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# Strategies for achieving sustainable competitive advantage through innovative management accounting in manufacturing

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### **Abstract**

The objectives of this research article were 1) 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 correlation analysis multiple and

regression analysis. The results revealed that accounting innovation management (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**: Strategies, Achieving Sustainable Competitive, Management Accounting

#### 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). In an era marked by increasing global competition and growing environmental concerns, businesses must evolve to not only thrive but also contribute positively to the world around them. Manufacturing businesses, in particular, find themselves at the intersection of these challenges and opportunities. The Eastern region, characterized by its unique economic, social, and environmental dynamics, presents a compelling backdrop for exploring the transformational potential of management accounting innovation in achieving sustainable competitive advantage. Management accounting, traditionally regarded as the process of collecting, analyzing, and interpreting financial information for internal decision-making, has evolved significantly over the years. In today's context, it serves as a strategic tool that extends beyond financial data to encompass broader sustainability concerns. Sustainability, in this context, refers to a multifaceted approach that addresses economic, environmental, and social aspects of business operations. This research endeavors to delve into the nuanced synergy between management accounting innovation and sustainability within the context of manufacturing enterprises operating in the Eastern region. The Eastern region, known for its diverse economic landscapes, ranging from heavy industrialization to emerging markets, is uniquely poised to benefit from innovative management accounting practices that can align profitability with responsible business practices. The central thesis of this research is that by harnessing advanced management accounting practices tailored to the specific needs of the Eastern region, manufacturing businesses can not only gain a competitive edge but also make substantial contributions to sustainable development. This thesis is rooted in the understanding that sustainability is not merely an ethical obligation but an opportunity for strategic growth and resilience. 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. The objective of this research about to study the development of management accounting innovations in the manufacturing industry business. To study the sustainable competitive advantage of the manufacturing industry business. 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. Advise executives on the need to develop, implement and improve strategic planning, control, 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:

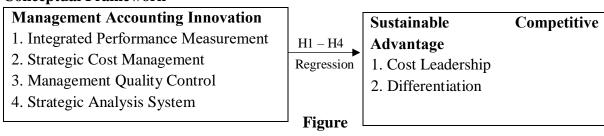
Hypothesis 1: Integrated performance measurement has a positive impact on sustainable competitive advantage of the manufacturing industry in the Eastern Region.

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 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**



1 Research Conceptual Framework

## Methods of conducting research

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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. 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	Item-total	Cronbach's
	Loadings	correlation	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

#### 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	X	S.D.	<b>Opinion Level</b>
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

The data reveals a remarkable consensus and high regard for management accounting innovation within organizations. Across various dimensions such as innovation in management accounting overview, management accounting innovation itself, strategic cost management, administrative quality control, and the strategic analysis system, respondents consistently express strong support. The average ratings, all surpassing 4.20, along with relatively low standard deviations, signify a shared belief in the significance of these innovations. This collective sentiment underscores the pivotal role that management accounting innovations play in modern business practices. They are perceived not only as essential tools but also as catalysts for achieving operational excellence, cost-effectiveness, and strategic alignment. The alignment with innovative management accounting practices reflects a progressive and forward-thinking approach to financial and operational management, highlighting their instrumental role in shaping and optimizing organizational strategies.

### 2. Sustainable Competitive Advantage

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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	X	S.D.	<b>Opinion Level</b>
Sustainable competitive advantage	4.14	0.37	High level
Cost leadership	4.17	0.45	High level
Differentiation	4.11	0.41	High level

The data analysis reveals a strong consensus among respondents regarding the paramount importance of various dimensions of competitive advantage. Sustainable competitive advantage emerges as a key driver, with an average rating of 4.14 and a remarkably low standard deviation

of 0.37. This suggests a high level of agreement among participants about the critical role of long-term sustainable strategies in achieving a competitive edge. Equally notable is the assessment of cost leadership, which garnered an average rating of 4.17, though with a slightly higher standard deviation of 0.45. The consensus on cost leadership underscores its significance as a competitive strategy while acknowledging a relatively broader range of opinions among respondents. Furthermore, differentiation is viewed favorably, with an average rating of 4.11 and a standard deviation of 0.41. This reinforces the widespread belief in the role of differentiation in setting a company apart from competitors, and the relatively low standard deviation suggests a strong consensus on its importance.

#### 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	

<sup>\*</sup> 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

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In Table 5, the analysis of the relationship between management accounting innovations and competitive advantages reveals noteworthy findings: Integrated Performance Measurement (IPM):

The coefficient (\beta(1)) for integrated performance measurement was 0.052, and the associated pvalue was greater than 0.05. This implies that there was no statistically significant positive impact of integrated performance measurement on competitive advantage at the 0.05 significance level. Therefore, this result contradicts hypothesis 1, suggesting that integrated performance measurement did not have a significant influence on competitive advantage. Strategic Cost Management (SCM): The coefficient (β2) for strategic cost management was 0.225, and the associated p-value was less than 0.01. This indicates that strategic cost management had a statistically significant positive impact on competitive advantage at the 0.01 significance level. Consequently, this result aligns with hypothesis 2, confirming that strategic cost management had a significant and positive influence on competitive advantage. Administrative Quality Control (MQC): The coefficient (β3) for administrative quality control was 0.144, and the associated pvalue was less than 0.05. This suggests that management accounting innovation related to administrative quality control had a statistically significant positive impact on competitive advantage at the 0.05 significance level. Thus, this outcome supports hypothesis 3, indicating that administrative quality control positively affected competitive advantage. Strategic Analysis System (SAS): The coefficient (β4) for the Strategic Analysis System was 0.381, and the associated p-value was less than 0.01. This implies that the management accounting innovation related to the Strategic Analysis System had a statistically significant positive impact on competitive advantage at the 0.01 significance level. Hence, this result confirms hypothesis 4, demonstrating that the Strategic Analysis System had a significant and positive influence on competitive advantage. In summary, the analysis suggests that while integrated performance measurement did not significantly impact competitive advantage, management accounting innovations related to strategic cost management, administrative quality control, and the Strategic Analysis System had statistically significant and positive effects on competitive advantage. These findings provide valuable insights into the relationship between specific management accounting innovations and their impact on a firm's competitive position, contributing to a better understanding of how strategic financial practices can enhance competitiveness.

### **CONCLUSION**

Achieving sustainable competitive advantage in manufacturing through innovative management accounting involves several key strategies. Firstly, adopting advanced costing methods like Activity-Based Costing (ABC) allows for accurate cost allocation and identifies areas for efficiency improvement. Implementing Lean and Six Sigma principles streamlines processes, minimizing waste and enhancing overall efficiency. Strategic costing, including the use of target costing and value chain analysis, ensures that product prices are competitive while maintaining quality. Effective performance measurement through Key Performance Indicators (KPIs) and balanced scorecards provides a comprehensive view of organizational health. Integrating technology, such as advanced cost accounting systems and emerging technologies like AI and data analytics, ensures real-time and accurate data for decision-making. Risk management, including scenario planning, helps anticipate and mitigate uncertainties associated with manufacturing

operations. Customer profitability analysis informs marketing and sales strategies, focusing on high-value customers and products. Investing strategically in innovation and Research & Development (R&D) contributes to product differentiation and market leadership. Environmental and social responsibility are integrated into management accounting practices, aligning with the growing importance of sustainable practices. Employee involvement in decision-making processes fosters a culture of continuous improvement and innovation. Training on new management accounting techniques ensures teams are well-equipped to adapt to changing business environments. Collaboration with suppliers and partners optimizes the entire supply chain, reducing overall costs and increasing competitiveness. Flexible budgeting and forecasting models enable quick adaptation to changing market conditions. Regularly reviewing and updating budget assumptions based on market trends and competitive intelligence ensures relevance. In summary, these strategies, ranging from advanced costing methods to embracing innovation and sustainability, collectively contribute to achieving sustainable competitive advantage through innovative management accounting in manufacturing.

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