

The Effect of Environmental Uncertainty and Organizational Structure to the Quality of Management Accounting Information Systems and It Implications to the Quality of Management Accounting Information

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Abstract: The purpose of this research is to examine and analyze the influence of environmental uncertainty and organizational structure on the quality of management accounting information system and its implications on the quality of management accounting information. The phenomenon that occurs in some companies in Indonesia shows that the management accounting information system at the company has not qualified so that the impact on the quality of accounting information management. The data of this research were obtained through a survey by distributing questionnaires to manufacturing companies in the consumer goods industry sector listed on the Indonesia Stock Exchange. Testing data using Partial Least Square (PLS). The research method used explanatory research method. The results showed that the environmental uncertainty affects the quality of the management accounting information system, while the organizational structure shows the results do not affect the quality of the management accounting information system. The simultaneous, environmental uncertainty and organizational structure affect the quality of management accounting information systems and implicate the quality of management accounting information.

1 INTRODUCTION

Wilkinson et al. (2000) explains that "Data are the raw facts and figures and even the symbols that together form the inputs to information system". Gelinas and Dull (2008) and Stair and Reynolds (2010) argue that the value of information is directly related to how to help decision makers achieve organizational goals and that valuable information can help people and their organizations carry out more tasks efficient and effective. As for high-quality management accounting information according to O'Brien and Marakas (2010), DeLone and McLean, 1992, Gelinas and Dull (2008) is an information product whose characteristics, attributes or quality will help that information become valuable to users. Related to the system, the quality of the management accounting information system according to DeLone and McLean (1992) is conformity in measuring.

According to Heidmann and Schäffer (2008), and Belkaoui (2002) states that management

accounting information systems are formal systems that provide information from the internal and external environment to management. In line with the results of Chitmun and Ussahawanitchakit research (2011) which shows that "timeliness management accounting system has a significant positive effect on information quality, integration of management accounting systems has a positive impact on information quality".

In reality in Indonesia, there is still a lack of quality in the application of management accounting information systems both in government and private sectors. This was conveyed, among others, by Yudhi Chrisnandi, Minister of Administrative Reform and Bureaucratic Reform (2014), Karsani Aulia, Samudra Energy's Head of Technology (2014), Surjanto Yasaputera, Corporate Secretary, PT Wismilak Inti Makmur Tbk. (28/02/2013), and Eka Suharto, FFI Information and Communication Technology Manager, PT Frisian Flag Indonesia (27/09/2007) which stated in essence that as long as

the system not being integrated, it would cause various problems.

Hansen and Mowen (2007) explain that the core of management accounting information systems is the process described by activities to produce outputs that meet the objectives of the system. The results study from Strumickas and Valanciene (2010), and Ajibolade (2013) concludes that management accounting information systems are influenced by the external environment (environmental uncertainty).

Management accounting information systems also relate to organizational structure. Organizational structure can affect management accounting information systems as stated by Stair and Reynolds (2010), Miyamoto (2008), and Valanciene (2010) namely that organizational structure can have a direct impact on organizational information systems.

Based on the background described above, the formulation of the problem that can be submitted is as follows: How much influence is partially Environmental Uncertainty and Organizational Structure on the Quality of Management Accounting Information Systems and how much influence does the Quality of Management Accounting Information System have on the Quality of Management Accounting Information.

The purpose of this study is to obtain empirical evidence in the field that Environmental Uncertainty and Organizational Structure affect the Quality of Management Accounting Information Systems and have implications for the Quality of Management Accounting Information. The results of this study are intended to be able to contribute to the development of science and also can provide alternative solutions to problems faced by manufacturing companies in improving the operational quality of the company, the quality of production, and the right decision making, and ultimately can increase the productivity of the company.

2 LITERATURE REVIEW

2.1 Environmental Uncertainty

Dimensions of external environmental uncertainty according to Robbins and Coulter (2013), Duncan, (1972) are the degree of change and the degree of environmental complexity. While indicators of external environment uncertainty (Robbins and Coulter, 2013; Duncan, 1972; Gordon and

Narayanan, 1984; Mejia et al., 2005) are: Environmental stability (Gordon and Narayanan, 1984); Changes in government regulations (Duncan, 1972); Competitor complexity (Robbins and Coulter, 2013); Supplier complexity (Robbins and Coulter, 2013).

2.2 Organizational Structure

The dimensions and indicators of each characteristic of the organizational structure chosen by the researcher are as follows: Span of Control: a.) Communication between superiors and subordinates (Ivancevich et al., 2014); b.) Level of supervision (Ivancevich et al., 2014); Centralization: a.) The level of decision making (Robbins and Coulter, 2013); b.) The level of formal authority (Robbins and Coulter, 2013); Formalization: a.) Documentation of procedures (Robbins and Coulter, 2013); b.) Written regulations (Robbins and Coulter, 2013); Departmentalization: a.) Coordination between sections (Robbins and Coulter, 2013); b.) Task grouping (Robbins and Coulter, 2013)

2.3 The Quality of Management Accounting Information Systems

Dimensions and indicators of the Quality of Management Accounting Information Systems are as follows: Integration, consist of (a) Integration between system components (Heidmann and Schäffer, 2008; Azhar, 2013) and (b) Integration between sub-components system (Azhar, 2013); Flexibility consists of (a) Being able to adjust user needs (Heidmann and Schäffer, 2008) and (b) Able to adapt to changes in the environment (Heidmann and Schäffer, 2008); Accessibility consists of (a) Can be accessed easily (Heidmann and Schäffer, 2008; Stair and Reynolds, 2012) and (b) Can be accessed according to the development of information technology (Heidmann and Schäffer, 2008; Stair and Reynolds, 2012) ; Formalization: Following the rules and conditions that apply (Heidmann and Schäffer, 2008), and Media Richness consists of (a) Using many channels that facilitate communication (Heidmann and Schäffer, 2008) and (b) Facilitate interaction between parts (Heidmann and Schäffer, 2008).

2.4 The Quality of Management Accounting Information

The dimensions and indicators that can be used for each component of the quality of management accounting information are as follows: Relevance (Hall, 2011); Accuracy (Laudon and Laudon, 2014); Completeness (Laudon and Laudon, 2014) and (Heidmann and Schäffer, 2008); Timeliness (McLeod and Schell, 2008; Chenhall and Morris, 1986) and (Heidmann and Schäffer, 2008); Scope (Heidmann and Schäffer, 2008) and Chenhall and Morris, 1986); Aggregation (Chenhall and Morris, 1986)

2.5 The Influence of Environmental Uncertainty on the Quality of Management Accounting Information Systems

Delivered by among others Laudon and Laudon (2014); Wilkinson et.al. (2000); Hoque (2003); Azhar (2013); and research by Gordon and Narayanan (1984), Duncan (1972); Ajibolade et al. (2010); and Nita (2008); it can be said that environmental uncertainty affects the quality of management accounting information systems.

2.6 The Influence of Organizational Structure on the Quality of Management Accounting Information Systems

Based on opinions between Stair and Reynolds (2010); Wilkinson et.al. (2000); Laudon and Laudon (2014) and the results of the study include Salehi and Abdipour (2011); Indeje and Zheng (2010); Strumickas and Valanciene (2010) can be said that organizational structure influences the quality of management accounting information systems.

2.7 The Influence of Quality of Management Accounting Information Systems on the Quality of Management Accounting Information

Hall (2011), Stair and Reynolds (2012), Hansen and Mowen (2007), Bagranoff et al. (2010), Atkinson (2012), Xu (2003), Heidmann and Schäffer (2008), Richardson et al. (2014) and also the results of research from Shoommuangpak (2011), Valanciene and Gimzauskiene (2007) can be said that the

quality of management accounting information systems will be able to influence the quality of management accounting information so that decisions are made be right.

Figure 1 shows the thought framework as a basis for submitting hypotheses.

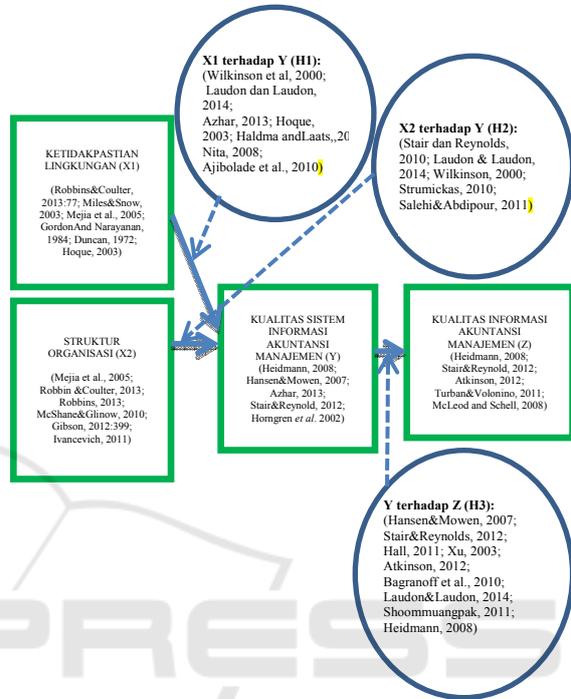


Figure 1: Conceptual Framework

3 RESEARCH METHOD

In this study, the method used is descriptive and explanatory research (Sekaran and Bougie, 2013). Researchers want to get a basic answer about the cause and effect by analyzing the causes of phenomena in the concepts raised in the study (Cooper and Schindler, 2014). While the indicators in this study use an ordinal scale which is measured based on the attitude scale using a Likert approach.

3.1 Population and Sample

Based on data from the Indonesia Stock Exchange, in 2015 there were 511 companies including 147 manufacturing companies. Whereas those included in the category of consumer goods industry sector amounted to 40 companies. To test the hypothesis of this study researchers used Structural Equation

Modeling (SEM) with Partial Least Square (PLS) estimation.

3.2 Method of Collecting Data

Data collection method used in this study is to use a questionnaire method, provide direct questionnaires or postal self-administered questions or via e-mail (internet survey).

3.3 Data Testing Method

Data collection is done using a questionnaire. Therefore, to test the sincerity of the respondent's answer, two types of tests are needed: a test of validity and test of reliability. Testing is done in data analysis using SEM.

3.4 Analysis Design and Hypothesis Test

3.4.1 Analysis Design

Two types of analysis were carried out to obtain results that were consistent with the objectives of the study, namely descriptive analysis and analysis through Structural Equation Model (SEM).

3.4.2 Model Evaluation

The model in structural equation modelling through the partial least square (PLS) approach consists of two types, namely the measurement model suitability test (outer model) and the structural model suitability test (inner model).

4 RESULTS AND DISCUSSION

4.1 Descriptive Analysis

Based on the calculation of the outer loadings value, all indicators of each construct have Loading Factor above 0.5 said to be valid. The value of composite reliability (CR) of each construct is reliable because its value is above 0.7. All constructs have good convergent validity because they have AVE values above 0.5.

The discriminant validity evaluation results which are seen from the cross loading value concluded that the construct of Environmental Uncertainty (EU) and Quality of Management Accounting Information System (MAIS) discriminates its good validity. The construct of

Organizational Structure (ORGSTR) and Quality of Management Accounting Information (MAI) discriminates its validity less well.

Subsequent evaluation of discriminant validity shows the construct AVE root value Environmental Uncertainty, Organizational Structure, and Quality of Management Accounting Information System is greater than the maximum correlation with other constructs so that it can be said discriminant validity is good because AVE root value must be higher than the correlation between constructs.

4.2 Model Evaluation Structural

The complete relationship between variables in this study can be explained as shown in Figure 2.

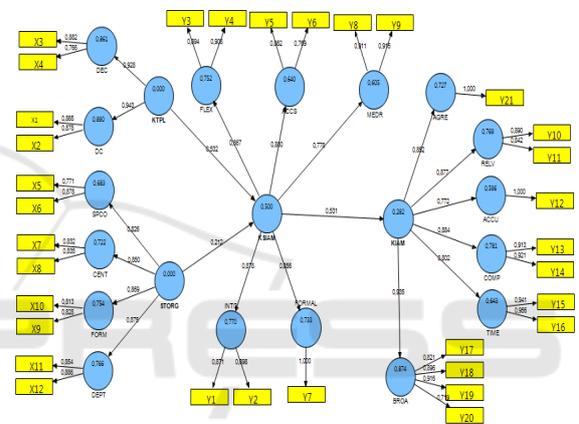


Figure 2: Model of the influence of Environmental Uncertainty and Organizational Structure on Quality of Management Accounting Information through Quality Management Accounting Information Systems

Testing of the structural model is done by testing the significance of each parameter by comparing the t-statistic value with t table (at 5% significance level), then looking at the R-square value which is a goodness-fit test model.

Table 1: Parameter Coefficient

	λ	T-Statistic	R-square
Organizational Structure ->MAIS Quality	0.212	1.334	0.500
Environmental Uncertainty ->MAIS Quality	0.532	3.473	
MAIS Quality ->MA Information Quality	0.531	4.566	0.282

**significant at the level 0.05, $t_{table} = 1.96$

Based on Table1, $MAISQ = 0.212 \text{ ORGST} + 0.532 \text{ EU} + 0.500$ and $MAIQ = 0.531 \text{ MAISQ} + 0.718$

The parameter coefficient of Organizational Structure and Environmental Uncertainty on the Quality of Management Accounting Information System is positive. This means that the Organizational Structure and Environmental Uncertainty can improve the Quality of Management Accounting Information Systems. If the Organizational Structure increases by 1 unit, it will improve the Quality of Management Accounting Information System by 0.212 and if the Environmental Uncertainty increases by 1 unit, it will improve the Quality of Management Accounting Information System by 0.532. R square value of 0.532 indicates that the Organizational Structure and Environmental Uncertainty can explain the Quality of Management Accounting Information System constructs by 50.0%, the remaining 50.0% is explained by other constructs in addition to Organizational Structure and Environmental Uncertainty. Parameter coefficient of Management Accounting Information System Quality variable on Management Accounting Information Quality variable is positive. This means that the Quality of the Management Accounting Information System can improve the Quality of Management Accounting Information. If the Quality of the Management Accounting Information System increases by 1 unit, it will improve the Quality of Management Accounting Information by 0.531. R square value of 0.282 indicates that the Quality of Management Accounting Information System can explain Management Accounting Information Quality variables of 28.2%, the remaining 71.8% is explained by other constructs other than Quality of Management Accounting Information Systems. Next to see the effect of each variable partially and simultaneously obtained the following results:

Table 2: Partial Test of Environmental Uncertainty on MAIS Quality

	λ	T-Statistic
Environmental Uncertainty ->MAI Systems Quality	0.532	3.473

Based on Table 2, it is obtained a statistical t value of 3.473. Because the value of t statistic is greater than t table (t table with a significance of 5% at 1.96), then it gives a significant conclusion that there is a significant influence of Environmental Uncertainty on the Quality of Management Accounting Information Systems.

Table 3: Partial Test of Organizational Structure on MAI Systems Quality

	λ	T-Statistic
Organizational Structure -> MAI Systems Quality	0.212	1.334

Based on Table 3, the statistical t value is 1.334. Because the t value of statistics is smaller than t table (t table with a significance of 5% at 1.96), then it gives a non-significant conclusion, meaning there is no significant influence from the Organizational Structure on the Quality of Management Accounting Information Systems.

Table 4: Partial Test of MAI Systems Quality on MAI Quality

	λ	T-Statistic
MAI Systems Quality ->MAI Quality	0.531	4.566

Based on Table 4, the statistical t value is 4.566. Because the value of t statistic is greater than t table (t table with a significance of 5% at 1.96), then it gives a significant conclusion which means that there is a significant influence of the Quality of Management Accounting Information System on the Quality of Management Accounting Information.

Table 5: Simultaneous Test, Environmental Uncertainty and Organizational Structure on the Quality of Management Accounting Information Systems

	R ²	F
Environmental Uncertainty and Organizational Structure ->Quality of Management Accounting Information Systems	0.500	31.000

Through test statistics with $\alpha = 5\%$ and $df1 = k = 3$, $df2 = n-k-1 = 65-2-1 = 62$ obtained F table value of $\pm 3,145$.

Based on the following test criteria: Accept Ho if F counts <F table and Reject Ho if F counts> F table. Based on the data in Table 5, it can be obtained the Fcount value of 31,000. Because the F value is calculated (31,000)> F table (3,145), then Ho is rejected. That is, the Organizational Structure, and Environmental Uncertainty have a significant effect jointly on the Quality of Management Accounting Information Systems.

Table 6: Direct Influences

	Path Coefficient	Direct Influences	Total Influences
Environmental Uncertainty–MAIS Quality	0.532	0.283	28.35%
Organizational Structure–MAIS Quality	0.212	0.045	4.5%
MAIS Quality – Management Accounting Information Quality	0.531	0.282	28.2%

From Table 6 can be seen that the total effect of Environmental Uncertainty on the Quality of the Management Accounting Information Systems is 28.35%, and the total influence of the Organizational Structure on the Quality of Management Accounting Information Systems is 4.5%; and the total effect of the total influence of the Quality of the Management Accounting Information System on the Quality of Management Accounting Information at 28.2%.

5 CONCLUSIONS

Based on the discussion and analysis related to the phenomenon, the formulation of the problem, hypothesis, and the results of the study concluded, as follows:

- Environmental uncertainty affects the quality of management accounting information systems. Thus the company's ability to anticipate/follow up on any changes related to the level of environmental change, such as environmental stability and changes in government regulations. The company has also been able to anticipate the complexity of the environment, for example against competitors and suppliers.
- Organizational Structure does not affect the quality of management accounting information systems. The quality of the management accounting information system in the company is not yet high due to the high span of control, the low communication between superiors and subordinates, and the low coordination between sections.
- The quality of the management accounting information system affects the quality of management accounting information. Thus the consumer goods industry sector manufacturing

companies listed on the IDX have implemented a quality management accounting information system, so as to meet the needs of stakeholders.

Based on the results of the research and discussion and conclusions in this study, it is recommended:

- Submission of information to management on environmental changes that occur, for example, changes made by competitors, suppliers, customers, government regulations.
- Improvement in the organization so that the company has a structure that can facilitate supervision, direct communication or through technological devices, and coordination between parts in processing data becomes information so that the decision making the process by management can be made appropriately.
- Increase flexibility in management accounting information systems, such as the ability to adjust to user needs so as to produce quality information and also improve the ability of the system to adapt to changing situations and conditions
- Increase the accuracy of management accounting information which will ultimately be taken into consideration in management decisions.
- Perform replicability and generalibility, it is recommended for other researchers to conduct research again based on the results of this study using the same research method, in different units of analysis and samples.
- Other researchers are expected to examine other variables such as company strategy, manager competence, organizational culture, management changes, ethics, and others.

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