

## Towards understanding changes in management accounting in the manufacturing industry in Indonesia

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### ABSTRACT

This study aimed to investigate the perceptions and understanding of manufacturing industry managers in Indonesia in an effort to measure the effectiveness of management accounting changes, especially under the conditions of environmental uncertainty. In this study, a research questionnaire was used, and was sent directly to the respondents through surveyors and email to 389 manufacturing companies. The sampling technique was simple random sampling. Statistical techniques were based on Confirmatory Factor Analysis and descriptive analysis, namely mean and mode. The results of this study provide a theoretical contribution that the success of management accounting practices is caused by the application of the right organizational structure and strategy within the company. The areas of expertise, commitment, participation, and existing human resources are well managed in accordance with the company's vision and mission. It is expected that the company's management would be able to deal with environmental changes in improving its performance by changing management accounting practices.

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## 1. Introduction

Performance achievement cannot be separated from the role of management accounting. The uncertainty of environmental changes is one of the causes of changes in management accounting practices (Moore & Yuen, 2001). Management accounting is more than just a set of techniques, but a set of values and norms that provide information in the decision-making process, especially for developing manufacturing companies (Mat et al., 2016). In addition, every part of the company must be consistent and support each other in strengthening management accounting practices in order to achieve a competitive advantage and achieve expected performance targets (Moore & Yuen, 2001). This research was conducted at a manufacturing company considering that this industry is quite unique and has a complex work capacity ranging from the production process to finished goods that are ready for sale. Manufacturing companies make a considerable contribution to gross domestic product (GDP). According to the Central Bureau of Statistics (BPS), there are four sectors that contribute significantly (> 10%) to the Gross Domestic Product (GDP) by 2019, this phenomenon is suspected, among others, by the inability of management to anticipate changes that occur in the internal and external environment. Organization. Management's failure to anticipate these changes is due to the company's inability to manage the information used for decision making. Management accounting information system is an important instrument to support management in collecting information, so that information is presented in a more appropriate and long-term way for management's interests. The novelty of this research is to discuss a new understanding of management accounting that changes continuously, adjustments to environmental uncertainty require management to continue

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to innovate. This study intends to provide directions for matters that are considered in management accounting changes for management decision making. This research is motivated by the high growth of manufacturing companies, which causes the level of competition between companies to be tighter. In order for the company to continue to exist amid changes in the environment, the company must maintain its performance by changing management accounting practices. The company's growth is getting faster, so the company is required to be able to compete in a healthy manner by prioritizing their respective advantages, both in terms of products, marketing systems and services provided. The focus of this research is to understand changes in management accounting practices by identifying indicators of changes in management accounting practices.

Management accounting always changes over time. Developments in the business world require changes in management accounting practices in company management. The factors of environmental change, technological change, organizational structure change, and strategy change are suspected to be the causes of changes in management accounting practices. This study aims to explain the responses of managers in the manufacturing industry regarding changes in management accounting. Researchers are motivated by curiosity related to the manufacturing industry, which has grown less than 5.0% of the growth in Gross Domestic Product in Indonesia.

## 2. Critical review

### 2.1. *Management accounting Change (MAC)*

Changes in management accounting practices are a new phenomenon that shows the inequality of the application of management accounting practices in each organization/company. This difference is caused by the existence of factors within the organization that must adjust to the changing factors that exist in the organization's internal and external environment (Jermias & Gani, 2005; Spraakman, 2006; Tuan Mat et al., 2016; Waweru & Uliana, 2016). Potential drivers of environmental change are competition, technology, organizational design, and strategy (Shields et al., 2014). Environmental changes provide a high level of uncertainty and risk to changes in management accounting practices and performance, especially from the non-financial side (Burns & Vaivio, 2001). Changes in management accounting practices as a learning method to understand the influence of environmental factors on internal organizational processes (Wickramasinghe & Wickramasinghe, 2011). The change process reflects the question of how management accounting practices emerge, develop, and change to adapt to new demands on the changing environment in which the company is located. Various types of changes from a management accounting perspective are about changes in the integration of Activity Based Costing (ABC) into strategies for managing organizational, operational activities (Quinn, 2011). The results of this study indicate that ABC can contribute to improving organizational performance if it is implemented as part of the overall organizational change strategy. Several researchers have conducted research related to changes in management accounting (Baines & Langfield-Smith, 2003; Bisbe et al., 2007; Sulaiman & Mitchell, 2005). The results of the study (Bisbe et al., 2007) found benefits from changes in management accounting, but little was found about the driving forces for these changes (Laitinen, 2011). One of the drivers of change in management accounting is a motivational factor (Baines & Langfield-Smith, 2003; Bisbe et al., 2007). The interactions between the variables in change are not only in management accounting but also in other related disciplines (Innes & Mitchell, 1990; Laitinen, 2014). In an article on accounting management change (Laitinen, 2008), the factors that cause changes in management accounting practices are classified into six groups, namely: information needs, technological and environmental changes, will change, resources of change, the purpose of change; and external requirements. In addition, it also uses four categories of factors to explain changes in management accounting, namely: organizational factors; financial factors; motivational factors; management factors (Laitinen, 2011). Many companies have experienced significant changes in the business environment with advances in information technology, a highly competitive environment, new management strategies, and a greater focus on quality and customer service. Several management accounting studies have highlighted significant changes in the operating environment (Choe, 2004; Haldma & Lääts, 2002; Spraakman, 2006), which influence the choice of management accounting systems and effective techniques, forcing organizations to reconsider their designs and strategies for improved performance (Bisbe et al., 2007; Polnaya et al., 2018).

### 2.2. *Changes in Management Accounting Practices and Company Performance*

Companies must monitor various factors such as price and market share competition, marketing and product competition, the number of competitors, and the actions of competitors, which can be achieved through the use of accounting information systems that support financial and non-financial performance (Baines & Langfield-smith, 2003; Waweru et al., 2008). Changes in the management accounting system in Estonian companies are influenced by the external environment, technology, and organizational aspects. Increased competition and changes in market structure have affected the management accounting system and the use of management accounting technology (Haldma & Lääts, 2002). Competitive advantage and high performance can be obtained through the application of a management accounting system that is tailored to business strategy (Bisbe et al., 2007). The use of more advanced management accounting techniques can help employees to focus more on achieving differentiation strategies, such as quality, delivery, and service to customers, to meet customer satisfaction. For example, target costing allows managers to focus on low costs while maintaining customer expectations in terms of quality and functionality. The management

accounting system is presented as a differentiation strategy that can form the basis for a successful competitive strategy (Seal, 2001).

### 3. Method

This study investigates changes in management accounting variables through five indicators developed by several previous researchers (Baines & Langfield-Smith, 2003; Tuan Mat et al., 2016; Waweru & Uliana, 2016). These indicators include planning, control, cost determination, evaluation system (Award), decision making. The size of each indicator can be seen in Table 1.

**Table 1**  
Variables, Indicators, and Statement Items

Indicator	Item	Indicator	Reference
Plan	1	Budget planning	Waweru (2008); Baines and Langfield-Smith (2003), Sulaiman and Mitchell (2005), Zainun (2010)
	2	Earnings planning	
	3	Production planning	
	4	Strategic planning	
Control	1	Measurement of individual performance	
	2	Measurement of team performance	
	3	Measurement of organizational performance	
Determination of costs	1	Direct overhead allocation	
	2	Direct allocation of marketing overhead	
	3	Other allocation of costs	
Reward System	1	Reward system for bonuses	
	2	Performance reward system	
	3	Other reward systems	
Decision making	1	Reporting information more frequently	
	2	Measurement of non-financial measures	
	3	wider use of information	
	4	Differences in interpretation in the use of the system	
	5	Other changes in the reporting system	

This type of research is quantitative research. The questionnaire was used as a research instrument to collect data. The questionnaire uses a Likert scale with a choice of 5 is strongly agree, four is agreed, three is neutral, two disagrees and one represents strongly disagree. Respondents in this study are managers who work and have middle and upper-level positions in large manufacturing companies in Indonesia. The middle and upper-level positions referred to are individual positions in the company as department manager, department head, or supervisor. The unit of analysis aimed in this study is the company, while the unit of observation in this study is individuals who work and have middle to upper-level positions in manufacturing companies in Indonesia. The researcher took five (5) individuals from each company so that the total population was 1945 managers. The data analysis technique used CFA analysis and description. CFA analysis to ensure that the indicators selected are able to reflect the variables being measured. To determine the level of understanding using factor loading numbers. Descriptive analysis is used to determine respondents' perceptions of each measurement. Researchers used the SPSS and SEM PLS programs to perform data analysis.

### 4. Results

Table 2 shows the results of some descriptive statistics on planning indicators. According to the table, the planning indicator has an actual mean of 14.38 or 2.38 higher than the theoretical mean of 12.00 and a standard deviation of 1.55. It has a score of more than 12 with respondents as much as 77.2%, and the average value ranges from 3.43 to 3.75, this shows that changes in management accounting practices in the planning section have been carried out by most companies, amounting to 22.8% of the companies that have not been maximal in planning. The highest average value (3.75) is in production planning, while the lowest (3.43) is in budget planning. Profit planning has an average value of 3.43. This indicates that more than 50% of manufacturing companies carry out profit planning, although there are still 43.7% of respondents who stated that they have not carried out profit planning. The average value of strategic planning is 3.68, and this indicates that most of the manufacturing companies have carried out strategic planning in the face of changing competitive environments. Production planning has the highest average value, with answers above a value of 3 given by 79.2% of respondents. This means that the company must plan the production carefully because the quantity and quality of the product will affect the sustainability of the company.

**Table 2**

Descriptive Statistics of Planning Indicators

Item	Mean	Standard Deviation
Budget planning	3.43	0.79
Earnings planning	3.51	0.60
Production planning	3.75	0.52
Strategic planning	3.68	0.47

Production planning should get special attention from managers regarding changes in management accounting practices. Meanwhile, budget planning has the lowest average, namely, as much as 55.0% of respondents gave answers above a value of 3. The control indicator has an actual mean of 11.17 or 2.17 higher than the theoretical mean of 9.00 and a standard deviation of 2.16. As many as 63.1% of respondents have a score of more than nine and have an average value ranging from 3.68 - 3.77, which indicates that control is something that must be done by company managers regarding changes in accounting practices that occur in the company.

**Table 3**

Descriptive Statistics of Control Indicators

Item	Mean	Standard Deviation
Measurement of individual performance	3.68	0.91
Measurement of team performance	3.77	0.91
Measurement of organizational performance	3.73	0.79

Table 3 presents some descriptive statistics on control indicators. In this table, The highest average value (3.77) is associated with the measurement of performance as teamwork with 67.8% of respondents giving answers above a value of 3 while the lowest (3.68) is in controlling individual performance measurement with 53.7%, this shows that the implementation of changes in management accounting practices emphasizes the performance that is carried out as teamwork rather than on the performance carried out individually. Measurement of organizational performance has an average value of 3.73, respondents who gave answers above 3 were 67.7%. The cost determination indicator has an actual mean of 11.23 or 2.23 higher than the theoretical mean of 9.00 and a standard deviation of 2.16. As many as 81.2% of respondents have a score of more than 9. Each item in the cost determination indicator has an average value ranging from 3.65 - 3.81, with the highest average value (3.81) is in the allocation of overhead costs. Directly, while the lowest (3.65) in the determination of direct marketing overhead cost allocation changes. This shows that in changes in management accounting practices, the cost factor is a factor that must be considered in order to avoid errors in decision making.

**Table 4**

The Cost Determination Indicator

Item	Mean	Standard Deviation
Direct overhead allocation	3.81	0.57
Direct allocation of marketing overhead	3.65	0.68
Other allocation of costs	3.77	0.75

Direct overhead cost allocation has the highest average, with the respondent providing answers above the value of 3. This means that the respondent believes that changes in management accounting practices are directly related to determining costs, especially the direct allocation of overhead costs. The item with the lowest average is about determining direct marketing overhead allocation costs. This shows that the determination of direct marketing overhead allocation costs is not taken into account by the company's management regarding changes in management accounting practices. The determination of other cost allocations has a mean value of 3.77, meaning that manufacturing companies that make changes in management accounting practices also need to consider the allocation of additional costs. The reward system indicator has an actual mean of 9.25 or 0.25 higher than the theoretical mean of 9.00 and a standard deviation of 2.04. As many as 48.3% of respondents gave a score of more than 9, and each item had an average value ranging from 3.04 to 3.14. The highest average value (3.14) is in the reward system for performance with a total of 43.0% giving answers above the value of 3, while the lowest (3.04) for changes in other reward systems is only 32.9% of respondents giving the answer is a value of 3. This indicates that changes in management accounting practices are carried out by making changes to the reward system. Table 5 shows details of the descriptive statistics on system award indicators.

**Table 5**  
Descriptive Statistics of System Award Indicators

<i>Item</i>	Mean	Standard Deviation
Reward system for bonuses	3.07	0.69
Performance reward system	3.14	0.84
Other reward systems	3.04	0.79

Table 5 presents details of some descriptive statistics on system award indicators. According to Table 5, The reward system for bonuses has an average value of 3.07, respondents who gave an answer rating above 3 were 27.5%, while those who doubted and those who showed an assessment of less than 3 were 72.5%. This indicates that changes in management accounting using changes in the reward system for bonuses are not well responded to by respondents. The decision-making indicator has an actual mean of 17.54 or 2.54 higher than the theoretical mean of 15.00 and a standard deviation of 1.86. Based on the score of decision-making indicators as in the Appendix, as many as 94.6% of respondents had a score of more than 15. The indicators of change in decision-making each item had an average value ranging from 3.28 to 3.68, which indicated that the decision-making process was a process. That must be done by management when the company is faced with conditions of uncertainty. The highest average value is 3.68 with the number of respondents as much as 73.8% giving answers above the value of 3. there are other changes in the reporting system that have an average value of 3.68, this shows that respondents assess changes in accounting practices management can be done by considering other changes in the reporting system when management will make decisions. The lowest average value is 3.28, with the number of respondents as much as 51.0% giving answers above the value of 3 contained in the non-financial action measurement items. This shows that in making changes in management accounting practices, the measurement of non-financial actions is something that is not considered by management at the time of making decisions.

**Table 6**  
Descriptive Statistics of Decision Making Indicators

<i>Item</i>	Mean	Standard Deviation
Reporting information more frequently	3.40	0.69
Measurement of non-financial measures	3.28	0.82
Wider use of information	3.63	0.67
Differences in interpretation in the use of the system	3.56	0.59
Other changes in the reporting system	3.68	0.57

Items of change in information reporting have an average value of 3.40, respondents who gave answers above 3 were 51.0%. This shows that manufacturing companies have made many changes in information reporting, but there are still 49% who are doubtful about the application of information reporting. The broader use of information items had an average value of 3.63, respondents who gave an answer score above 3 were 73.8%, and there were those who doubted as much as 26.1%. This indicates that, in general, manufacturing companies have used a broader range of information in the decision-making process. On the items about changes to reduce differences in interpretation in system use, it has an average value of 3.56. The number of respondents who gave ratings above 3 was 60.4%. This indicates that the respondents considered that manufacturing companies had made changes in the last three years to reduce differences in the interpretation of system use.

#### 4.1 Model of Change in Management Accounting Practices

The results of the item selection explain that the variable management accounting practice change has three items for planning indicators, two items for control indicators, three items for cost indicators, three items for reward system indicators, and three items for decision-making indicators. The results of modeling changes in management accounting practices are described in Fig. 1. Moreover, Table 6 presents details of the construct validity in management accounting practices. The outer model test results show that all items have a loading factor above 0.5. Good construct reliability, apart from being measured by the adequacy of the loading factor, also needs to consider other indices.

**Table 6**  
Results of Construct Validity Changes in Management Accounting Practices

No	Indicator	AVE	Composite Reliability	Alpha Cronbach	Communality
1	Cost	0.767	0.907	0.845	0.767
2	Evaluation	0.771	0.910	0.849	0.771
3	Control	0.809	0.894	0.768	0.809
4	Decision	0.628	0.834	0.708	0.628
5	Plan	0.558	0.790	0.600	0.558

AVE (0.558 - 0.809) and communality (0.558 - 0.809) for the five indicators of change in management accounting practices are above 0.5 so that the model has met convergent validity. The results of the reliability test show that all indicators on this variable have a Cronbach's alpha value (0.600 - 0.849), which is greater than 0.60 and a composite reliability value (0.790 - 0.910), which is greater than 0.70. Thus, the fifteen items used in this variable are valid and reliable.

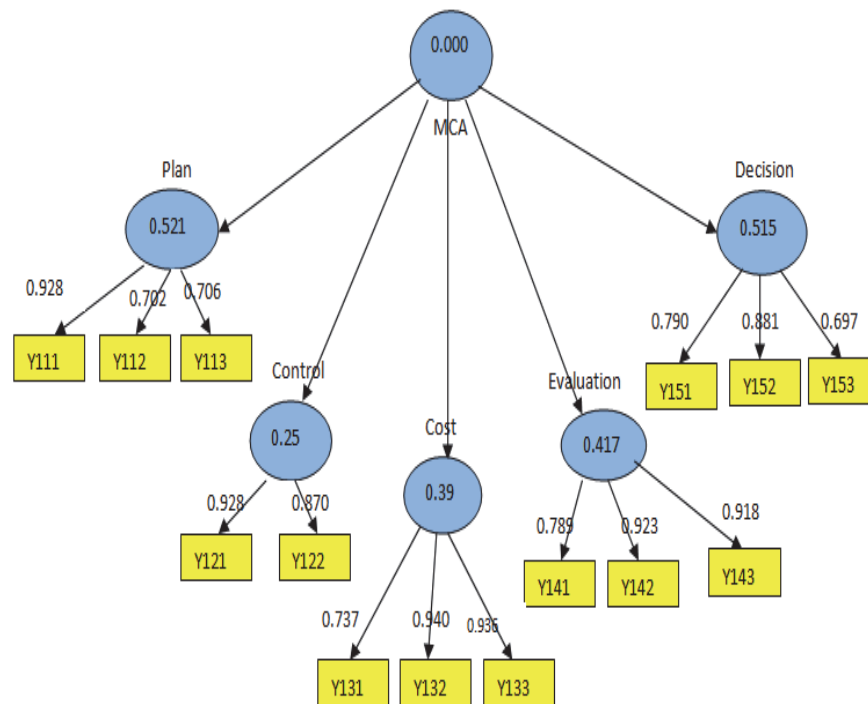


Fig. 1. Results of Outer Model Change in Management Accounting Practices

## 5. Discussion

Changes in management accounting practices are urgently needed by internal company parties as materials for making accurate and accurate decisions in anticipating environmental changes. Relevant and flexible accounting information is required as a material for decision making, especially related to material planning and cost control. The role of the management accounting system is to provide up-to-date information to help managers reach informed economic decisions and to motivate users to direct and strive for organizational change. Failure to rely on appropriate accounting information can contribute to effective resource management and a gradual decline in organizational performance. The integration of traditional accounting techniques with new management accounting techniques can result in a more effective management accounting system (Englund et al., 2013; Tuan Mat et al., 2016). Changes in management accounting practices are a new phenomenon in management accounting, which shows that there is a diversity of applications in each organization/company. This difference is due to the adjustment of changing factors in the environment. Environmental factors, both internal and external, have influenced the latest developments in management accounting practices (Spraaakman, 2006). This indicates that management accounting practices have moved forward and made changes, not only carrying out management accounting functions but taking into account business orientation as material for management decision making in improving company performance (Wahyuni & Triatmanto, 2020). Management accounting practices starting from planning, controlling, and making decisions are instrumental in achieving company goals. Budget planning, profit, production, and strategic planning must be determined at the beginning of the period for future implementation at a certain time. Good planning will lead the company to predetermined targets. Likewise, the control system implemented by the company has an impact on improving performance. In the decision-making process, managers in every department need accurate information from various sources through an effective and efficient corporate accounting system.

## 6. Conclusion

The research results have proven that the success of management accounting practices is caused by the implementation of the right organizational structure and strategy within the company. The areas of expertise, commitment, participation, and existing

human resources are well managed in accordance with the company's vision and mission. The existence of environmental changes requires companies to be able to change management accounting practices through changes in planning, control, cost determination, awarding (evaluation), and decision-making processes by adjusting the environmental conditions in which the company is located. Managers must be responsive to competing companies in terms of products, service to customers, determining costs, and selling prices so that the company can continue to exist. Management accounting practices that can run well will be able to improve company performance.

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