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The Application of Management Control System (MCS), Activity Based Management (ABM), and Value Chain on Effectiveness, Efficiency, Economic Value Added (EVA) and their Impact on Contractor Profitability in Eastern Indonesia

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Abstract

The purpose of this study is to analyze the influence of Management Control System (MCS), Activity Based Management (ABM), and Value Chain on Effectiveness, Efficiency, Economic Value Added (EVA), and their impact on Profitability in Construction Services Companies in East Java Province. The type of research used in this study is quantitative research. This research is a survey research because it uses a questionnaire as a data collection tool, and the results were tested using validity and reliability tests. The population in this study were construction service companies that are members of the Indonesian National Construction Implementation Association (GAPENSI) of East Java Province with a total of 3541 companies, and the sample used was 97 contractors. Data analysis used the Partial Least Square (PLS) approach. The results of this study indicate that Management Control System (MCS) and Activity Based Management (ABM) variables have a significant effect on effectiveness, efficiency, Economic Value Added (EVA), and profitability variables. Value Chain variable has no significant effect on effectiveness and Economic Value Added (EVA), but has a significant effect on efficiency and profitability variables. Effectiveness, efficiency, and Economic Value Added (EVA) variables have a significant effect on profitability variable.

Keywords: Management Control System (MCS), Activity Based Management (ABM), Value Chain, Effectiveness Efficiency, Economic Value Added (EVA), Profitability Construction Services Companies, East Java Province, Quantitative Research, Survey Research Questionnaire, Validity and Reliability Test Partial Least Square (PLS), GAPENSI Contractors

Introduction

In East Java, particularly in Surabaya, development in the construction sector has increased rapidly due to the numerous developments in the city, such as hotels, apartments, and housing. Construction services are a business sector that is highly sought after by members of society at various levels, as evidenced by the increasing number of companies engaged in the construction services sector. The government is encouraging the construction sector to grow by 10-15% per year. According to data from the Central Statistics Agency (BPS), the construction sector grew by 7.5% in 2013, 5.2% in 2014, and 8.7% in 2015 (East Java Provincial Development Planning Agency).

The large number of companies operating in the construction services sector will undoubtedly result in intense competition among them. The greater the number of business links within a construction industry, the more competitive it will become. The more comprehensive the business links within a construction services company, the greater its competitiveness.

As competition intensifies, construction companies are required to continually improve their qualifications and performance. Therefore, it is crucial to examine the performance of construction companies in developing their businesses and enhancing their competitiveness in the global market. One of the factors influencing and determining the success of a construction company is internal factors. Internal factors are crucial in determining a company's development strategy. These internal factors include management, corporate culture, human resources, finances, and other resources.

Unfortunately, in many cases in the construction industry, contractors still pay little attention to this marketing function (Pearce, 1992). Pearce's study stated that contractors believe that the most important part of an organization is production, so they are more oriented towards production than marketing. They prefer to look for opportunities that fit their capabilities as contractors, rather than adapting to current conditions and future market opportunities. Despite these research findings, the reality is that construction service contractors in Indonesia, in particular, still exist today. This situation is certainly interesting to observe.

In response, Babiarz (2000) provides a practical example of how the construction industry can learn from practices commonly practiced in other product and service industries. Project failure can be caused by implementation failures or the use of incorrect work methods, the use of inappropriate tools, and the use of materials that do not meet established specifications and standards. Therefore, failure in construction implementation usually occurs in terms of quality, cost, and time during the construction period. This failure in construction implementation reflects poor performance in a construction services company. Meanwhile, excellent performance is needed to maintain a company's reputation and reliability in competing with similar competitors. Performance is a result that must be known and confirmed to certain parties to determine the level of achievement of an agency's targets related to the vision of an organization or company and to understand the positive and negative impacts of an operational policy.

Based on this background, the objectives of this study are to analyze: (1) The Influence of Management Control System (MCS) on Effectiveness in Construction Services Companies in

East Java Province. (2) The Influence of Management Control System (MCS) on Efficiency in Construction Services Companies in East Java Province. (3) The Influence of Management Control System (MCS) on Economic Value Added (EVA) in Construction Services Companies in East Java Province. (4) The Influence of Management Control System (MCS) on Profitability in Construction Services in East Java Province. (5) The Influence of Activity Based Management (ABM) on Effectiveness in Construction Services Companies in East Java Province. (6) The Influence of Activity Based Management (ABM) on Efficiency in Construction Services Companies in East Java Province. (7) The Influence of Activity Based Management (ABM) on Economic Value Added (EVA) in Construction Services Companies in East Java Province. (8) The Influence of Activity Based Management (ABM) on Profitability in Construction Services Companies in East Java Province. (9) The Influence of Value Chain on Effectiveness in Construction Services Companies in East Java Province. (10) The Influence of Value Chain on Perception of Efficiency in Construction Services Companies in East Java Province. (11) The Influence of Value Chain on Economic Value Added (EVA) in Construction Services Companies in East Java Province. (12) The Influence of Value Chain on Perception of Profitability in Construction Services Companies in East Java Province. (13) The Influence of Effectiveness on Profitability in Construction Services Companies in East Java Province. (14) The Influence of Efficiency on Profitability in Construction Services Companies in East Java Province. (15) The Influence of Economic Value Added (EVA) on Profitability in Construction Services Companies in East Java Province.

Literature Review

A. Management Control System(MCS)

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

B. Activity Based Management (ABM)

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

C. Value Chain

Value Chainis a series of activities carried out by acompanyto produceproductorservice. This concept was popularized byMichael Porterin the book Competitive Advantage: Creating and Sustaining Superior Performance (1985). According to this concept, company activities are divided into two large parts, namely primary activities and support activities. Primary activities are divided into five, namelylogisticsinbound logistics,operations management(operations), outbound logistics,marketingAndsale(marketing and sales), and service. Supporting activities are divided into four, namely company infrastructure (firm infrastructure), human resource management (human resource management),technology(technology), as well asprocurement(procurement), namely company infrastructure (firm infrastructure),human resource management(human resource management),technology(technology), as well asprocurement(procurement).

D. Effectiveness

Effectiveness according to Kurniawan (2005: 109) is the ability to carry out tasks, functions (operations, program activities or missions) of an organization or the like without any pressure or tension between implementation. Sedarmayanti (2016:59) defines the concept of effectiveness as a measure that provides an idea of how far the target can be achieved. This understanding of effectiveness is more output-oriented while the problem of using input is less of a main concern. If efficiency is linked to effectiveness, even though there is an increase in effectiveness, efficiency does not necessarily increase.

E. Efficiency

The concept of efficiency is fundamental and stems from economics. However, it can be defined from various perspectives and backgrounds. Generally, efficiency refers to the concept of achieving results through optimal use of resources. Adiwarman A. Karim (2016) states that "Efficient is doing the things right," meaning doing everything the right way to achieve optimal results. To achieve efficiency, adequate resources are needed (Mesbah et al., 2017).

F. Economic Value Added(EVA)

According to Brigham & Houston (2006:68), EVA is the value added by management to shareholders during a given year. EVA reflects the residual profit remaining after deducting the cost of all capital, including equity capital. 2.8. Profitability

G. Profitability

Merepresents a company's ability to generate profits (gains) within a certain period. Husnan (2001) shares the same definition, stating that profitability is a company's ability to generate profits at a certain level of sales, assets, and share capital.

Research Methods

A. Research Approach

The type of research used in this study is quantitative. Quantitative research is a method used to test a specific theory by examining the relationship between variables, namely the level of business competition and Islamic business ethics, on the behavior of Muslim entrepreneurs through statistical analysis. This study is a survey study because it uses a questionnaire as a data collection tool. The results of the questionnaire are then tested using validity and reliability tests.

B. Population and Sample

The population in this study were construction service companies that are members of the Indonesian National Construction Implementation Association (GAPENSI) of East Java Province with sub-qualifications of K1 as many as 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 crucial in determining sample size. The principle for selecting samples should be random sampling, and the sample size should be determined within a tolerable sampling risk. Based on these considerations, the sample selection method used in this study is a random sampling method.Slovin's formula is as follows:

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

Where :
n = Number sample company service construction
N = Number population company service construction
e 2 = Precision set (margin of error) of 10%

In this case, the number of research samples was set at 97 contractors.
Conceptual Model

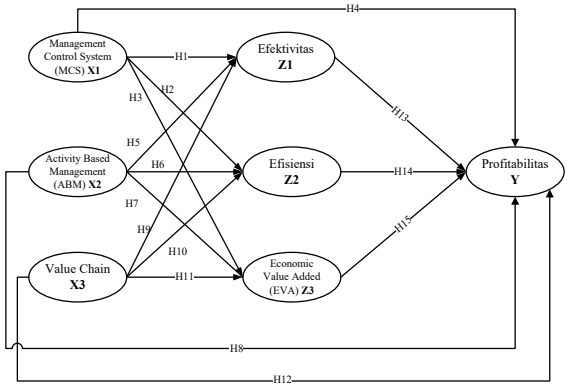

Figure 1. Conceptual Model

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

1. Management Control System(MCS) according toAnthony (2015)candefined as a tool, media or means used by senior managers to ensure that subordinate managers effectively and efficiently continue to strive to achieve organizational goals.
2. Activity Based Management(ABM) according toMulyadi (2015) is the management of activities to increase the value received by customers and to increase profits through increasing that value.
3. Value Chain.According toPorter (1985) is a series of activities carried out by acompanyto produceproductorservice.
4. Effectiveness according toProsperous (2013) ais a measure that states how far the target (quantity, quality and time) has been achieved by management, where the target has been determined in advance.).
5. Efficiency according toKarim, A. (2016) dapatinterpreted as the ability of a business unit to achieve 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), it is operational profit after tax by taking into account the cost of capital used to improve company performance, 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.

Data Analysis and Result

The results of the descriptive analysis sAfter the estimated model meets the Outer Model criteria, the next step is to test the structural model (Inner model).R Square(R2), often referred to as the coefficient of determination, measures the goodness of fit of a regression equation; that is, it provides the proportion or percentage of total variation in the dependent variable explained by the independent variable. The R2 value lies between 0 and 1, and the model fit is said to be better if the R2 is closer to 1.

To prove the hypothesis in this study, we examine the significance of the influence between variables on the parameter coefficients and the significance value (t-statistic). In PLS2.0, this is done by examining the Algorithm Bootstrapping report. The results are as follows:

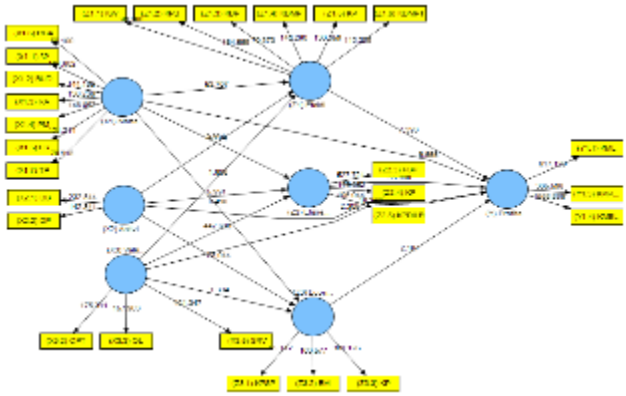

Figure 2. Bootstrapping Output

Table 1
Composite Reliability And Convergent Validity Test Result

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (|O/STERR|)	Information
(X1) Management Control System (MCS) -> (Y) Profitability	0.097876	0.098400	0.010138	0.010138	9.654824	Significant Influence
(X1) Management Control System (MCS) -> (Z1) Effectiveness	0.653921	0.657470	0.012176	0.012176	53.706950	Significant Influence
(X1) Management Control System (MCS) -> (Z2) Efficiency	-0.017173	-0.016800	0.007356	0.007356	2.334463	Significant Influence
(X1) Management Control System (MCS) -> (Z3) Economic Value Added (EVA)	-0.113651	-0.115153	0.013374	0.013374	8.498046	Significant Influence
(X2) Activity Based Management (ABM) -> (Y) Profitability	0.023679	0.022882	0.010296	0.010296	2.299778	Significant Influence
(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	Significant Influence
(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	Significant Influence
(X3) Value Chain -> (Z1) Effectiveness	**-0.021851**	**-0.020266**	**0.013602**	**0.013602**	**1.606420**	**Insignificant Impact**
(X3) Value Chain -> (Z2) Efficiency	0.918470	0.918452	0.002075	0.002075	442.635788	Significant Influence
(X3) Value Chain -> (Z3)	**-0.021124**	**-0.023348**	**0.015840**	**0.015840**	**1.333631**	**Insignificant**

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (|O/STERR|)	Information
Economic Value Added (EVA)						Impact
(Z1) Effectiveness -> (Y) Profitability	-0.077685	-0.079353	0.010508	0.010508	7.393130	Significant Influence
(Z2) Efficiency -> (Y) Profitability	0.634316	0.633240	0.011366	0.011366	55.808247	Significant Influence
(Z3) Economic Value Added (EVA) -> (Y) Profitability	-0.024361	-0.024011	0.011137	0.011137	2.187289	Significant Influence

Path Coefficientshows the level of significance and relationship between research variables. With the following criteria:
a. If the calculated t > t table, which is more than 1.96, then the hypothesis is accepted.
b. If the calculated t < t table, that is, more than 1.96, then the hypothesis is rejected.

Thus the Path Coefficient gives the following results:

A. The Influence of (X1) Management Control System (MCS) on (Y) Profitability

Based on the Path Coefficient table regarding the influenceManagement Control System(MCS)to(Y) Profitabilityis significantly influential with a T-statistic of9.654824> 1.96. The original sample estimate value is0.097876which shows that the direction of the relationship betweenManagement Control System(MCS)to(Y) Profitabilityis in the same direction.

B. The Influence of (X1) Management Control System (MCS) on (Z1) Effectiveness

Based on the Path Coefficient table regarding the influenceManagement Control System(MCS)to(Z1) Effectivenessis significantly influential with a T-statistic of53.706950> 1.96. The original sample estimate value is0.653921which shows that the direction of the relationship betweenManagement Control System(MCS)to(Z1) Effectivenessis in the same direction.

C. The Influence of (X1) Management Control System (MCS) on (Z2) Efficiency

Based on the Path Coefficient table regarding the influenceManagement Control System(MCS)to(Z2) Efficiencyis significantly influential with a T-statistic of2.334463> 1.96. The original sample estimate value is-0.017173which shows that the direction of the relationship betweenManagement Control System(MCS)to(Z2) Efficiencyis in the opposite direction.

D. Influence of (X1) Management Control System (MCS) on (Z3) Economic Value Added (EVA)

Based on the Path Coefficient table regarding the influenceManagement Control System(MCS)to(Z3) Economic Value Added (EVA)is significantly influential with a T-statistic of8.498046> 1.96. The original sample estimate value is-0.113651which shows that the direction of the relationship betweenManagement Control System(MCS)to(Z3) Economic Value Added (EVA)is in the opposite direction.

E. The Influence of (X2) Activity Based Management (ABM) on (Y) Profitability

Based on the Path Coefficient table regarding the influence(X2) Activity Based Management (ABM)to(Y) Profitabilityis significantly influential with a T-statistic of2.299778> 1.96. The original sample estimate value is0.023679which shows that the direction of the relationship between(X2) Activity Based Management (ABM)to(Y) Profitabilityis in the same direction.

F. The Influence of (X2) Activity Based Management (ABM) on (Z1) Effectiveness

Based on the Path Coefficient table regarding the influence(X2) Activity Based Management (ABM) to(Z1) Effectivenessis significantly influential with a T-statistic of4.183623> 1.96. The original sample estimate value is0.061830which shows that the direction of the relationship between(X2) Activity Based Management (ABM)to(Z1) Effectivenessis in the same direction.

G. The Influence of (X2) Activity Based Management (ABM) on (Z2) Efficiency

Based on the Path Coefficient table regarding the influence(X2) Activity Based Management (ABM)to(Z2) Efficiencyis significantly influential with a T-statistic of5.991405> 1.96. The original sample estimate value is0.027605which shows that the direction of the relationship between(X2) Activity Based Management (ABM)to(Z2) Efficiencyis in the same direction

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

Based on the Path Coefficient table regarding the influence(X2) Activity Based Management (ABM)to(Z3) Economic Value Added (EVA)is significantly influential with a T-statistic of28.944243> 1.96. The original sample estimate value is0.523917which shows that the direction of the relationship between(X2) Activity Based Management (ABM)to(Z3) Economic Value Added (EVA)is in the opposite direction.

I. The Influence of (X3) Value Chain on (Y) Profitability

Based on the Path Coefficient table regarding the influence(X3) Value Chainto(Y) Profitabilityis significantly influential with a T-statistic of18.269090> 1.96. The original sample estimate value is0.218901which shows that the direction of the relationship between(X3) Value Chainto(Y) Profitabilityis in the same direction.

J. The Influence of (X3) Value Chain on (Z1) Effectiveness

Based on the Path Coefficient table regarding the influence(X3) Value Chainto(Z1) Effectivenessis not significantly influential with a T-statistic of1.606420> 1.96. The original sample estimate value is-0.021851which shows that the direction of the relationship between(X3) Value Chainto(Z1) Effectivenessis in the opposite direction.

K. The Influence of (X3) Value Chain on (Z2) Efficiency

Based on the Path Coefficient table regarding the influence(X3) Value Chainto(Z2) Efficiencyis significantly influential with a T-statistic of442.635788> 1.96. The original sample estimate value is0.918470which shows that the direction of the relationship between(X3) Value Chainto(Z2) Efficiencyis in the same direction.

L. The Influence of (X3) Value Chain on (Z3) Economic Value Added (EVA)

Based on the Path Coefficient table regarding the influence(X3) Value Chain Management (ABM)to(Z3) Economic Value Added (EVA)is not significantly influential with a T-statistic of1.333631> 1.96. The original sample estimate value is-0.021124which shows that the direction of the relationship between(X3) Value Chainto(Z3) Economic Value Added (EVA)is in the opposite direction.

M. The Influence of (Z1) Effectiveness on (Y) Profitability

Based on the Path Coefficient table regarding the influence(Z1) Effectivenessto(Y) Profitabilityis significantly influential with a T-statistic of7.393130> 1.96. The original sample

estimate value is-0.077685which shows that the direction of the relationship between(Z1) Effectivenessto(Y) Profitabilityis in the opposite direction.

N. The Influence of (Z2) Efficiency on (Y) Profitability

Based on the Path Coefficient table regarding the influence(Z2) Efficiencyto(Y) Profitabilityis significantly influential with a T-statistic of55.808247> 1.96. The original sample estimate value is0.634316which shows that the direction of the relationship between(Z2) Efficiencyto(Y) Profitabilityis in the same direction.

O. The Influence of (Z3) Economic Value Added (EVA) on (Y) Profitability

Based on the Path Coefficient table regarding the influence(Z3) Economic Value Added (EVA) to(Y) Profitabilityis significantly influential with a T-statistic of2.187289> 1.96. The original sample estimate value is-0.024361which shows that the direction of the relationship between(Z3) Economic Value Added (EVA) to(Y) Profitabilityis in the opposite direction.

Conclusion

Risk credit and effectiveness influential in a way significant to performance company . Risk ethnic group interest Based on the results of the analysis and hypothesis testing that have been carried out previously, the research results conclude the following: (1) Management Control System (MCS) has a significant effect on Effectiveness in Construction Services Companies in East Java Province, (2) Management Control System (MCS) has a significant effect on Efficiency in Construction Services 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 Profitability in Construction Services in East Java Province, (5) Activity Based Management (ABM) has a significant effect on Effectiveness in Construction Services Companies in East Java Province, (6) Activity Based Management (ABM) has an effect on Efficiency in 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) has a significant effect on Profitability in Construction Services Companies in East Java Province, (9) Value Chain has no significant effect on Effectiveness in Construction Services Companies in East Java Province, (10) Value Chain has a significant effect on Efficiency in Construction Services Companies in East Java Province, (11) Value Chain has an effect is not significant to Economic Value Added (EVA) in Construction Services Companies in East Java Province, (12) Value Chain has a significant effect on Profitability in Construction Services 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 Services Companies in East Java Province.

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