

# MANAGEMENT ACCOUNTING INNOVATION DEVELOPMENT FOR SUSTAINABLE COMPETITIVE ADVANTAGE OF MANUFACTURING BUSINESS IN EASTERN REGION

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## Abstract

The objectives of this research article were 1) to study the management accounting innovations in the manufacturing industry business. 2) To study the sustainable competitive advantage of the manufacturing industry business and 3) to study the relationship of the management accounting innovations with competitive advantage of the manufacturing industry business. The sample group used in this research were 385 business in manufacturing industry in the eastern region. The research tool was a questionnaire. The statistics used to analyze is correlation analysis and multiple regression analysis. The results revealed that management accounting innovation (strategic cost management, management quality control and strategic analysis system) have a significant positive association with sustainable competitive advantage (cost leadership and differentiation). On the other hand, integration performance measurement has no influence on sustainable competitive advantage, management quality control has no influence on differentiation. Theoretical and professional contributions, conclusion and directions for future research were highlighted.

**Keywords:** Management Accounting in Innovation, Integration Performance Measurement, Strategic Cost Management, Management Quality Control, Strategic Analysis System, Sustainable Competitive Advantage

## INTRODUCTION

Organizations are starting to digitize their work processes to be quick and timely. Building a competitive advantage, especially in the industrial sector, requires new innovations to develop the economy by driving innovation (Value Base Economy), shifting from commodity production to technology, creativity and innovation. The changes are evident for the Digital Economy, which can be grouped into three groups: information, intercommunication and technology, which are increasingly playing a role these days. This has resulted in shortening and shortening of work time and processes. Help increase competitive advantage for entrepreneurs. It increases productivity, reduces labor and can reduce human errors as well. Therefore, businesses to be able to create a competitive advantage should focus on doing new things, using knowledge and creativity. To be used to develop the innovation of the organization will enable the organization to create sustainable competitive advantages. (Narinthip, 2020) Nowadays, the manufacturing industry business needs new innovations to create a competitive advantage in the future, and the important thing is information innovation management to take advantage there is a link between workers and various bodies of knowledge within and outside the organization. Management should focus on and support to create more knowledge and new innovations. Management innovation Therefore, it is an

important tool to create competitive advantages and become a market leader in order to increase the opportunity to compete with other countries. Cornell University, in partnership with INSEAD and WIPO, produces a country's innovation capability index and is published in The Global Innovation Index (GII) with an index of innovation capability Infrastructure Information and Communication Technology (ICTs) Innovation Capabilities of Thailand Knowledge building shows a decline in Thailand's competitiveness in innovation from 2017 to 2020. )Global Innovation Index, 2020)

The results of the survey on the scope of implementation of management accounting practices used in major manufacturing companies in Thailand to create business value found that it has received relatively little attention from major manufacturers in Thailand. It has also been found that the new advanced MAP is increasingly being used in large Thai companies, but has not yet reached its peak according to the IFAC culture model, which admits it is still lagging compared to changes in production processes especially in light of increasing global competition. )Terdpaopong et al, 2019) The issues mentioned above Therefore, the researcher is interested in studying the innovation of management accounting that affects the sustainable competitive advantage of the manufacturing industry. The results obtained from the research will be the fundamental guideline of the executives or entrepreneurs as well as the agencies involved. The results of the study can be used as a guideline to use and pay more attention to accounting information in order to manage or create innovations. To lead to sustainable competitive advantages able to compete in the same business nationally and globally.

## **OBJECTIVE**

- 1) To study the development of management accounting innovations in the manufacturing industry business.
- 2) To study the sustainable competitive advantage of the manufacturing industry business.
- 3) To study the relationship of management accounting innovations.

## **LITERATURE REVIEW**

The researcher has compiled important material about concepts and theories from documents and textbooks related to the research papers. "Development of Management Accounting Innovations for Sustainable Competitive Advantages in Manufacturing Businesses in the Eastern Region" can be summarized as follows:

### **Management Accounting Innovations**

Innovative management accounting refers to new methods or techniques in management accounting for the formulation of strategies such as integrated performance measurement, strategic cost management, administrative quality control, strategic analysis system for decision-making, which creates operational quality standards, the reduction of costs, workflow improvements and the ability to prevent problems from errors based on both financial and non-

financial data. Innovative Management Accounting (Nutthanan, 2018) Management techniques were developed from the 19th century to the 20th century. Popular techniques are labor costs and production costs, budgeting cash, income and capital, flexible budgeting, sales projections, standard costs, variance analysis, transfer pricing and performance measurements. After that, an administrative accounting system was born. During the pre-World War I, planning and control procedures were established, but due to the rapid technological and competitive changes of the 1980s, the need for accuracy and new management techniques was needed to provides the organization with the correct information for planning, controlling and making decisions (Askarany, 2015). A method or technique is therefore applied to management accounting. This led to the emergence of new management techniques known as innovation (Rogers, 2003). Therefore, innovation is what happens to the system, programs, policies, processes and plans of an entity while management accounting innovation reflects the progress and direction of management accounting (Prasomtong, 2016).

### **1. Integration Performance Measurement**

Integrated performance measurement refers to the concept of measuring the performance of an organization whether it is consistent with its vision and strategy (Kaplan & Norton, 1996). It consists of four perspectives as follows:

- 1) Financial perspective Focus on the increase in revenue, increase profit. Key metrics such as the increase in revenue or profit from new products or services to total revenue or profit a reduction in cost or an increase in production
- 2) Customer perspective means keeping old customers add new customers customer satisfaction profit per customer market share retain existing customers seek new customers, clearly define customer groups that aim to meet their needs.
- 3) Internal Process Perspectives Inventing new innovations, organizing an efficient organizational structure by coordinating within the organization efficient production management staff skills quality of work Success is measured by the time spent on the process and the quality of the process.
- 4) Perspectives on learning and development there is very important to the future of the organization by focusing on the use of human resources within the organization Information systems and organizational culture.

A study by Lata et al. (2017) suggests that support from senior management organizational learning dynamics a good management accounting system and the intensity of the competitive environment are key factors that positively affect the integrated performance measurement system strategy both theoretical and practical benefits

### **2. Strategic Cost Management**

Strategic cost management refers to the process of formulating strategies is analyzed to present cost information Cost data must be critical to strategic decision-making. Be able to implement strategies and assess the strategy of the entity for maximum benefit have a competitive advantage Achieve goals and achieve long-term sustainable growth (Chalit, 2019) by using the

concept of management cost accounting. It has two objectives: decision-making and cost management to be effective. Executives should consider the planning process, implementing lower cost management, as well as maintaining quality in the production of products. By using new technology to produce products to be used as a decision-making tool in accordance with the changing competitive market conditions.

Thapayom (2021) found that strategic cost management was associated with competitive advantage. It is recommended that business executives be aware of the approaches and methods for applying strategic cost management utilization. To build decision-making quality and competitive advantage make profitability and achieve corporate sustainability.

### **3. Quality Control Management**

Administrative quality control refers to the effective management of various operational processes throughout the organization. (busara et al., 2014) with the use of accounting information for strategic planning, financial forecasting, budgeting, objective management, operational management techniques and management information system. Examine activities within the organization if administrative controls are effective. Executives will be able to see the irregularities in the organization and can prevent the impact on the business in a timely manner create a competitive advantage.

A study by Busara et al. (2011) found that the efficiency of the administrative control system there is related to being competitive. Industrial business executives should focus on a system of administrative quality control. In order to affect the ability to compete, make the organization more efficient and effective with stronger potential than competitors in the same business.

### **4. Strategic Analysis System**

Strategic Analysis System refers to the presentation of information for use in executive decision-making (Science, 2017). Organizational environment analysis, factors of the external environment and factors of the internal environment that affect and influence both directly and indirectly on the management of the organization. Although the environment around the organization is constantly changing. But the results of the analysis will help determine the direction of organizational management to be effective.

Nattaphan (2009) Strategy Analysis, there is an important tool for managers to analyze factors affecting opportunities and limitations or obstacles to management. Analysis of the internal and external environment Analysis of factors affecting the strengths and weaknesses of the organization have a strategy Implementation of strategic plans, monitoring, controlling and evaluating the performance of the organization.

Thapayom (2019) found that performance measurement and strategic control, it has a positive correlation with sustainable competitiveness and corporate performance. Advice executives on the need to develop, implement and improve strategic planning, control, and performance measurement. To build the competitiveness of the organization and create sustainable

performance of the organization in the proper use of valuable resources. Therefore, the assumptions can be made as follows:

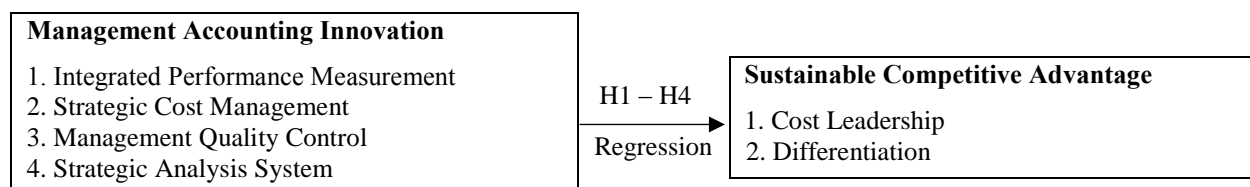
Hypothesis 1: Integrated performance measurement has a positive impact on sustainable competitive advantage of the manufacturing industry in the Eastern Region.

Hypothesis 2: Strategic cost management has a positive impact on sustainable competitive advantage of the manufacturing business in the Eastern Region.

Hypothesis 3: Administrative quality control has a positive impact on sustainable competitive advantage of the manufacturing business in the Eastern Region.

Hypothesis 4: The strategic analysis system has a positive impact on sustainable competitive advantage of the manufacturing business in the Eastern Region.

### Conceptual Framework



**Figure 1: Research Conceptual Framework**

### Methods of conducting research

This research is a quantitative research to study the development of management accounting innovation for sustainable competitive advantage of manufacturing industry business in the Eastern Region from the stated research objectives. The researcher proceeded with the following steps:

#### 1. Population and sample

The population used in this research was the Accounting Director, Account Manager Chief Accountant in Manufacturing Business Eastern region of 10,069 enterprises (Department of Industrial Works, 2021). The sample size was 385 enterprises, derived from formula calculations according to Yamane's method (1973) at 95% confidence level and an error of not more than 5%.

#### 2. Research tools

The researcher has defined the characteristics of research tools and the creation of research tools as follows:

part 1 Questionnaire about the general status of the business. The nature of the questionnaire was a check-list of 7 items.

part 2 Questionnaire about the general status of the respondents. The nature of the questionnaire is a check-list of 5 items.

part 3 Questionnaire on Management Accounting Innovations. The questionnaire was a Rating Scale with 17 criteria to determine the weight of the assessment as 5 levels according to the Likert Scale.

The score weight of the answer option level

Minimum is set to be equal to 1 point.

Low is set to be equal to 2 points.

Medium is set to be equal of 3 points.

A lot is set to be equal to 4 points.

The maximum is set to be equal to 5 points.

Interpretation Criteria for Rating Average Rating, there is defined as the score range as follows:

Average score 1.00 – 1.49	means that the least opinion.
Average score 1.50 – 2.49	means that there are few opinions.
Average score 2.50 – 3.49	means that the moderate opinion.
Average score 3.50 – 4.49	means that there are many opinions.
Average score 4.50 – 5.00	means that the most opinions.

Part 4 Questionnaire on Sustainable Competitive Advantage of Manufacturing Business The questionnaire was a Rating Scale with 10 criteria for determining the weight of the assessment according to the Likert Scale (Thanin, 2020) as in Part 3.

Part 5 Questionnaire on Comments and Other Suggestions on Innovation Management Account The questionnaire is an open-ended type of 1 item.

### **3. Quality of research instruments**

The researcher tested the accuracy and the discriminant power by testing content accuracy Reviewed by experts and the reliability test of the questionnaire (Reliability Test) using the Alpha Coefficient Method according to Cronbach's method, from Table 1, it was found that the alpha coefficient was in the range of 0.724 – 0.904, which corresponds to (Hair et al., 2010) indicating that the alpha coefficient should be greater than 0.70 is an acceptable value. Discriminant power was determined using Correlated Item-Total Correlation values. The results showed that the discriminant value ranged from 0.432 – 0.865. The discriminant power was not should be lower than 0.30 (Thanin, 2020).

In addition, the researcher used Confirmatory Factor Analysis: CFA technique to examine the relationship of each factor and the relationship of each variable by considering Factor Loading, which is a coefficient showing the relationship between the original variable and each factor considered. The factor weight must be greater than 0.40 (Nunnally & Bernstein, 1994). The factor weight is between 0.674 – 0.925, which corresponds to the specified criteria.



**Table 1 :Results of quality testing of research instruments**

Variable	Factor Loadings	Item-total correlation	Cronbach's Alpha
Integrated performance measurement	0.773 - 0.812	0.592 – 0.646	0.800
Strategic cost management	0.696 – 0.849	0.475 – 0.684	0.766
Administrative quality control	0.677 – 0.827	0.526 – 0.739	0.824
Strategic analysis system	0.674 – 0.786	0.432 – 0.587	0.724
Cost leadership	0.797 – 0.901	0.691 – 0.832	0.904
Differentiation	0.739 – 0.925	0.609 – 0.865	0.890

#### 4. Methods of collecting information

The researcher conducted data collection in 3 steps.

- 1) The researcher has contacted the manufacturing industry entrepreneurs in the Eastern Region by sending E-mail and google form.
- 2) The end of 6 weeks, if the questionnaire returned is not complete according to the number of samples. The researcher will resubmit the questionnaire to the sample who have not answered the questionnaire via electronic mail for further notification and request for assistance.
- 3) Bring the questionnaire back to check the integrity of the questionnaire and code it to use for further statistical analysis with computer tools

#### 5. Data analysis

- 1) Information about the general status of the business and the general status of the respondents using the frequency method then sum it up as a percentage.
- 2) Information on innovations in management accounting and competitive advantages Use the mean and standard deviation method.
- 3) Calculation of information on innovative approaches to management accounting classified by the general status of the business size in the form of operation. The length of time of operation and the technology that supports the organization by using the two-way discriminant mean.
- 4) Analyze the relationship between management accounting innovation and sustainable competitive advantage by finding the Pearson correlation coefficient.
- 5) Hypothesis test, the impact of management accounting innovation and sustainable competitive advantage is Multiple Regression Analysis, with the control variables being the registered capital of the business and the period of operation of the business. The equation can be expressed as follows.

**Equation 1:**  $SCA = \alpha_1 + \beta_1IPM + \beta_2SCM + \beta_3MQC + \beta_4SAS + \beta_5\text{Firm Age} + \beta_6\text{Firm Size} + \varepsilon_1$

**Equation 2:**  $CLS = \alpha_2 + \beta_7IPM + \beta_8SCM + \beta_9MQC + \beta_{10}SAS + \beta_{11}Firm\ Age + \beta_{12}Firm\ Size + \varepsilon_2$

**Equation 3:**  $DFT = \alpha_3 + \beta_{13}IPM + \beta_{14}SCM + \beta_{15}MQC + \beta_{16}SAS + \beta_{17}Firm\ Age + \beta_{18}Firm\ Size + \varepsilon_3$

### Initial

IPM	stands for Integrated Performance Measurement.
SCM	stands for Strategic Cost Management.
MQC	stands for Administrative Quality Control.
SAS	stands for Strategic Analysis System.
CLS	stands for Cost Leadership.
DFT	stands for Differentiation.
MAI	stands for Innovative Management Accounting.
SCA	means for Sustainable Competitive Advantage
Firm Age	means the period of operation of the business.
Firm Size	means the size of the business.

## SUMMARY OF RESEARCH RESULTS

### 1. Accounting for Management Innovation

The examination of the average degree of views about general management accounting innovation was extremely critical. There is a high level of opinion, with an average of 4.25 for each area, including integrated performance assessment; there is a lot of disagreement, with an average of 4.30 in management quality control. There is a great deal of disagreement with a score of 4.25 on the strategic analysis system there is a great deal of disagreement. The mean is 4.21, as indicated in Table 2.

**Table 2: Mean and Standard Deviation of Management Accounting Innovation Opinion Level**

Management accounting innovation	$\bar{x}$	S.D.	Opinion Level
Innovation in management accounting (overview)	4.25	0.40	High level
Management accounting innovation	4.25	0.50	High level
Strategic cost management	4.30	0.47	High level
Administrative quality control	4.25	0.44	High level
Strategic analysis system	4.21	0.43	High level

### 2. Sustainable Competitive Advantage

Analysis of average and opinion levels on sustainable competitive advantage found that opinion levels on sustainable competitive advantage Overall, the overall picture is very



criterion with an average of 4.14 cost leadership There is a high level of opinion with a mean of 4.17 and differentiation There is a high level of opinion. The mean is 4.11 as shown in Table 3.

**Table 3: Mean and Standard Deviation of Sustainable Competitive Advantage**

Competitive advantage	$\bar{x}$	S.D.	Opinion Level
Sustainable competitive advantage	4.14	0.37	High level
Cost leadership	4.17	0.45	High level
Differentiation	4.11	0.41	High level

### 3. Correlation Analysis

The results of the correlation coefficient analysis between management accounting innovation and sustainable competitive advantage according to Table 4 showed that each aspect of management accounting innovation had a positive correlation to the competitive advantage action strategic cost management quality control Strategic Analysis System at a statistically significant level of by innovation in management accounting There was a relationship with the strategic analysis system ( $r = 0.703$ ), followed by strategic cost management ( $r = 0.660$ ), management quality control ( $r = 0.655$ ), and performance measurement. Integrated work ( $r = 0.597$ ), respectively, as in Table 4.

**Table 4 Analysis of the correlation coefficient between management accounting innovation and competitive advantage.**

Variable	IPM	SCM	MQC	SAS	CLS	DFT	VIF
IPM	1						2.492
SCM	0.712**	1					3.339
MQC	0.727**	0.787**	1				3.331
SAS	0.644**	0.729**	0.715**	1			2.469
CLS	0.597**	0.660**	0.655**	0.703**	1		
DFT	0.184**	0.325**	0.266**	0.368**	0.496**	1	

\* The statistically significant at the 0.05 level, \*\* The statistically significant at the 0.01 level

The problem Multicollinearity test between the independent variables which consist of Management accounting innovation Integrated performance measurement strategic cost management Administrative quality control and strategic analysis systems, there was found that there was a positive correlation at a statistically significant level of 0.01 with a Variance Inflation Factor (VIF) between 2.469–3.339 ( $VIF < 10$ ), indicating that the relationship of the independent variables did not cause problems with the relationship model.

### 4. Multiple Regression Analysis

Testing the relationship of management accounting innovations to competitive advantages (Table 5) found that Management accounting innovation variables. The integrated performance measure (IPM) was  $\beta_1 = 0.052$  and p-value greater than 0.05 showed that Management accounting innovation Integrated performance measurement There was no positive impact on

competitive advantage at the statistically significant level of 0.05 and therefore was inconsistent with hypothesis 1.

Management accounting innovation variables Strategic cost management (SCM) values  $\beta_2 = 0.225$  and p-value less than 0.01 showed that Management accounting innovation strategic cost management. It had a positive impact on competitive advantage at a statistically significant level of 0.01, therefore consistent with hypothesis 2.

Management accounting innovation variables in terms of administrative quality control (MQC),  $\beta_3 = 0.144$  and p-value less than 0.05 showed that Management accounting innovation management quality control had a positive impact on competitive advantage at a statistically significant level of 0.05, therefore consistent with hypothesis 3.

Management accounting innovation variables. The Strategic Analysis System (SAS) value of  $\beta_4 = 0.381$  and p-value less than 0.01 showed that Management accounting innovation Strategic Analysis System. It had a positive impact on competitive advantage at a statistically significant level of 0.01, therefore consistent with hypothesis 4.

**Table 5: Analysis of multiple regression equations to test the relationship between management accounting innovation and competitive advantage**

Independent Variables	Dependent Variables		
	Sustainable Competitive Equation 1	Cost Leadership Equation 2	Differentiation Equation 3
Constant ( $\alpha$ )	-0.020 (0.063)	-0.018 (0.062)	-0.119 (0.085)
Integrated Performance Measurement (IPM)(H6)	0.052 (0.054)	0.106* (0.053)	-0.153* (0.073)
Strategic Cost Management (SCM) (H7)	0.225** (0.062)	0.157* (0.061)	0.194* (0.085)
Administrative Quality Control (MQC) (H8)	0.144* (0.062)	0.162** (0.061)	-0.030 (0.085)
Strategic Analysis System (SAS) (H9)	0.381** (0.054)	0.394** (0.053)	0.334** (0.073)
Operating period (Firm Age)	0.127 (0.074)	0.123 (0.073)	0.287** (0.100)
Registered Capital (Firm Size)	-0.256** (0.079)	-0.253** (0.077)	-0.285** (0.107)
Adj. R <sup>2</sup>	0.560	0.567	0.176
Max VIF	3.339	3.339	3.339

\* The statistically significant at the 0.05 level, \*\* The statistically significant at the 0.01 level.

## DISCUSSION OF RESEARCH RESULTS

Innovations in Management Accounting and their Influence on Competitive Advantage. According to the findings, management accounting is strategic cost management. Systems for administrative quality control and strategic analysis. It has a favourable effect on the manufacturing industry's total competitive edge. The statistical significance at the 0.05 and

0.01 level is consistent with Pattriya's (2018) assertion that management should assess management accounting outcomes, predict and choose. To successfully create a competitive edge assist management in making choices by providing accurate, full, and timely information in terms of strategic cost. Administrative quality control strategic decision competitor evaluation assessing customers in business organization management.

The findings demonstrated that strategic cost accounting management there are positively influences the competitive edge. Control should thus prioritize strategic cost management because it will boost competitiveness by enhancing cost management efficiency. There is advantageous for the industrial sector. Consistent with the findings of Thapayom's (2002) study, Strategic Cost Management there was a link between decision quality and effectiveness competitive advantage enhance profitability and company viability.

The outcomes demonstrated management accounting quality control there are positively influences the competitive edge. Therefore, the management should pay greater attention to the management's quality control since it will facilitate the procedure Policy Effective Compliance Promotion organizational structure Consistent with Kanthana's study (2015), indicated that the quality of management accounting data influences planning, budgeting, operations and decision-making processes in company. Reduce the expense of waste. The efficient use of resources, boost production, to build a long-term competitive edge.

The findings indicated that Executive Accounting Strategic Analysis System there are positively influences competitive advantage. Management should thus concentrate on strategic analysis. Because it will be able to decide the organization's path to put the plan into effect and rigorously manage the organization's performance. According to Thanniti's study (2020), Strategic Analysis favourably impacts an organization's competitiveness. There must be a series of processes that adhere to the criteria. Including the working style of CEOs in organizational planning, decision making, issue solving, and connection development with workers. Motivates the organization's competition to be superior to rivals expand market share Profit enhancement is contingent on sales growth, brand image, cost reduction, and decreasing expenses. Integrated performance assessment does not have a favourable effect on total competitive advantage, according to the findings of the study demonstrates that many organizations do not match their historical accounting data to their operational performance. Does not emphasize internal and external evaluations. Consequently, integrated performance measurement has no bearing on competitive advantage. The inclusion of management quality control has no effect on the distinction as a result of the fact that many businesses do not prioritize differentiating their goods, styles, and customer service. However, concentrating on manufacturing process, system development, and prompt delivery consequently, the management quality control has no effect on the disparity.

## **CONCLUSION/RECOMMENDATION**

According to the findings of the study, management accounting innovation has an effect on competitive advantage. Management should thus prioritize and encourage the utilization of information from different sources in internal and external evaluations. There is necessary to

offer management accounting information with qualitative features and should inspire workers to do their tasks by recognizing the significance of information. For the advantage of being utilized in business organizations this will assist CEOs forecast the result and establish a competitive edge. included evaluating the expenses of rivals and those that will occur in the future Focus on precisely outlining the organization's strategies, policies, and objectives in order to help the identification of the company' competitive strategic position. Including developing incentives for innovation growth inside the firm and arranging human resource development plans by seeking external assistance, such as government assistance. It will facilitate access to finance for innovation development. To keep up with the developments in the current period, promote greater understanding of innovation or technology and it results in long-term competitive advantage and aids in managerial decision-making.

### **FUTURE RESEARCH SUGGESTIONS**

- 1) Because this research focuses on management accounting innovation and the competitive advantage of manufacturing businesses. Future study may broaden the reach to include more varied sample groups, such as those from different areas, rather than only in the Eastern Region or other nations future study may employ additional samples, connected parties, such as corporations listed on the Thai Stock Exchange, and so on, to demonstrate more diverse viewpoints.
- 2) This data was gathered by random sampling. As a result, more study may be undertaken in the form of provinces and company types. Which may be capable of processing each business's data for further investigation.
- 3) This investigation there is a quantitative study that use questionnaires. (Questionnaires) are a kind of data collection instrument. Additional frameworks from other aspects, such as in-depth interviews, should be examined in future research. To investigate the evolution of management accounting innovations that impact the manufacturing industry's competitive advantage straight from the operator.
- 4) This investigation Using Multiple Regression Analysis, put the hypothesis to the test. Other methodologies, such as Structural Equation Modeling (SEM) or PATH Analysis, may be used in future study to lead research on future management accounting advances.

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