS) on the Profitability of Construction

Services in East Java Province. (5) Effect of *Activity Based Management* (ABM) on Effectiveness in Construction Service Companies in East Java Province. (6) Effect of *Activity Based Management* (ABM) on Efficiency in Construction Service Companies in East Java Province. (7) Effect of *Activity Based Management* (ABM) on *Economic Value Added* (EVA) in Construction Service Companies in East Java Province. (8) Effect of *Activity Based Management* (ABM) on Profitability in Construction Service Companies in East Java Province. (9) Effect of *Value Chain* on Effectiveness in Construction Service Companies in East Java Province. (10) Effect of *Value Chain* on Perception of Efficiency in Construction Service Companies in East Java Province. (11) Influence *Value Chain* on *Economic Value Added* (EVA) in Construction Service Companies in East Java Province. (12) Effect of *Value Chain* on Perception of Profitability in Construction Service Companies in East Java Province. (13) Effect of Effectiveness on Profitability in Construction Service Companies in East Java Province. (14) Effect of Efficiency on Profitability in Construction Service Companies in East Java Province. (15) Effect of *Economic Value Added* (EVA) on Profitability in Construction Service Companies in East Java Province.

LITERATURE REVIEW

Management Control System (MCS)

According to Malmi, T. (2001) in MCS consists of tools and systems used by managers to ensure that decisions and employee behavior are consistent with the strategy and goals of the organization by issuing a system that supports decision making (decision support system). He argues that MCS is an integrated system and a need to escort organizations from various aspects with which the behavior of actors in the organization can be controlled, from matters not covered when viewed from the aspects of accounting and management.

Activity Based Management (ABM)

is a broad and integrated approach that focuses management attention on activities with the aim of improving customer value and profits achieved by providing this value (Hansen and Mowen, 2004: 489).

The Value Chain (Value Chain)

Value Chain is a series of activities carried out a company's products or services. This concept was popularized by Michael Porter in the book Competitive Advantage: Creating and Sustaining Superior Performance (1985). According to this concept, company activities are divided into two major parts, namely primary activities and support activities. The main activities are divided into five, namely logistics incoming (inbound logistics), operations management (operations), logistics exit (outbound logistics), marketing and sales (marketing and sales),and services(service). Supporting activities are divided into four, namely corporate infrastructure (firm infrastructure), HR management (human resource management), technology (technology), and procurement (procurement).

Effectiveness

Effectiveness according to Kurniawan (2005: 109) is the ability to carry out tasks, functions (operations of program or mission activities) rather than an organization or the like which lacks pressure or tension among its implementation. Sedarmayanti (2016: 59) defines the concept of effectiveness as a measure that illustrates how far the target can be achieved. The definition of effectiveness is more output oriented while the problem of using input is less of a major concern. If efficiency is associated with effectiveness, even though there is an increase in effectiveness, efficiency may not necessarily increase.

Efficiency

The concept of efficiency is a fundamental concept and is born of economic concepts. However, the concept of efficiency can be defined from various perspectives and backgrounds. In general, efficiency can be directed to a concept of achieving an outcome with optimal use of resources. In Adiwarman A. Karim (2016), it was assumed that "*Efficient is doing the things right*", which means that doing everything in the right way to get optimal results.

Economic Value Added (EVA)

Definition of EVA according to Brigham & Houstan (2006: 68), EVA is the value added by management to shareholders for a particular year. EVA reflects the residual income remaining after the cost of all capital including equity capital is deducted. 2.8. Profitability

Profitability

Is the ability of a company to get profit (profit) in a certain period. The same understanding is conveyed by Husnan (2001) that Profitability is the ability of a company to generate profits (profit) at the level of sales, assets, and certain share capital.

RESEARCH METHODS

Approach

The type of research used in this study is quantitative research. Quantitative research is a method used to test certain theories by examining the relationship of how much influence between variables is the level of business competition and Islamic business ethics on the behavior of Muslim entrepreneurs with statistical analysis. This research is a survey research because it uses a data collection tool in the form of a questionnaire / questionnaire. The results of the questionnaire were then tested using validity test, reliability test.

Population and Sample

The population in this study were construction service companies incorporated in the Association of Indonesian National Construction Implementation Association (GAPENSI) East Java Province with K1 sub-qualifications of 978 companies, K2 as many as 1369 companies and K3 as many as 1194 companies with a total of 3541 construction service companies (contractors).

Research using survey methods is very important in determining the size of the sample size. The rules for selecting samples should use random sample selection and sample size must be determined by the risk of sampling that can be tolerated. Based on these considerations, the sample selection method used in this study uses the formula from Slovin, namely as follows:

$$n = \frac{N}{1 + Ne^2}$$

Where:

n= Number of samples of construction service companies

N= Total population of construction service companies

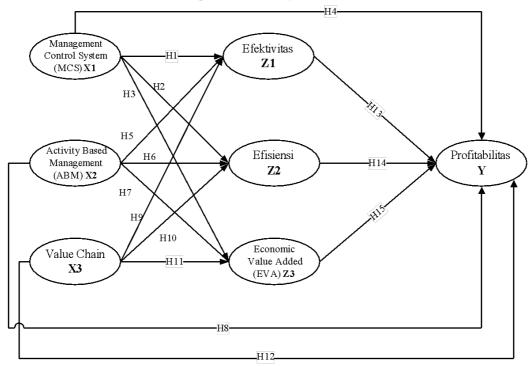
e²= Precision which set (margin of error) of 10%

$$n = \frac{3541}{1 + (3541x0.1^2)} = 97.25 \gg 97$$
 Respondents

In this case the number of study samples was set at 97 contractors.

Conceptual Model

Figure 1. Conceptual Model



Operational definition is the operationalization of theoretical concepts that are derived into measurable indicators as follows:

- 1. *Management Control System* (MCS) according to Anthony (2015) can be interpreted as a tool, media, or means used by senior managers to ensure that the manager's subordinates effectively and efficiently keep trying to achieve organizational goals.
- 2. Activity Based Management (ABM) according to Mulyadi (2015) is the management of activities to increase the value (value) received by customers and to increase profits through increasing the value (value).
- 3. *Value Chain.* According to Porter (1985) is a series of activities carried out by a company to produce products or services.
- 4. Effectiveness according to Makmur (2013) is a measure that states how far the target (quantity, quality, and time) has been achieved by management, which target has been determined in advance).
- 5. Efficiency according to Karim, A. (2016) can be interpreted as the ability of a business unit to achieve the desired goals, efficiency is always associated with organizational goals that must be achieved by the company.
- 6. *Economic Value Added* (EVA) according to Endri (2008) is an after-tax operating profit by considering the cost of capital used to improve the performance of the company, paying fair attention to the expectations of shareholders and creditors.
- 7. Profitability according to Husnan (2013) is the company's ability to generate profits by using the resources within the company itself.

RESULTS AND DISCUSSION

The results of the descriptive analysis after the estimated model meets the criteria *Outer Model*, then the structural model (tested *Inner model*) is. *R Square*(R²⁾ is often called the coefficient of determination, is a measure suits their goodness(*goodnessof*fit) from the regression equation; that is giving the proportion or percentage of total variation in the

dependent variable explained by the independent variable. The value of R^2 is located between 0-1, and the suitability of the model is said to be better if R^2 is getting closer to 1.

To prove the hypothesis in this study that is by looking at the significance of the influence of the variable coefficients and significance values (t statistics). In PLS2.0 this is done by looking at the *Boostrapping report Algorithm*, following the results:

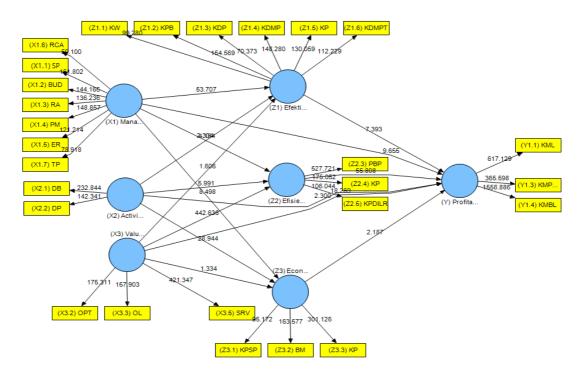


Figure 4.1 Bootstrapping Output

Table 4.1 Path Coefficients (Mean, STDEV, T-Values)

Table 4.1 Path Coefficients (Mean, STDEV, 1-values)						
	Original Sample (O)	Mean (M)	Standard Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (0 / STERR)	Description
(X1) Management Control System (MCS) -> (Y) Profitability	0.097876	0.098400	0.010138	0.010138	9.654824	Significant
Effect (X1) Management Control System (MCS) -> (Z1) Effectiveness of	0.653921	0.657470	0.012176	0.012176	53.706950 Effect	Significant
(X1) Management Control System (MCS) -> (Z2) Efficiency	-0.017173	-0.016800	0.007356	0.007356	2.334463 Effect	Significant
(X1) Management Control System (MCS) -> (Z3) Economic Value Added (EVA)	-0.113651	-0.115153	0.013374	0.013374	8.498046 Impact	Significant
(X2) Activity Based Management (ABM) -> (Y) Profitability	0.023679	0.022882	0.010296	0.010296	2.299778 influence	Significant
(X2) Activity Based Management (ABM) -> (Z1) Effectiveness	0.061830	0.061802	0.014779	0.014779	4.183623	Significant Influence
(X2) Activity Based Management (ABM) -> (Z2) Efficiency	0.027605	0.027524	0.004607	0.004607	5.991405	Berpen Significant Significance
(X2) Activity Based Management (ABM) -> (Z3) Economic Value Added (EVA)	0.523917	0.520786	0.018101	0.018101	28.944243	Significant Influence
(X3) Value Chain -> (Y) Profitability	0.218901	0.220096	0.011982	0.011982	18.269090 Effect	Significant
(X3) Value Chain -> (Z1) Effectiveness	-0.021851	-0.020266	0.013602	0.013602	1.606420	Influential Significance
(X3) Value Chain -> (Z2) Efficiency	0.918470	0.918452	0.002075	0.002075	442.635788 Effect	Significant
(X3) Value Chain -> (Z3) Economic Value Added (EVA)	-0.021124	-0.023348	0.015840	0.015840	1.333631	Influence Significant
(Z1) Effectiveness -> (Y) Profitability	-0.077685	-0.079353	0.010508	0.010508	7.393130 Effect	Significant
(Z2) Efficiency -> (Y) Profitability	0.634316	0.633240	0.011366	0.011366	55.808247 Effect	Significant
(Z3) Economic Value Added (EVA) -> (Y) Profitability	-0.024361	-0.024011	0.011137	0.011137	2.187289 influence on the	Significant

Path Coefficient shows the level of significance and the relationship between research variables. With the following criteria:

- a) If t count> t table, which is more than 1.96 then the hypothesis is accepted
- b) If t count <t table, which is more than 1.96, the hypothesis is rejected

Thus *Path Coefficient* gives the following results:

1. Effect (X1) *Management Control System* (MCS) Against (Y) Profitability
Based on thetable *Path Coefficient* about the influence of *Management Control System*

(MCS) on (Y) Profitability is a significant effect with a T-statistic of 9.654824> 1.96. The *original sample estimate value* is 0.097876 which indicates that the direction of the relationship between the *Management Control System* (MCS) to (Y) profitability is in the same direction.

2. Effect of (X1) Management Control System (MCS) on (Z1) Effectiveness

Based on thetable *Path Coefficient* about the influence of *Management Control System* (MCS) on (Z1) Effectiveness is significant with a T-statistic of 53.706950> 1.96. The *original sample estimate value* is equal to 0.653921 which indicates that the direction of the relationship between the *Management Control System* (MCS) to (Z1) Effectiveness is in the same direction.

3. Effect of (X1) Management Control System (MCS) on (Z2) Efficiency

Based on thetable *Path Coefficient* about the influence of *Management Control System* (MCS) on (Z2) Efficiency is a significant effect with a T-statistic of 2.334463> 1.96. The *original sample estimate value* is -0.017173 which indicates that the direction of the relationship between the *Management Control System* (MCS) and (Z2) Efficiency is the opposite direction.

4. Effect of (X1) Management Control System (MCS) on (Z3) Economic Value Added (EVA)

Based on thetable *Path Coefficient* about the influence of *Management Control System* (MCS) on (Z3) *Economic Value Added* (EVA) is a significant effect with a T-statistic of 8.498046> 1.96. The *original sample estimate value* is -0.113651 which indicates that the direction of the relationship between the *Management Control System* (MCS) to (Z3) *Economic Value Added* (EVA) is the opposite direction.

5. Influence (X2) Activity Based Management (ABM) Against (Y) Profitability

Based on thetable *Path Coefficient* about influence (X2) *Activity Based Management* (ABM) on (Y) Profitability is significant with a T-statistic of 2.299778> 1.96. The *original sample estimate value* is 0.023679 which indicates that the direction of the relationship between (X2) *Activity Based Management* (ABM) towards (Y) Profitability is in the same direction.

6. Effect (X2) Activity Based Management (ABM) Against (Z1) Effectiveness

Based on thetable *Path Coefficient* about influence (X2) *Activity Based Management* (ABM) towards (Z1) Effectiveness is a significant effect with a T-statistic of 4.183623> 1.96. The *original sample estimate value* is equal to 0.061830 which indicates that the direction of the relationship between (X2) *Activity Based Management* (ABM) towards (Z1) Effectiveness is in the same direction.

7. Effect (X2) Activity Based Management (ABM) Against (Z2) Efficiency

Based on thetable *Path Coefficient* about influence (X2) *Activity Based Management* (ABM) against (Z2) Efficiency is a significant effect with a T-statistic of 5.991405> 1.96. The *original sample estimate value* is 0.027605 which indicates that the direction of the relationship between (X2) *Activity Based Management* (ABM) to (Z2) Efficiency is in the direction of

8. Influence (X2) Activity Based Management (ABM) on (Z3) Economic Value Added (EVA)

Based on thetable *Path Coefficient* about influence (X2) *Activity Based Management* (ABM) against (Z3) *Economic Value Added* (EVA) is a significant effect with a T-statistic of 28.944243> 1.96. The *original sample estimate value* is 0.523917 which indicates that the direction of the relationship between (X2) *Activity Based Management* (ABM) to (Z3) *Economic Value Added* (EVA) is the opposite direction.

9. Influence (X3) Value Chain Against (Y) Profitability

Based on the table *Path Coefficient* about the influence (X3) of the *Value Chain* on (Y) Profitability is significantly affected by the T-statistic of 18.269090> 1.96. The *original*

sample estimate value is equal to 0.218901 which indicates that the direction of the relationship between (X3) Value Chain to (Y) Profitability is in the same direction.

10. Influence (X3) Value Chain Against (Z1) Effectiveness

Based on thetable *Path Coefficient* about the influence (X3) *Value Chain* on (Z1) Effectiveness is not significant effect with a T-statistic of 1.606420 > 1.96. The *original sample estimate value* is -0.021851 which shows that the direction of the relationship between (X3) *Value Chain* towards (Z1) Effectiveness is opposite direction.

11. Effect (X3) Value Chain Against (Z2) Efficiency

Based on thetable *Path Coefficient* about the influence (X3) of the *Value Chain* on (Z2) Efficiency is a significant effect with a T-statistic of 442.635788> 1.96. The *original sample estimate value* is 0.918470 which indicates that the direction of the relationship between (X3) *Value Chain* to (Z2) Efficiency is in the same direction.

12.Influence (X3) Value Chain Against (Z3) Economic Value Added (EVA)

Based on thetable *Path Coefficient* about influence (X3) *Value Chain Management* (ABM) against (Z3) *Economic Value Added* (EVA) is no significant effect with a T-statistic of 1.333631> 1.96. The *original sample estimate value* is -0.021124 which shows that the direction of the relationship between (X3) *Value Chain* to (Z3) *Economic Value Added* (EVA) is the opposite direction.

13. Effect (Z1) Effectiveness on (Y) Profitability

Based on thetable *Path Coefficient* about influence (Z1) Effectiveness on (Y) Profitability is a significant effect with a T-statistic of 7.393130> 1.96. The *original sample estimate value* is equal to -0.077685 which indicates that the direction of the relationship between (Z1) Effectiveness towards (Y) Profitability is the direction of direction.

14. Effect (Z2) Efficiency Against (Y) Profitability

Based on thetable, there is *Path Coefficient* influence (Z2) Efficiency towards (Y) Profitability is a significant effect with a T-statistic of 55.808247> 1.96. The *original sample estimate value* is 0.634316 which indicates that the direction of the relationship between (Z2) Efficiency towards (Y) Profitability is in the same direction.

15. Effect (Z3) of Economic Value Added (EVA) on (Y) Profitability

Based on thetable *Path Coefficient* about the influence (Z3) of *Economic Value Added* (EVA) towards (Y) Profitability is a significant effect with T-statistic of 2.187289> 1.96. The *original sample estimate value* is -0.024361 which shows that the direction of the relationship between (Z3) *Economic Value Added* (EVA) towards (Y) Profitability is the opposite direction.

CONCLUSION

Based on the results of analysis and hypothesis testing that has been done before, the results of the study conclude the following matters; (1) *Management Control System* (MCS) has a significant effect on the Effectiveness of Construction Service Companies in East Java Province, (2) *Management Control System* (MCS) has a significant effect on Efficiency in Construction Service Companies in East Java Province, (3) *Management Control System* (MCS) has a significant effect on *Economic Value Added (EVA)* in Construction Services Companies in East Java Province, (4) *Management Control System* (MCS) has a significant effect on the Profitability of Construction Services in East Java Province, (5) *Activity Based Management* (ABM) (6) *Activity Based Management* (ABM) affects the Efficiency of Construction Services Companies in East Java Province, (7) *Activity Based Management* (ABM) has a significant effect on *Economic Value Added* (EVA) In Construction Services Companies in East Java Province, (8) *Activity Based Management* (ABM) is heard uh significant to Profitability in Construction Service Companies in East Java Province, (9) *Value Chain* has no significant effect on Effectiveness in

Construction Service Companies in East Java Province, (10) *Value Chain* has a significant effect on Efficiency in Construction Service Companies in East Java Province, (11) *Value Chain* has no significant effect on *Economic Value Added* (EVA) in Construction Services Companies in East Java Province, (12) *Value Chain* has a significant effect on Profitability in Construction Service Companies in East Java Province, (13) Effectiveness has a significant effect on profitability In Construction Services Companies in East Java Province, (14) Efficiency has a significant effect on Profitability in Construction Services Companies in East Java Province, (15) *Economic Value Added* (EVA) has a significant effect on Profitability in Construction Service Companies in East Java Province.

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