

The Moderating Effect of Management Control Systems on the Strategy-Performance Relationship in Indonesian Construction Companies

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Abstract

This study is aimed to explore the effect of Management Control System (MCS) on the relationship between business strategy and construction company performance. Most of prior studies on business strategy and management control system interaction have been done using non-construction companies. This study uses seventy three (73) construction companies in Padang city (Indonesia). The data is gathered through survey using questionnaire. Moderated Regression Analysis (MRA) is employed using SPSS software. Furthermore, this paper finds that when management control system include in the model, there is an increasing in model feasibility and power. However, management control system does not play as moderating variable between business strategy and construction company performance. This finding is inconsistent to prior studies concluding that management control system strengthens the relationship between strategy and performance.

Keywords: Business Strategy; Management Control System; Performance.

1. Introduction

Indonesia is categorized as emerging and growing economy. Refers to the MP3EI (master plan for Indonesia's economic acceleration and growth), Indonesia has to have the better infrastructure, such as building, road, bridges and so on. Besides, Indonesia's personal income has been rising and therefore, it is driving demand for residential and commercial property. Further, these factors put the country squarely on the radar of the global construction industry. Indonesia is one of the most important construction markets in the world due to weak growing of construction industry in developed countries [7]. Construction spending growth in Indonesia will remain among the strongest in the region. According to Asia Construction Outlook 2014 inform that Indonesia is the top country in terms of potential construction spending growth in the medium term[9]. Due to high levels of capital investment, the construction industry handily outpaced Indonesia's overall economic growth over the past decade and has become an increasingly significant contributor to the country's Gross Domestic Products (GDP). The industry was growing from 125.3 trillion RP in 2003 to 907.3 trillion RP in 2013, the industry accounts for roughly 10% of GDP [9]. The positive trend is bound to continue amid rising demand for housing and ambitious plans for public infrastructure. Indonesia is one of the countries which have many islands. It is around more than 14,000 islands. In addition, Indonesia has 35 provinces, including Padang (West Sumatra). Since the earthquake had happened on September 2009, the infrastructure and houses in this province had collapsed. Therefore, the government remind the construction related parties, such as property, real estate and construction companies, to strenghten their role in order to have higher quality infrastructure. Table 1 show the growth of the construction industry versus GDP growth from 2009 to 2013.

Table 1: Construction Industry vs GDP growth

Growth	2009	2010	2011	2012	2013
Construction	7.1%	7.0%	6.1%	7.4%	6.6%
GDP	4.6%	6.2%	6.5%	6.3%	5.8%

Source: GBG (2015)

The important of the construction industry has been debated by many experts. Reference to [21] argues that the construction industry plays an important role in enhancing the economic performance and the national welfare of a country by transforming various resources to construct economic and social facilities. According to [6], the construction industry provides critical backward and forward linkages to support the development of other economic sectors. In a free market economy the importance of small companies as major job suppliers, innovators and source of growth is widely recognized [32]. The entire construction industry has for long experienced adversarial working relationships, conflicts, disputes and poor collaboration among others between various stakeholders such as the client and the main contractor, consultants and contractors or suppliers and subcontractors ([8]; [4]; and [2]). Reference [1] notes that construction companies have been pressured due to the increasing complexities of buildings, the need to reduce designs and construction periods, and the need to improve project performance. Similarly, [22] observed that construction projects have become dynamic in nature due to its increasing complexity and uncertainty; and the need to embrace change in order to achieve truly outstanding project outcomes of reducing project costs and design/construction time while still maintaining high quality final products.

Study on construction company performance from control perspective is still limited. Reference [43] investigates the construction project performance by using time performance as proxy. They documented several factors contributing to the time construction performance, such as financial related factors. Reference [24] examines the effect of the contractor management capability on performance of construction project in Nigeria. They find that contractors' management capabilities have significantly impact on the cost and time performance of building project. Contractors' management capabilities are classified into management knowledge, quality control, and quality assurance. Reference [18] investigates whether five strategy attributes can assist the construction company to grow and maintain its performance. The result shows that Porters' generic competitive strategies significantly effect on financial performance, unless focus strategy. Even though, studies of [24] apply the control concept but they do not focus on the MCS. Reference [31] defines MCS as the processes by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of organization objective. In addition, MCS can be viewed as a means to successfully implement strategies. Further, [36] defines that MCS as formal information based routines and procedures managers use to maintain or alter patterns in organizational activities. From the contingency theory, strategy and control are factor affecting the performance of company. In addition, study on relationship between strategy and performance of Construction Company is also very limited. Moreover, the investigation of interaction between strategy and management control system that influence the performance of Construction Company is also sparse. Therefore, this study aims to investigate the effect of Management Control System (MCS) on the relationship between business strategy and company performance.

The remainder of the current research is structured as follows. The second part discusses theoretical aspects and hypotheses development. The third section presents research design and method. The result and discussion of the paper is classified in the fourth part. The final section presents conclusion and recommendation of the study.

2. Theoretical Background and Hypotheses Development

2.1. Company performance

Company performance is one of the most important constructs in accounting and management research. Reference [17] argues that performance can be classified into three dimensions: theoretical, empirical, and managerial. Reference [19] states that performance can be divided into several categories: ultimate goal of management, measurement perspective, and question of scope. According to [25], company performance is the most important criterion in evaluating organizations, their actions, and environments. They suggest that the narrower domain of company performance encompasses three specific areas of company's outcomes: (1) financial performance (e.g. profits, return on assets, return on investment); (2) market performance (e.g. sales, market share); and (3) shareholder return (e.g. total shareholder return, economic value added). The broader view of organizational performance is reflected in, for example, the Balanced Scorecard (BSC) framework [34]. In strategy studies, performance is typically dealing with as aggregate firm level outcome, that is, a dependent variable [25], with strategy acting as an independent variable.

2.2. Business strategy

The field of strategic management is a branch of microeconomics which is recognized as industrial organization (IO) [5]. Reference [15] states that strategy as goals, policies, and actions that streams into unified. Reference [12] argues that corporate level strategy is a broad direction of company-growth, stability, or retrenchment and how a business unit contends in an industry is called as business strategy. A number of business strategy typology has been developed by many experts, such as [28], [16], [20] and [29]. Reference [28] recognizes three type of strategy-building, holding and harvesting. Whereas, [16] spot three strategies which are including performance maximizing, sales maximize and cost minimizing. In addition, prospectors, defenders, analyzers, and reactors are types of strategy according to the [29]. Furthermore, [20] introduces the low cost, differentiation and focus strategy that can be used by a business unit to pursue superior performance. Within the construction management field, strategic management is a vast and well researched area if endeavor over the last few decades [18]. Management theory has preserved that strategy implementation need proper designed management control system ([40] and [35]).

There are three basic business strategies, namely: differentiation, cost leadership and focus [10]. Thus, the framework of [10] is used in this study. Differentiation strategy is a type of business strategy which concentrates its attempts on serving a unique product and service. Differentiation in term of product could fulfil a customer need and involves tailoring product or service to customers. Therefore, company can charge the customer with premium price by implementing this kind of strategy. The differentiation could implement across value chains of company. Unlike differentiation business strategy, cost leadership strategy focuses on lowest cost to gain the competitive advantage. Therefore, company implementing this strategy has to design, produce and operationalize with low cost. Lower costs and cost advantages yield from the process innovations, learning curve benefit, economic of scale, product design, manufacturing speed and reengineering activities [26].

2.3. Management control system

Management control system has been defined by many experts, such as [31] and [36]. Management control system is a process by which managers ascertain that resources are acquired and utilized effectively and efficiently in order to achieve the company performance. Further, [36] defines MCS as the formal information based routines and procedures that managers use to maintain pattern in organizational activities. Relate to strategy implementation, [36] argues that MCS can help organization to execute the strategy successfully. Reference [30] classifies the MCS into mechanistic and organic control. He argues that mechanistic control rely on the formal rule, standardized operating procedures and routine. Opposed to mechanistic control, organic controls are more flexible, responsive, involve few rules and standardized procedures, and tend to be richer in data. Reference [35] categorizes the MCS formal into belief, boundaries, feedback and

measurement system. Belief and boundaries systems used to frame the strategic domain, whereas feedback and measurement system used to elaborate and conduct strategy [14]. Further, [14] add that to implement strategies, diagnostic control system used to monitor and reward achievement of predetermined goals through the review of critical performance variables or key success factors. In addition, they add that an interactive control system used to expand opportunity-seeking and learning.

As mention above, the aim of this study is to investigate the effect of MCS on the relationship between business strategy and performance. Therefore, this study apply MCS framework identified by [36]. However, it is only focusing on the interactive and diagnostic control systems. Interactive and diagnostic control systems are taken due to this control approaches could be used to control the strategy implementation. It also provides the discussion if any deviation from the target. Under diagnostic approach, a significant level of authority to subordinate is delegated by top management. Reference [36] argues that top management involve in the process of decision making activities if any deviations. This type of control needs data and information which are supplied through formal reporting procedure. Contradict to the interactive control system, diagnostic use of controls could rend a risk of dysfunctional behavior from employee who might respond in appropriately [36]. However, the interactive use of control promotes a dialog and debate across various levels. Therefore, it simultaneously simplifies an organizational learning and innovation [36]. The previous research that investigates the effect of management control system on the relationship between business strategy and performance are still limited (e.g. [23]; [11]; and [41]). Reference [23] concludes that moderating effect of management control system (diagnostic use of MCS) is more significant if the cost leadership strategy is implemented by companies. Further, [11] investigates the effect of misfits between business strategy and management control system on bank performance. They conclude that strategy-control system misfit has a significantly negative on performance. The study on how the alignment of HRM control and business strategy affects firm performance such as [41]. He uses computer and peripheral equipment industries. He concludes that alignment of HRM control and business strategy could be augmented or dismissed. Based on theory and previous studies, this paper constructs the hypothesis as follow.

H1: Management Control System (MCS) moderated relationship between business strategy and company performances

2.4. Research framework

The effect of business strategy has been evidenced by previous researchers in the field of strategic management of [12]. Strategy inputs could derive from Industrial Organization (IO) model [5] which is well-known as SCP (Structured Conduct Performance). As can be seen below, the framework is used in this study as a basis of external business environment which could be categorized as opportunity and threats. Besides, the Resources Based View (RBV) is also used to generate a strategy [13]. Resources Based view constructs a framework, which called as VRIO (Value, Rare, non-Imitate and Organized). Resources that contribute to a competitive advantage are VRIO. Further, MCS is a valuable system to monitor the strategy implementation. Therefore, the interaction between business strategy and management control system would give to a higher company performance. This contention is also supported by contingency theory [29] which prevalent in the management control system studies and strategic advances management accounting. Based on the discussion above, the research framework of this research can be seen below.

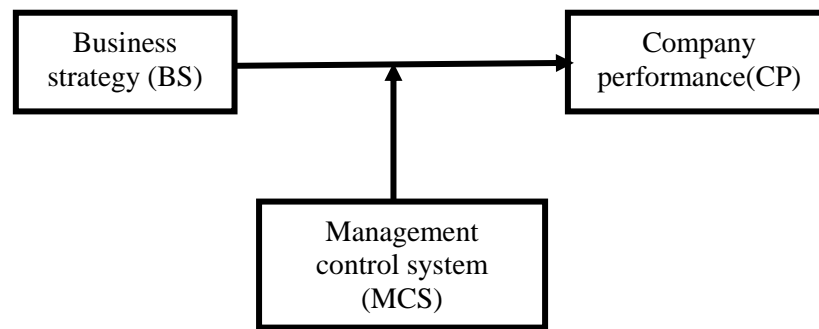


Figure 1: Research model

3. Research Design and Method

The sample of construction companies was drawn from population of 934 companies listed in construction companies association of Padang city. Using the Slovin's formula with error of 10%, 90 questionnaires were distributed to construction companies. We received surveys from 73 companies, for a response rate of 81 %. Company Board of director respondents represent wide range managerial functions, with more than half reporting involvement in accounting and finance as well as administration. This study uses measurement of construction company performance (18 items) developed by [40] and [42] and is also used by [23]. Business strategy construct were extracted from strategic management literature which initially were developed by [10], [37], and [27]. In this research, it uses two business strategies (e.g. cost leadership and differentiation). Further, MCS uses two indicators (diagnostic and interactive use of MCS) were developed by [3]. Since this study investigate the effect of MCS in the relationship between strategy and performance, the moderated regression analysis is applied. However, we also test for validity and reliability of data and variables. In addition, model must be free from classical assumptions before the data is regressed for hypothesis testing. Model specification demonstrates below.

$$\text{Model I} \quad : \quad CP = \beta_0 + \beta_1 BS + e \quad (1)$$

$$\text{Model II} \quad : \quad CP = \beta_0 + \beta_1 BS + \beta_2 MCS + e \quad (2)$$

$$\text{Model III} \quad : \quad CP = \beta_0 + \beta_1 BS + \beta_2 MCS + \beta_3 BS \times MCS + e \quad (3)$$

where,

- CP = Company performance
- BS = Business strategy
- MCS = Management control system
- β_0 = Constant
- β_1 = Coefficient BS
- β_2 = Coefficient MCS
- β_3 = Coefficient BS \times MCS
- e = Term Error

4. Result and Discussion

The survey instrument was administered to President Directors of construction companies operating in Padang city, west Sumatra (Indonesia). A total of 73 responses were received, representing the management level. There were 55 men (75.34%) and the rest are women (24.66%). The average age of respondents is 46 years old and representing the construction company with average age of 24 years. Considering that the constructs in this study are latent construct, we evaluated the validity of items and reliability of construct. Bivariate person

correlation is used to assure that items are valid. Meanwhile, Cronbach alpha is applied to assess the reliability test. The result of validity test is displayed in Table 4.1. For variable of company performance, there are 10 items valid out of 18. Further, MCS and BS variables are 7 and 13 items valid respectively. Another instrument test is reliability test. In this study, Cronbach alpha is used to test whether the variables are reliable or not. The result of reliability test is demonstrated in Table 1 below. The result of reliability test shows that all variables are reliable. The value of Cronbach alpha is above the cut off value (0.5).

Table 1: Result of validity and reliability test

No	Variable	Items	Valid Item	No of Valid items	Cronbach Alpha	Result
1.	CP	18	2,4,5,6,10,12,14,16,17,&18	10	0,830	Reliable
2.	MCS	14	1,2,5,6,7,8,& 12	7	0,595	Reliable
3.	BS	18	1,4,7,8,9,10,11,12,13,15,16,17, &18	13	0,775	Reliable

Descriptive statistic for all variables is shown in Table 2. Minimal value of company performance variable is 47 with maximal value of 64. In addition, means value of company performance 57.11 with the standard deviation 4.88. The detail of minimal, maximal means and standard deviation of management control system and business strategy variable could be seen in Table 2.

Table 2: Descriptive statistics

No.	Variable	Min	Max	Means	SD
1.	CP	47	64	57,11	4,88
2	MCS	42	55	49,75	3,13
3	BS	51	78	62,55	6,43

The purpose of the current research is to investigate the effect of the management control system on the relationship between business strategy and performance. The moderated regression analysis is used to answer the research question. However, the classical assumption has already been satisfied: Normality, multicollinearity and heteroscedasticity [39]. Normality test apply the univariate normality test using the skewness and kurtosis. The result shows that the skewness and kurtosis for all variables of the study is around ± 2 . Test for multicollinearity is employed. The result shows that model has low VIF (less than 10) for both independent variables. Therefore, we can conclude that there is no correlation among independent variables. Heteroscedasticity test apply the Glejser test and the result reveals that there is no heteroscedasticity problem. Having been free from the classical assumption, the study proceeds to the moderated regression analysis (MRA). There are three model in MRA technic: first model just include the independent variable (in this case: business strategy) in the model; second model add the moderating variable (in this case: MCS) into model; and the third model add the interaction variable into model.

Table 3: Result of Moderated Regression Analysis

Dependent Variable	Independent and Moderating Variable	Model 1		Model 2		Model 3	
		Coe. Regression	P value	Coe. Regression	P value	Coe. Regression	P value
CP	Constanta	44,245	0,00	37,194	0,000	-37,680	0,750
	Business Strategy (BS)	-0,175	0,106	-0,168	0,119	1,324	0,574
	Management Control System (MCS)			0,271	0,240	3,217	0,489

	Business Strategy (BS) x Management control system (MCS)					-0,059	0,526
	F Statistic	2,680	10,6	2,051	13,6	1,491	22,5
	R ²	3,6%		5,5%		6,1%	
	R ² change			1,9%		0,6%	

Table 3 above shows the result of this study. The F statistic for all models is 2.86, 2.051, and 1.491 respectively. Further, R square is 3.6 %, 5.5%, and 6.1% respectively. In addition, R square change from model 2 to model 3 is 1.9% and 0.6% respectively. From this result, it can be concluded that only first model is almost fit at 10%. However, the rest is not feasible. Even though, R square improves from model 1 to model 2 and 3, the value is not large. Therefore, it can be summarized that there is no effect interaction between business strategy and management control system simultaneously. In line with fitness of model, management control system does not play as moderating variable between business strategy and performance due to insignificant value of coefficient of this interaction. There are possible explanations for the result of this paper. First, construction companies operating in local area in Indonesia very much rely on the government project, especially in Padang (West Sumatra). Therefore, there is a little need for implementing the management concept when dealing with the government project. Thus, the concept of strategic management and management control system is less applied in this context. Second, most of Construction Company's manpower does not encourage having the knowledge of strategic management, management control system and performance management. Further, they can implement those concepts while working in the construction companies. Finally, there is weak relationship between construction industry and higher education institutions (HEI) in Indonesia. Therefore, it is difficult for construction companies to be transferred the new knowledge and technology from HEI.

These findings are not consistent with previous research done by [23], [11], and [41]. Reference [23] finds that companies that implemented cost leadership strategy is more significant moderated by diagnostic use of management control system. Cost leadership strategy is a business strategy that focuses on the cost: production, operation, and financing cost. Thus, diagnostic use of management control system use management control tools, such as variance analysis, to confirm the budgeting aligning with the realization. This result also contradicts to [11]. They investigate effect of misfit between strategy and management control system and conclude that there is a negative significantly relationship between misfit business strategy and management control system on the bank performance. This result also differs from [41] who investigate the effect the HRM control and business strategy on the organization performance. In brief, this finding does not support the contingency theory that contending that organization performance could be explained by strategy and MCS should affect the organization performance.

5. Conclusion and Recommendation

The construction companies play an important role to render the infrastructure in a country. Companies with management capabilities and knowledge is perceived being able to produce the high quality infrastructure. Therefore, design of strategy and control is very important for construction companies. Studies about the effect of management controls system on the relationship between business strategy and performance are very limited in the context of construction companies in Indonesia. Therefore, this study investigate the role of management control system as moderating variable between business strategy and performance of construction companies in Padang, Indonesia. The result shows that there is no role of management control system as moderating variable between business strategy and performance. This finding is rather disappointing due to less used of strategic management and management control concept. In

addition, some of the issues emerging from this finding relate specifically to construction project type run by local construction companies mostly belong to government. Future studies on the current topic are therefore recommended. First, it is desire need to investigate qualitatively why local construction companies are not aware of availability of sophisticated management concept and implementing these relevant concepts. Second, the quantitative approach however also could be done by testing more detail concept of business strategy and management control system. Finally, future research also can proceed by changing the research object to another industry, such as service industry.

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