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## Moderating Effect of Usefulness Management Accounting System on the Relationship between Innovation and Firm Performance: Evidence from Bandung District, West Java, Indonesia

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Abstract: The aim of this study is to investigate the effect of usefulness management accounting systems on the relationship between innovation and firm performance. In this study, data of 7 Stated-Owned Enterprise Bandung District, that is introduce and proportional sampling of 64 as user on June, 2017. The method of this research is time order decision by Johnson and Onwugbuzie's. This approach is selected considering during the data are collected through interviewing related respondents to re-confirmation the data from questionnaires. Management accounting system and innovation has been considered as an important determinant of firm performance, because that are has been conceptualized in different ways and due to fierce competition in the marketplace, globalization and an explosion of technology in recent year. According Contingency Theory to research findings; positively Pearson correlation among usefulness of management accounting systems, innovation and firm performance, the result indicate that a significant effect usefulness of management accounting systems and innovation on the firm performance, and surprising, significant moderate effect usefulness of management accounting systems on the relationship between innovation and firm performance. Based on interview conducting to random and selected of 14 respondents, indicate that State-Owned Enterprise Bandung District less-sufficient creativeness adopted of innovation in the business process. Then, implication of finding research not only might increase firm performance and linkage between financial and non-financial measures as affecting by implementation of strategic advantages through dimensions of innovations space, its more.

*Keywords:* Usefulness of Management Accounting System, Innovation, Firm Performance and State-Owned Enterprise Bandung District.

### INTRODUCTION

Tracing from previous research as of Saeidi et al (2013), Valeira et al (2015), and Ghasemi et al (2015) justify show that moderating of management accounting system on the relation between innovation change on

firm performance. Saeidi et al (2013) has a literature research and concluded that is in order. Then Valeira et al (2015), and Ghasemi et al (2015) has an empirical research and the data obtained from manufacturing firm and agri-food technology, respectively. In this study was conducted from state-owned business Bandung district office, we think this studied will difference from previous research, because the data obtained from the business activities has been intervention by government and any regulation platform. The research question will be central is how about this firm to be operate and type of 4Ps innovation space designing in organizational day to day. What is the company to implemented of innovation dimension and usefulness of management accounting systems of information characteristics in the business process in the small and medium size enterprise? We know any business not only private sectors, so that would be earn profit and public services for stakeholders in order. Any enterprise must be needed innovations type and MAS information dimension for supporting business process.

This studied consist of four sections. The studies measuring the effect of usefulness management accounting and innovation on firm performance have been summarized in the second section following next section. Third section is research methodology of introduction of dependent and independent operationalization of variables in this study. Forth section is research resulting research, and discussion and conclusion of finding research is the end section.

#### LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### **Innovation space**

Innovation is driven by the ability to see connections, to spot opportunities and to take advantage of them (Tidd and Bessant, 2013). But innovation is not just about opening up new market-it can also offer new ways of serving established and mature ones. Tidd and bessant (2013) said; innovation is of course not confined to manufactured products, innovation can also take place by repositioning the perception of an established product or process in a particular user context, what these organizations have in common is that their success derives in large measure from innovation, according to statistics Canada (2006), the following factors characterize successful small and medium-sized enterprises (a) innovation is consistently foo be the most important characteristic associated with success, (b) innovative enterprise typically achieve stronger growth or are more successful than those that do not innovate, and (c) Enterprises that gain market share and increasing profitability are those that are innovative.

Essentially talking about change, and this can take several forms, for the purpose of this focus on four broad dimensions of innovation categories (Tidd and Bessant, 2013) they are; (1) Product innovation: changes in the things (product/services) which an organization offers, (2) Process innovation: changes in the way in which they are created and delivered, (3) Position innovation: changes in the context in which the product/services are introduced, and (4) Paradigm innovation: changes in the underlying mental models which frame what the organization does.

Innovation is widely regarded as a critical source of competitive advantages in an increasingly changing environment (Dess and Picken, 2000; Tushman and O'Reilly, 1996). Not only for profit firm adopted of innovation. Tidd and Bessant (2013) has been considered of innovation can also for not-for-profit. The distinction between commercial and not-for profit organizations may also blur when considering innovation. Whilst private sector firms may compete for the attention of their market through offering new things or

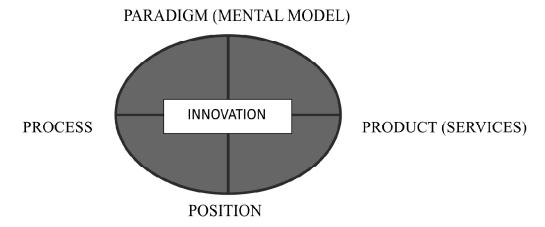


Figure 1: The 4Ps of innovation space

Source: Tidd and Bessant (2013:25)

new ways of delivering them, public sector and non-profit organizations use innovation to help them compete against the challenges of delivering healthcare, education, law and order, and so on. In this study useful of types innovations of 4Ps of innovation space (Tidd and Bessant, 2013).

### Management accounting systems

Management accounting information system has been many way conceptualized recent year (Horngren, et al., 2015; Hilton and Platt, 2011). Management accounting (managerial accounting) applies to all types of business-services, merchandising, and manufacturing-and to all forms of business organizations-proprietorships, partnership, and corporation; moreover, management accounting is needed I not-for-profit entities as well as in profit-oriented enterprises (Weygandt, et al., (1999). For example, management accounting systems is the process of measuring, analyzing, and reporting financial and nonfinancial information that helps managers make decisions to fulfill the goals of an organization (Horngren, et al., 2015). And management accounting information and report do not have to follow set principles or rules. Managers use management accounting information to: (a) develop, communicate, and implement strategies, and (b) coordinate product design, production, and marketing decisions and evaluate a company performance. Hilton and Platt (2011) said, management accounting systems is add-value to an organization by pursuing five major objectives:

- 1. Providing information for decision making and planning, and proactively participating as part of the management team in the decision-making and planning processes.
- 2. Assisting managers in directing and controlling domestic and international operational activities.
- 3. Motivating managers and other employees toward the organization's goals.
- 4. Measuring the performance of activities, subunits, managers, other employees within the organizations.
- 5. Assessing the organization's competitive position, and working with other managers to ensure the organization's long-run competitiveness in nits industry.

Based on an empirical research has been useful in term of management accounting information systems (MAIS) and/or of the literature that study call of four MAS dimensions, for examples that are Chenhall and Morris (1986), Chia (1991), Gul and Chia (1994), Agbejule (2005), and Soobaroyen and Poorundersing (2008). There for, in this study was used of MAS information characteristics developed by Chenhall and Morris (1986).

### Firm performance

Performance and firm performance has been interpretation is its all indicators measured (Robbins and Coulter, 2009; Wheelen, et al., 2015). That is in term of performance is what results from that activity and/or the end result of activity, and firm (organizational) performance-the accumulated results of all the work activities in the organization. It's a multifaceted concept, but managers need to understand the factors that contribute to organizational performance and managers too in all types of business are responsible for managing firm performance, that is organizational productivity and effectiveness, and all managers need appropriate tools for monitoring and measuring firm performance. Select measures to assess performance based on the organizational unit to be appraised and the objectives to be achieved. Wheelen, et al (2015) said, rather than evaluate a corporation using a few financial measures, Kaplan and Norton argue for a "balance scorecard" that includes nonfinancial as well as financial measures, this approach is especially useful given that research indicates that non-financial assets explain 50% to 80% of a firm's value. So that measuring of firm performance can be classified into financial and non-financial indicators. In this study useful of non-financial indicators and that is many researcher recent year was used, especially, the measurement of performance use the personnal performance evaluation measure developed by Mahoney, et al (1963).

# Relationship among of usefulness management accounting systems, innovation and firm performance

That is the correlations has been many ways of text books was interpretations is correlated (Tidd and Bessant, 2013; Robbins and Coulter, 2009; Wheelen, et al., 2015; and Horngren, et al., 2015). That this is to be done in the field research and test to prove the statement. For examples, the relationship between management accounting systems and firm performance (Chenhall and Morris, 1986; Chia, 1991, Gul and Chia, 1994; Agbejule, 2005; and Soobaroyen and Poorundersing, 2008).

Based on an empirical research, management accounting systems information characteristics has influence on firm performance, because, management accounting is provider of information to fulfill manager to make decision making and management accounting is can be to make it adding stakeholders value. Management accounting information system can helps manager to managing of operation and that activities as well as for planning, control and performance evaluation activity day to day. Management accounting systems is the process of measuring, analyzing, and reporting financial and nonfinancial information that helps managers make decisions to fulfill the goals of an organization. Managers use management accounting information to: (a) develop, communicate, and implement strategies, and (b) coordinate product design, production, and marketing decisions and evaluate a company performance and management accounting systems is add-value to an organization, so the end achievement of result and performance (Horngren, *et al.*, 2015; Hilton and Platt, 2011; Brewer, 2008; Chenhall and Morris, 1986; Soobaroyen and Poorundersing, 2008).

The next variable of the relationship between innovation and firm performance (Kalkan, et al., 2014; Mazur and Zaborek, 2016; Ahn, et al., 2015; Zafar, et al., 2016; and Uzkurt, et al., 2015). Based on the text book very clear writing and interpretation how to correlate between innovations and firm performance (Tidd and bessant, 2013 and Kemp, et al., 2003). Finding from research has been too presentation and test of the study, positively relationship between innovations and firm performance (Atalay, et al, 2013; Kalkan, et al, 2014; Ting, et al, 2012; Mazur and Zaborek, 2016. Tidd and Bessant (2013) types of innovation are product, process, position and paradigm innovation, if type of innovation was adopted and control in the organizational activity so that can be to achieved of the results from activities.

# Moderating effect of usefulness management accounting systems on the relationship between innovation and firm performance

Based on text books of management accounting has been presentation on the edition is usefulness of management accounting systems by the context of the environmental change and perceived of managers using for the supporting of the information for decision making (Horngren, et al., 2015; Hilton and Platt, 2011; Brewer, 2008; Belkaoui, 2008). In this predictions, who are test by an empirical researchers (Chenhall and Morris, 1986; Chia, 1991, Gul and Chia, 1994; Agbejule, 2005; and Soobaroyen and Poorundersing, 2008). This findings was relevance on the contingency theory of management accounting (Hayes, 1977; Otley, 1980; Fisher, 1998; Soobaroyen and Poorundersing, 2008; and Thomas, 2016). If the context is good of fitness might increasing firm performance (Gordon and Narayanan, 1984; Chenhall and Morris, 1986; Agbejule, 2005; and Soobaroyen and Poorundersing, 2008). Refer on the previous research has been result contribution that is compliance to contingency factors are internal, interdependence and environmental factor included implementation of the innovations in these ways.

By the ways, can be conclude and relevant on the contingency theory of management accounting show that would be moderating effect of usefulness management accounting systems on the relationship between innovation and firm performance (Valeiras, et al., 2015, Saeidi, et al., 2013; and Ghasemi, et al., 2015). Management accounting systems will be change if the innovation in the organization change for prediction environmental uncertainty and the end that is for enhance firm performance (Valeiras, et al., 2015; and Soobaroyen and Poorundersing, 2008). Role of strategic management accounting system on the strategy change would be goodness of fit model to enhance of performance, then strategic choice and structuring of innovation for firm dynamism with in organizational change in term of usefulness of management accounting systems will be might increase firm performance (Chenhall and Langfield-Smith, 1998; Ismail and Isa, 2011; Norouzi, et al., 2015; and Hoque, Z. 2011). Any managers must be needed of create of innovations stile and MAS change for support decision making with in operate business to enhance added value stakeholder and firm performance. In this rationality depend on how manager manipulate of innovation space and MAS change.

### **Hypotheses Development**

Refer to the text books of management accounting area, previous research findings and research questions has been considered in order construction and hypotheses development in this study can be formulate are given below:

H1= There is a positive and significant relationship between innovation and firm performance

H2= There is a positive and significant relationship between usefulness of management accounting systems and firm performance

H3= There is a positive and significant moderating effect of usefulness management accounting systems on the relationship between innovation and firm performance

### RESEARCH METHODOLOGY

Respondents in this research include the public who receives public services in seven State-Owned District Bandung. Questionnaires specifically designed using 5-Likert scale (Sekaran and Bougie, 2010) handed-out on June, 2017. Respondents are randomly selected in each office of 64 respondents. The method of this research is time order decision by Johnson and Onwugbuzie's (2004). This approach is selected considering during the data are collected through interviewing related respondents to re-confirmation the data from questionnaires. The following is the method:

		Concurrent	
Paradigm Emphasis Decision	Dominant Status	QUAN + qual	

The data was analyzed using moderate regression analysis (Cooper and Schindler, 2006; Hair, et. al., 2005; Sekaran and Bougie, 2010). Moderate regression was used in this study to investigate the effect of usefulness management accounting systems on the relationship between innovation and firm performance. The operationalized of research variables includes several indicators. In this research variables include are innovation, usefulness of management accounting systems and firm performance. Innovation consist of product, process, position and paradigm dimension of innovation space (Tidd and Bessant, 2013), management accounting systems has been many researchers and adopted in which developed by Chenhall and Morris (1986) indicators consist of broad-scopes, timeliness, integrations and aggregation dimensions, and firm performance adopted by Mahoney, et. al. (1963), has been tested for validity and reliability by Soobaroyen and Poorundersing (2008).

To test the hypotheses, we use the moderating regression analysis (MRA) with the following regression equation are follow:

$$FPerfm = C + b1INNO + b2MAS + e1$$
 (1)

$$FPerfm = C + b1INNO + b2MAS + b3INNO.MAS + e2$$
 (2)

In which of

FPerfm: is firm performance

INNO : is innovations

MAS : is management accounting systems

C : is constanta

b : is amount % effect of IDV to DV
e : is an error-term of equation model

#### RESULTS

### **Descriptive Analysis**

The first descriptive statistic test was conducted in order to obtain information about Stated-Owned Bandung District of the mean and standard deviation for confirmation the data with in indicators on each research variable are given in table 1.

Table 1
Descriptive Statistics

Variables	Min	Max	Mean	Std. Dev	N
Firm Performance	3,156	3,469	3,307	1,489	64
Innovations	3,000	3,492	3,238	1,533	64
Management Accounting Systems	3,109	3,281	3,182	1,422	64

In this study was applied test of validity and reliability and result are valid and reliable of the indicators has been considered based on criteria in order by Nunnaly (1978), and Kaiser and Rice (1974). The data was compliance with the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) of 0,614 and Bartletl's Test of Sphericity of 182,860. The value and degree information of the variable inter-correlation from the test indicate that all variables are correlated and significant, exclude of the variable interaction are given in table 2.

Table 2
Pearson Correlation Among Variables

Variables	Y	X1	X2	<i>X3</i>	C. Alpha	Factoring	N Item
Firm Performance-Y	1				,861	,660	6
Innovation-X1	,669***	1			,877	,869	6
MAS-X2	,795***	,923***	1		,916	,909	6
Interaction INNOxMAS-X3	,028	,203*	,206*	1	-	-	12

Note: \*\*\*, \*\*, \* level of statistical significance is equal to 1%, 5% and 10%, respectively

### **Moderating Regression Analysis**

Based on result from moderate regression analysis (MRA) was conducted in term are given in table 3. The findings of the hierarchical regression analysis testing the effects of innovation types (product innovation, process innovation, position innovation and paradigm innovation) on the firm performance is indicated that negatively and significant before and after moderating effect. Usefulness of management accounting systems on the firm performance is indicated positively effect and significant, before and after moderating effect. Then, the moderating effect of usefulness management accounting systems on the relationship between innovation and firm performance is indicated that negatively and significant. In this result not surprising, because the findings of correlation among the variable of innovation, usefulness of management accounting systems and firm performance is positively and significant.

Table 3
The findings of the hierarchical regression analysis

Dependent variable: Firm performance						
Independent variable	Unstandardized b	eta coefficients				
	Model 1	Model 2				
Innovations	-0,428**	-0,415**				
Management accounting systems	1,256***	1,275***				
Interaction INNOxMAS		-0,002*				
R Square	0,660***	0,660*				
Adjusted R Square	0,649***	0,649*				
R Square Change	0,660***	0,660*				
F Change	59,281***	3,328*				
Sig F Test	59,281***	42,138***				

Note: \*\*\*, \*\*, \* level of statistical significance is equal to 1%, 5% and 10%, respectively

Based on table 3, in this study can be present of the regression analysis model of investigate the effect of innovation and usefulness of management accounting systems on firm performance before and after moderating effect construction of equation model, as results study are given below:

FPerf = 
$$4,717 - 0,426$$
 INNO +  $1,256$  MAS +  $e1$   
FPerf =  $4,667 - 0,415$  INNO +  $1,275$  MAS +  $-0,002$  INNOxMAS +  $e2$ 

### **DISCUSSION AND CONCLUSION**

The correlation among innovation space, usefulness of management accounting systems dimension, interaction between innovation-management accounting systems, and firm performance show that positively and significant. That mean if innovation type change will be relevant with in MAS change to be contingency factor of organizational dynamism of business process and the end would be enhancing of organizational effectiveness (Atalay, et al, 2013; Kalkan, et al, 2014; Ting, et al, 2012; Mazur and Zaborek, 2016; Agbejule, 2005; and Soobaroyen and Poorundersing, 2008). There for we concluded H1 and H2 would be accepted and support previous research.

How about the result test regression moderating analysis of management accounting systems will be change depend on relationship between implementation of innovation type and firm performance. These finding is negatively and significant the moderating MAS dimension on relationship between innovation space and firm performance. This result is need not expectation. Because, if goodness fit will be positively and significant findings (Valeiras, *et al.*, 2015, Saeidi, *et al.*, 2013; Norouzi, *et al.*, 2015; and Ghasemi, *et al.*, 2015). In this research finding not relevance with in previous findings, there for H3 un-supported. The conditions and contradiction of create and applied of innovation space in the business process of statedowned business Bandung district not contingence factor of management accounting system characteristic dimension in the organizational dynamism goals. The managers less sufficient of knowledge would applied of innovation type and not enough supporting by management accounting information systems and

characteristic dimension out all in the existing of organizational dealing. Forever, opportunities capture and unfortunately would not optimum earned create added-value for stakeholders, public services, and financing growth. And the end, through interviewing with user (Bandung community) said state-owned enterprise generally less interesting capture and adopted of innovation space in the business process through enhancing of public and finance performance of organizational goals.

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### Evidence from Bandung District, West Java, Indonesia Muhammad Dahlan

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