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## Control authority, business strategy, and the characteristics of management accounting information systems

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### Abstract

Phenomenon of value to the information in Indonesia is that information is not used for making decision but for official concern. Using 195 response respondents from 430 managers of the manufacturing companies mostly from Jakarta, Indonesia, we analyse and test whether the formal, and informal structures control authority and business strategy influence the characteristics of management accounting information system (MAIS). We found that the formal, informal authority and business strategy significantly and positively influence the characteristics of MAIS. The informal and business strategy have big effect on the MAIS for decision making, while the formal one has very much less effect. The business strategy has a very dominant influence on developing the MAIS. The Formal authority is opposite and not in line with the informal one. Business strategy is more adaptive to the informal authority than the formal one. This provided that managers' business strategy moderately be based not by the formal information provided, but the informal one.

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### 1. Introduction

In Indonesia there is a phenomenon of value to the information. Reports are made just for official concern and

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not for decision making. Since the information made not for the decision making purposes, there are many useless reports. On the contrary there are many statistical reports not be used by the related departments. The crisis information had not been aware and action taken until the problems raised themselves. The decision makers received neither on-time, broad coverage, aggregate information, nor integrated ones.

Information useful in the management accounting information system is based on the needs of decision – makers. The information must be broad coverage, on-time, aggregated, and integrated ones (Chenhall & Morris, 1986; Chia, 1995; Lal & Hassle, 1998; Bouwens & Abernethy, 2000; Moores & Yuen, 2001; Tillema, 2005; Agbejule, 2005). It is therefore necessary that management accounting information system to address these challenges. There are some factors that could affect the management accounting information systems. Business intelligence, decision support, the quality of the accounting manager, support and commitment of the top management, environmental uncertainty, authority, business strategy, organizational culture and structure are factors that could affect the characteristics management accounting information systems (MAIS) in Indonesia. We expect that authority and business strategy could affect the characteristics MAIS most.

Formal and informal authorities are two constructs of authority contained in the organization that affect the use of MAIS by managers in managing the company (Cyert & March, 1963). Formal authority comes from consciousness by deliberately the legality of the decision and informal authority derived from the power of individuals within an organization (Barnard in Cyert and March, 1963). Since the characteristics of MAISIS used to control the behaviour of managers and useful decision makings, the system must be designed using the formal and informal authority (Chenhall & Moris, 1986; Bouwens & Abernethy, 2000).

The business strategy applied in each company will need relevant information within the company(Abernathy & Guthire, 1994). Therefore alleged business strategy will affect the characteristics of MAIS. Miles and Snow (1978) suggest there are four typologies of business strategy that a firm can use, they are prospector, defender, analyser, and reactor. Every strategy needs different characteristics of MAIS. Abernethy and Guthrie (1994) provide evidence that the characteristics of broad-scope information have a more positive influence on the performance of the prospector strategy company than in a defender strategy company. Simon (1987) found that in companies which are adopting the build or prospector strategy will more emphasis on accounting information, while Govindarajan and Gupta (1988) indicates that the emphasis of accounting information is lower in companies that adopt prospector strategy. According to Lukito and Noegroho (2009) business strategy proved positive and significant impact on MAIS that affect the performance of the manager while the uncertainty of the environmental variable does not moderate the relationship of MAIS and the performance of manager. This is in contrast to the research made by Gul and Chia (1991) but in line with research of Wahyu (1994). According to Govindarajan (1986) the result study differences in previous studies due to factors conditional or contingency.

This study aims to examine and analyse the influence of the formal and informal structures of control authority, and business strategy on the characteristics of MAIS.

## **2. Hypotheses development**

### *2.1 The formal structures control authority*

Making good decisions will affect managerial performance and relevant MAIS could affect good decisions (Chenhall & Morris, 1986). The characteristics of MAIS which are useful for decision making are those that have the characteristics of broad scope, timeliness, aggregation, and integration. Available information presented on time (timeliness) will be valuable to be taken into consideration timely in the decision making before the information loses its ability to influence decisions. With timely information managers could be capable in making good decisions since it provide rapid and timely information in taking proper action. Moreover it can provide rapid feedback from the decision made as well. The right aggregated information could prevent the possibility of overload of information. Evaluating relevant-aggregated information is more efficient and timely before making decision than widely spreading information. Incorporated mutual information or integrated information reflects a good coordination between the segments of the organization and of the sub - units with each other. More integrated information needed in decision-making at the higher level of organizational complexity and interdependence of the

sub-units. Supardiyono (2001) documented that the more adequate the accounting systems that generate information for the management in making decision, the higher the performance of the managers. The information has broad scope, timeliness, aggregation, and integration characteristics. The more available the characteristics of MAIS needed, the better then the individual manager made decision.

The structure of formal control authority related to the sub-unit level associated with two things, as control role which is the use of MAIS to control the behaviour of the subordinates and as role making the use of MAIS to facilitate decision making. The subordinates then provide information that needed by the decision makers in facilitate their decision making. Jensen and Meckling (1992) suggest that the beneficial of MAIS liaise structure of formal authority and the control role. This is based on the assumption that the right decision could be made as if in the case of there is a delegation of authority to the lower management. Control is designed and implemented to encourage employees to work with the best motivation so that the formal control reflects the MAIS (Milgrom & Roberts, 1992; Zimmerman, 1997; Jensen, 1998; Rita. JD, Atarwaman, 2008). The formal control authority affects the MAIS positively.

In the Lut and Shields (2003) study, the formal structure of authority (the Formal) affects the use of MAIS to facilitate decision -making and control management. The decentralized formal authority system is more effective to change information between the organization and its external environment. It is more rapid to respond to the changes needed. This structure also provides the potential conditions for the distribution of resources and increase in effective results, and in turn it may affect the ability of managers to control and coordinate the activities of the operating performance at the lower levels in the organization since it provides broad scope, aggregate, on-time, and integrated information (Abernethy & Lillis, 2001; Rita. JD, Atarwaman 2008). Assessment right decision tends to occur in the organizational structure that is autonomous or decentralized (Wruck & Jensen, 1994; Abernethy & Lillis, 2001). In the uncertainty environment, it was empirically proven that management tends to implement a decentralized structure that gives full authority to the lower level (Otley, 1980; Chia, 1995). The Formal could directly demand formally the systems and the subordinates to fully provide the broad scope, aggregated, on-time and integrated information. The following hypothesis is thus formulated:

*H<sub>1</sub>: The formal structures control authority influence the characteristics of management accounting information systems positively.*

## 2.2 *The Informal structures control authority*

The informal structure of control authority (the Informal) derived from the power and influence of dominance coalition (Cyert & March, 1963). Power is defined as the individual's ability to influence decisions and activities in ways that are not sanctioned by the authority of the formal system (Kotter, 1985; Alexander & Morlock, 2000). In a formal organization, the most frequent access for individuals to gain power is probably through the office (Robbins, 1996). Their power comes from their ability to control the budget and the role of the post. A company is highly depending on the cooperation of top managers and the dependence allows them to demand and achieve the appropriate authority within the organization. The power of manager indicated in their control over resources significantly without formal responsibility for the use of all these resources (Abernethy & Lillis, 2001). In contrast the formal which is in the delegation of authority is well run and the individual has the responsibility for the decision. Managers gain power to influence decision-making at all levels within the organization. In formal authority is implemented by senior management. The power effects on the use of MAIS by top management are in controlling behaviour. Informal authority makes decisions without using a business strategy that enables top managers to use the MAIS in controlling their behaviour (Young & Saltman, 1985). According to Abernethy and Stoelwinder (1995) managers with the power oppose the efforts of top management to implement administrative systems. Abernethy and Stoelwinder (1991), stated that the power of manager is not based on the information presented by the accounting system, but is based on the relevant for decision making. This is due to their reluctance to perform managerial roles such as that the issue of leadership in the organization is more important than the issue of resource management. The absence of managerial orientation will be negatively affected by the

use of MAIS to control decision making and management. The Informal through the leadership and the power manager could make the individual provide information that needed for the decision making right on-time, broad scope, aggregated, and integrated. The following hypothesis is thus formulated:

*H<sub>2</sub>: The informal structures control authority influence the characteristics of management accounting information system positively.*

### 2.3 Business strategy

It has been argued that the characteristics of management accounting information are influenced by the planned business strategy. Miles and Snow (1978) classify business strategies into four types of prospectors, analysers, defenders and reactors. Prospector strategy tends to incorporate changes and new product development, and continuously look for new opportunities and markets. In addition the company with a prospector strategy typically faces greater environmental uncertainty than the companies with a defender strategy, so that it needed greater information on the company's accounting information in order to improve the performance of the company. This opinion is supported by Abernethy and Guthrie (1994) which states that the accounting information has a positive influence on the performance of companies that implement a prospector strategy than companies that implement the defender strategy.

Business strategy in product defenders maintain existing customer with a narrow product market in defending the company. Companies with this strategy have only slight changes and new product development, as well as competing mainly with low price, quality and service and operating efficiency. Conformity the business strategy to the characteristics of management accounting information will result in higher performance. Prospector business strategy which supported by relevant management accounting information characteristics will result in a more positive performance in comparison with a company that uses a defender strategy. This happens because the prospector strategy typically faces greater environmental uncertainty than companies that use defender strategy. The following hypothesis is thus formulated:

*H<sub>3</sub>: The business strategy influences the characteristics of management accounting information system positively.*

## 3. Research design

### 3.1. Data

Indonesian Central Bureau of Statistics estimates that the number of manufacturing companies in Indonesia amounted to 20,100 companies. Based on calculations by the Slovin formula, a minimum sample size is 195 companies. We used 430 top managers from 430 companies as respondents mostly from Jakarta, Indonesia. They are either the head officer or the representative officer of the companies. From 430 respondents, 208 responded and 195 questioners were clearly can be used in the study.

### 3.2. Analysis and hypothesis testing.

The analysis technique used to test the hypothesis is Structural Equation Model (SEM) with two- stage approach (Two -step approach). Using two substructure structural equation model, the research model is as follows:

$$\text{MAIS} = P_{Y1X1} C\_Formal + P_{Y1X2} C\_Informal + P_{Y1X3} S\_Business + \epsilon$$

MAIS is Characteristic Management Accounting Information System, C\_Formal is Formal Structure Control of Authority, C\_ Informal is Informal Structure Control of Authority, and S\_Business is Business strategy.

Structure Control Authority:

- a) Formal structure control of authority is defined as a deliberate choice in top management took the decision to delegate types to lower level management and accountability systems are usually associated with. (Govindarajan, 1988) Formal structure control of authority was measured by 3 questions.
- b) Informal structure control of authority shows how much power manager when there is no delegation of

decision system within the company and can be seen from their influence on decision making. Managers often use their power and influence without formal sanction to do so (Young and Saltman, 1985). Informal structure control of authority was measured by 7 questions.

Business strategy is defined as the extent to which managers undertake integrated planning by considering the strategic aspects of the company. In accordance to the strategy typology developed by Miles and Snow (1978) we used the type of prospector and defender as the two main different types of strategy. Business strategy was measured by 24 questions.

The Characteristics of MAIS has four dimensions: the broad scope, timeliness, aggregated, and integrated of information (Chenhall & Morris, 1986). The Characteristics of MAIS is measured using an instrument developed by Chenhall and Morris (1986) and has been used by Abernathy and Guthrie (1994) and Chong and Chong Kar (1997). Meanwhile in Indonesia, it has been used by Rudi (1998), Mardiyah and Gudono (2000), and Rustiana (2001). The Characteristics of MAIS was measured with 15 questions.

#### 4. Findings

Using LISREL 8.8 Table 4.1 shows goodness of fit of the model. The model is well constructed, the Expected Cross - Validation Index (ECVI), CAIC, saturated CAIC, and Independence CAIC, AIC, saturated AIC, and Independence AIC are good fit.

Table 4.1. Goodness of Fit of the Model

Goodness of Fit Criteria	Goodness of fit indicator	Estimate Results	Goodness of Fit
RMSEA	RMSEA < 0.08	0.23	Not fit
P ( <i>close fit</i> )	P < 0.05	0.000	Close fit
ECVI	<Independence & closed to Saturated Model	M* = 79.25 S** = 14.75 I*** = 197.29	Good fit
AIC	<Independence & closed to Saturated Model	M* = 15374.27 S** = 2862.00 I*** = 38500.27	Good fit
CAIC	<Independence & closed to Saturated Model	M* = 15844.30 S** = 8976.66 I*** = 38500.27	Good fit

Our Structural Equation Model (SEM) model is as follows:

$$\text{MAIS} = 0,14 \text{ C\_Formal} + 0,34 \text{ C\_Informal} + 0,66 \text{ S\_Bisnis}$$

Where MAIS is Characteristics of Management Accounting Information Systems, C\_Formal is Formal Structure Control of Authority, C\_Informal is Informal Structure Control of Authority, S\_Business is Business Strategy.

Table 4.2 and the SEM show that all of the hypothesis one (H<sub>1</sub>), two (H<sub>2</sub>), and three (H<sub>3</sub>) positively significant. The formal structures control authority (C - Formal) influence the characteristics of MAIS positively significant. The informal structures control authority (C\_Informal) influence the characteristics of MAIS positively significant. The business strategy (S\_Business) influences the characteristics of MAIS positively significant.

Table 4.2. Hypothesis Testing

Eksogen variables	Coefficient	t -stat	Hypothesis test	The Effect		
				Direct	Indirect	Total
C-Formal	0,14	2,61	Sig.	1,96 %	3,95 %	5,91 %
C-Informal	0,34	3,34	Sig.	11,56 %	10,71 %	22,27 %
S-Business	0,66	3,69	Sig.	43,59 %	9,46 %	53,05 %
Simultaneous influence on MAIS				57,08 %	24,12 %	81,20 %

The formal control authority itself does not much affect the MAIS. This gives evidence that formal control authority is not a big help in designing broad scope, on-time, aggregated, and integrated MAIS since it affect only 5.91%. It is the informal control authority that support bigger than formal control authority when designing the MAIS that could be good used in decision making. On top of that, the business strategy plays the biggest role directly in designing the MAIS that support the decision making. The results of empirical research, shows an interesting phenomenon. The most dominant influence on the characteristics MAIS is the business strategy and the informal structure control authority has greater influence on characteristics MAIS than the formal ones.

The formal ones tend not to give information that could be used in decision making. It tends to make reports only for official concern that is why there are many useless reports in Indonesia.

Since the correlation of formal and informal structure control authority is weak and negative, we found that the formal and informal control authority is not in line and tend to be opposite. The empirical result reveals that there is gap between the formal and informal structure control authority in Indonesia. The formal ones focus on making and giving the official report and the informal focuses on how to make good decision using appropriate and relevant information. They are thinking that the formal ones do not help to make good decision since most of the formal information is being used just for completing the official applications.

We found that the correlation between the informal structure control authority and the business strategy is quite moderate and positive (+0.512). Hence, it can be argued that the informal is in line with the business strategy though moderately correlated. In making decision the informal and the business strategy needs broad scope, on-time, aggregated, and integrated information. On the other hand, the formal structure and the business strategy are not in line and weakly correlated. The formal is not support the business strategy, even opposite it. It was found that the implemented business strategies were not adjusted by the formal but by the informal structure control authority. Empirical findings, that a formal approach is indispensable in business practices, and complementary with the informal authority. The negative correlation sign is able to explain the empirical phenomena in the field that it is easier to take an informal approach in the implementing the strategy compares to a formal one.

## 5. Conclusions

The situation where information is not prepared for decision making purposes and the phenomena of decision making without using the appropriate and relevant information is happened in Indonesia. Since the appropriate and relevant information are made by the MAIS, we examined and analysed the influence of the formal and informal structures of control authority, and business strategy on the characteristics of MAIS. We found that the formal and informal authority, and business strategy significantly and positively influence the characteristics of MAIS. Developing the MAIS in order to produce information used for decision making was more concerned by the informal authority and the business strategy than the formal authority. The informal authority and the business strategy have much bigger effect on the characteristics of MAIS than the formal one. The formal authority is concern only with the official concern and is not in line and even tend to be opposite with the informal one in developing decision making information. Moreover, the formal authority is not in line and even to be opposite with the business strategy. Compare to the authority of both formal and informal, business strategy has a very dominant influence on the characteristics of MAIS. This is consistent with the nature of management, planning and implementing of all things related to the company, and it is necessary that the strategy create good business. In developing the MAIS the business strategy is the most important factor to be considered, then the informal authority, and the least is the formal structure control of authority.

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