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Enhancing inventory efficiency: the role of Strategic Management Accounting and Integrated Management Accounting Information systems

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ABSTRACT

This study explores how strategic management accounting (SMA) and Management Accounting Information System (MAIS) are used in inventory management and their impact on efficiency. This study involved 114 café and restaurant managers in Bandung, Indonesia as the sample. Data were analysed with PLS software, revealing that SMA and MAIS positively affect managerial efficiency. However, this study found that not all cafés and restaurants implement these systems effectively due to poor integration of SMA and MAIS indicators. This research highlights that effective use of SMA and MAIS significantly improves inventory management by providing accurate and timely information, which supports better decision-making and improves business performance. SMA is particularly useful for understanding market trends and competitors' costs, thus simplifying inventory management. This study introduces a new approach to managing stock quantities, leading to improved operational efficiency and competitive advantage. In addition, the study also emphasises the importance of risk assessment and technology in inventory management for more precise measurement and better management practices.

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1. Introduction

Businesses must continuously improve the effectiveness and efficiency of their operations in the era of globalisation and intensifying competition. Inventory management is a critical component of business operations as it plays a major role in maintaining customer satisfaction and the efficiency of manufacturing and distribution processes. Various problems, including overstocking and understocking, higher storage costs, and poorer customer service, can result from poorly managed inventory (Chopra & Meindl, 2016).

The ability of any business to survive and thrive relies heavily on its inventory as poor inventory management practices can result in loss of clients and decreased revenue. Coordinating the availability, utilisation, control, and procurement of materials is part of inventory control. Getting the right inventory in the right place, at the right time, and in the right quantity is the main objective of inventory control, which is the culmination of various measures. Moreover, it is closely linked to the production function of an organisation, which means that the inventory management system will directly or indirectly impact the profitability of the organisation (Khan & Siddiqui, 2019). Effective inventory management impacts

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competitive advantage and plays a role in reducing costs, optimising operations, and ensuring business profitability (Hugos, 2018). Effective inventory management is needed to optimise online sales activities. One of the objectives of inventory management is to ensure that sales reports are available in an accurate, reliable and timely manner and to ensure the availability of up-to-date merchandise inventory status information for customers and other users. Inventory management is also proven to be able to assist companies in compiling and collecting information related to company transactions that can indirectly be carried out properly.

The current research outline focuses on Panigrahi et al. (2024), who examined how inventory management practices affect the operational performance of SMEs. Practices such as capacity utilisation, inventory accuracy, and lean inventory methods were shown to improve performance by reducing excess stock and minimising stock-outs. This study explores how SMEs can improve their operational performance through better inventory management practices. By focusing on key practices such as inventory accuracy and lean methods, SMEs can achieve better results. The SMEs in question are SMEs engaged in the café and restaurant industry in the city of Bandung. The café and restaurant business in the city of Bandung is currently still dominated by small and medium enterprises. The characteristics of the Café and Restaurant Business use various types of inventory in its work operations. Therefore, good inventory management is needed so that the company's operations can run smoothly and be able to determine the cost of goods produced accurately. The SMEs intended by the author refer to SMEs engaged in the café and restaurant industry in the city of Bandung which are still dominated by small and medium enterprises. Café and restaurant businesses are characterised by the use of various types of inventory in their business operations. Therefore, good inventory management is needed so that the company's operations can run smoothly and can accurately determine the cost of goods produced. In addition, a study conducted by Hansen et al. (2023), this research emphasises the importance of understanding market and supply chain factors that affect inventory levels. This research presents a framework for evaluating these factors, which can help supply chain managers optimise inventory levels by considering variables such as demand volatility and customer orientation. In addition, Albayrak Ünal et al. (2023) reviewed how AI applications, including machine learning and reinforcement learning, improve inventory management by increasing the accuracy of demand forecasting and optimising inventory control. AI integration leads to real-time data processing and better decision-making, which significantly improves operational efficiency. This study provides a comprehensive review of AI applications in inventory management, highlighting the role of machine learning and other AI technologies in improving inventory forecasting and control. The findings show that AI can significantly reduce costs and improve efficiency by providing accurate, real-time data for inventory decisions.

In relation to the SME café and restaurant industry in Bandung city to improve their operational performance through better inventory management practices, the author tries to implement the use of Strategic Management Accounting and Integrated Management Accounting Information System. The use of SMA in inventory management includes several methods and instruments, including budgeting, balanced scorecard, and cost analysis. These methods help businesses to plan, manage, and assess inventory more effectively, which can improve the operational and financial performance of the business. In addition, necessary for the success of these applications is a reliable management accounting information system (Coad & Glyptis, 2014). The application of SMA in inventory management is not always easy, regardless of the benefits that may be gained. Companies sometimes face various problems, including strong resistance to change, lack of resources, and difficulty integrating SMA with current management systems. The use of strategic management accounting is essential for inventory management as it offers valuable understanding of cost trends, consumer demand patterns, and supply chain effectiveness. By using methods such as target costing and activity-based costing, SMA helps businesses maximise inventory levels, save on storage costs, and improve overall operational effectiveness. By understanding the influence of SMA on inventory management, it is hoped that companies can optimise the use of SMA to improve the efficiency and effectiveness of inventory management. In addition, this research is also expected to provide insights for practitioners and academics in developing more effective strategies and methods for implementing SMA in inventory management.

In addition, the use of technology in business is a strategy to thrive in the face of intense global competition and plays an important role in increasing the market share of goods and services produced.

MAIS is a special type of IT system designed to support the management accounting function by providing accurate, timely, and relevant financial and non-financial information for decision making. The integration of MAIS with IT enhances its capabilities, making it an essential part of modern accounting and financial management practices (Chapman & Kihn, 2009). By utilising IT, MAIS provides sophisticated analysis, streamlines accounting processes, and supports strategic management functions (Gil, 2004). Management Accounting Information Systems play an important role in inventory management by providing detailed reports and analyses on inventory levels, turnover rates, and cost of goods sold. This information enables managers to make informed decisions about purchasing, production scheduling, and inventory control, leading to reduced stock-outs and improved inventory turns (Romney & Steinbart, 2018). MAIS application refers to the concept of harmonious integration between its components. Harmonious integration will produce financial applications that provide user satisfaction and produce various important information such as customer data, suppliers, product orders, inventory, prices, to daily sales data more accurately and quickly.

Given the importance of effective inventory management highlighted in the introduction, there is a significant research gap in exploring the interaction between inventory management practices and the application of technological advances in small and medium-sized enterprises (SMEs). While there is literature on how practices such as inventory accuracy and lean methods can improve operational performance, there is little understanding of how these practices are integrated with advanced technologies such as AI and Management Accounting Information Systems (MAIS) in the context of SMEs. Further research could focus on assessing the barriers to technology adoption in inventory management and the specific impact of such integration on the operational and financial performance of SMEs. This can provide valuable insights into how SMEs can overcome technological and managerial challenges to improve their competitiveness and sustainability in the global market.

The urgency of this research will bring a positive contribution in overcoming managerial constraints in small and medium enterprises through efforts to improve inventory control and the implementation of information technology in business processes through the use of financial applications that will encourage company management to be more effective and efficient. Related to the urgency of this research, the purpose of this research is to examine the effect of inventory control and the quality of financial applications on sales effectiveness in small and medium enterprises. This research is important to do considering that research topics relevant to this research are still rarely tested in small and medium enterprises. It is hoped that the results of this study can make an important contribution in improving the sustainability of small and medium enterprises in Indonesia.

2. Literature review

2.1. Strategic management accounting (SMA)

Strategic Management Accounting (SMA) is a management accounting approach that combines financial and non-financial information with business strategy to support better long-term decision making. SMA not only focuses on internal costs and performance measurement, but also considers external factors such as market conditions, competition, and industry trends to help organisations achieve sustainable competitive advantage (Nixon & Burns, 2012). SMA integrates management accounting with strategic business management, focusing on external market conditions and internal operational processes. Its main objective is to provide relevant financial and non-financial information to support strategic decision-making and improve organisational performance (Coad & Glyptis, 2014).

Strategic Management Accounting (SMA) has emerged as an important aspect of modern management practice, aligning financial information with strategic business objectives. Several literature reviews explored the impact of SMA on inventory management, an area that is critical to operational efficiency and cost control. This review covers various dimensions including globalisation, technology, sustainability, and the COVID-19 pandemic, integrating insights from relevant studies and theoretical frameworks. SMA integrates management accounting with business strategy, aiming to provide managers with relevant information for decision-making. According to Langfield-Smith (2008), SMA involves using management accounting information to develop and monitor business strategies. This includes techniques such as

Activity-Based Costing (ABC), Balanced Scorecard, and Target Costing, which assist in strategic planning and performance measurement.

The dimensions and indicators of SMA success may vary, depending on the research approach and focus or the management practices applied. Below are some common dimensions and indicators that can be used to measure SMA success:

1. Integration with Business Strategy. The degree of linkage between accounting practices and the strategic objectives and long-term vision of the company (Bhimani & Bromwich, 2009).
2. Use of Information Technology. Effectiveness and integration of accounting information systems that support cost analysis, forecasting and strategic decision making (Langfield-Smith et al., 2012).
3. Information Quality and Accuracy. The level of accuracy, relevance and availability of accounting information for managerial decision making (Otley, 2016).
4. Improving Financial Performance. The impact of SMA on profitability, cost reduction, or increasing the company's ROI (Kaplan & Atkinson, 2020).

SMA plays an important role in inventory management by providing accurate cost data and inventory reports. The system helps managers maintain optimal inventory levels, minimise excess inventory, and improve cash flow through better inventory control (Wild et al., 2018). These statements indicate that MAS has a significant impact on inventory management by providing accurate, timely, and relevant data. With the information provided by MAS, managers can make better decisions regarding inventory control, optimise inventory levels, and reduce costs associated with storing and managing inventory.

2.2. Management accounting information system (MAIS)

A management accounting information system (MAIS) is a system that provides managers with financial and non-financial information to assist them in making business decisions. This system includes collecting, storing and processing financial data, and reporting this information to internal management (Romney & Steinbart, 2018). The definition is elaborated by Atkinson et al. (2021) that management accounting information systems are designed to provide information used for internal decision making. This system produces reports tailored to management needs, with a focus on budgeting, performance evaluation, cost management, and asset management.

In addition, Turner et al. (2017) state that a management accounting information system is an integrated framework used to collect, process, and report financial information to support management's decision-making process. It emphasises the use of financial and non-financial data to assist in planning, controlling, and evaluating business operations. It can be said that MAIS is an integral part of modern business management, providing critical insights that drive strategic decisions and operational improvements.

To measure the effectiveness of a Management Accounting Information System (MAIS), several qualitative and quantitative criteria can be used. These criteria ensure that the system supports managerial decision-making, improves organisational performance, and is aligned with strategic objectives. Here are some approaches to measuring effectiveness reference:

1. Information Quality. Assess the accuracy, relevance, timeliness, and completeness of the information provided by the MAIS (Romney & Steinbart, 2018; Turner et al., 2017).
2. User Satisfaction. Evaluate the level of user (managers and other stakeholders) satisfaction with ease of use, functionality, and system support services. (Atkinson et al., 2021)
3. Decision Support. Measures how effectively MAIS supports the managerial decision-making process, including the quality of insights and speed of access to required data (Atkinson et al., 2021; Vandeput, 2020).
4. System Reliability and Performance. Assess the reliability of the system, including uptime, error rate, and speed of data processing and report generation performance (Romney & Steinbart, 2018; Turner et al., 2017).
5. Cost-Benefit Analysis. Evaluates the financial impact of the MAIS by comparing the costs of implementation and maintenance with the benefits gained in terms of improved decision-making and efficiency (Atkinson et al., 2021).

6. Integration with Other Systems. Assess how effectively the MAIS integrates with other information systems within the organisation, such as ERP systems, to provide a smooth flow of information (Romney & Steinbart, 2018; Turner et al., 2017).
7. Flexibility and Scalability. Evaluate the system's ability to adapt to changing business needs and scale as the organisation grows (Atkinson et al., 2021; Vandeput, 2020).

Using these criteria, organisations can comprehensively measure the effectiveness of their Management Accounting Information System and identify areas for improvement to ensure that the system delivers maximum value.

2.3. Inventory management

Inventory is an asset that represents a relevant amount of short-term investment for the firm, the study of the existence of an optimal level of inventory investment in relation to firm performance and value creation is justified as a collaboration to understand whether there is an optimal level of inventory or not (Khan & Siddiqui, 2019). Inventory management is an important aspect of supply chain management, ensuring that companies have the right products in the right quantities to sell, at the right time. Effective inventory management helps businesses minimise costs, maximise sales, and increase customer satisfaction. The following is an overview of key concepts and practices in inventory management. Inventory management refers to the process of overseeing and controlling the ordering, storage, and utilisation of a company's inventory, which includes raw materials, components, and finished products (Piasecki, 2009).

The main objective of inventory management is to ensure that inventory levels are optimised to meet customer demand without incurring unnecessary costs (Chopra & Meindl, 2016). Inventory management encompasses the activities involved in managing the stock of goods and materials held by an organisation to support production, sales, and operations. Effective inventory management strives to maintain optimal inventory levels, minimise costs, and ensure timely availability of products (Vandeput, 2020).

There are several ways to measure the efficiency of this inventory management:

1. Customer Satisfaction. Use customer surveys and feedback to evaluate their experience with product availability and delivery times (Chopra & Meindl, 2016).
2. Supplier Relations. Evaluate the quality of communication and partnership with suppliers, including speed and reliability of delivery (Piasecki, 2009).
3. Operational Efficiency. Observe internal processes such as warehouse management, tracking systems, and workflow (Vandeput, 2020; Muckstadt & Sapra, 2010).
4. Adaptability to Demand Changes. Assess the company's ability to respond to changes in market demand (Chopra & Meindl, 2016).
5. Risk Management. Evaluate strategies to manage risks such as stock-outs, damage, or product obsolescence (Vandeput, 2020).
6. Product Quality and Consistency. Ensuring that products manufactured or stored are of consistent quality (Muller, 2011).
7. Experience and Competence of the Inventory Management Team. Evaluate the experience and competence of the team managing the inventory (Muckstadt & Sapra, 2010).

Using this qualitative approach, companies can gain deeper insights into the efficiency of their inventory management, taking into account not only quantitative data but also factors that affect daily operations and customer satisfaction.

2.4. Strategic management accounting on inventory management

Strategic Management Accounting (SMA) techniques play an important role in inventory management by providing managers with relevant information and cost analyses that support strategic decision-making. By integrating SMA, companies can better align their inventory policies with overall business strategies, thereby optimising inventory levels and improving financial performance (Ward, 1992). The application of strategic

management accounting practices affects inventory management by enabling a more comprehensive analysis of inventory costs and their impact on the firm's strategic objectives. SMA assists in the identification and reduction of activities that do not add value in the inventory management process (Atkinson et al., 2021). Strategic management accounting provides detailed insights into cost drivers and cost behaviour, which is crucial for effective inventory management. By utilising SMA, companies can implement more accurate forecasting, increase order quantities, and manage safety stock levels more efficiently (Bhimani, 2012). Strategic management accounting significantly impacts inventory management by providing sophisticated cost analysis techniques, such as activity-based costing and value chain analysis, which help identify inefficiencies and optimise inventory levels. This strategic approach ensures that inventory management practices are aligned with the long-term goals of the organisation (Pitcher, 2020).

Strategic management accounting techniques significantly impact inventory management by providing a broader perspective on cost information and its relevance to strategic decisions. Through the use of activity-based costing and other SMA tools, organisations can more accurately assess the cost implications of inventory decisions, leading to more efficient inventory management practices (Kumar, 2009). The application of strategic management accounting (SMA) improves inventory management by providing detailed insights into the cost structure and financial impact of inventory strategies. SMA helps align inventory management practices with a company's strategic objectives, thereby driving optimal inventory levels and improving cost efficiency (Langfield-Smith et al., 2012). Strategic management accounting plays an important role in inventory management by integrating cost management techniques that help identify and eliminate inefficiencies. By using SMA, companies can achieve better forecasting accuracy, optimise order quantities, and effectively manage safety stock, aligning inventory practices with broader business strategies (Blocher et al., 2019). Strategic management accounting influences inventory management by providing managers with comprehensive cost information that supports strategic planning and decision-making. Techniques such as activity-based costing and value chain analysis enable companies to optimise inventory levels, reduce costs, and improve overall operational efficiency (Kaplan & Atkinson, 2020).

Strategic management accounting (SMA) significantly affects inventory management by integrating cost data and strategic information to develop winning strategies for maintaining optimal inventory levels. SMA techniques such as activity-based costing and value chain analysis help organisations align their inventory practices with strategic objectives, thereby improving efficiency and competitive advantage (Ojra et al., 2021). The adoption of strategically oriented management accounting techniques, such as strategic costing and customer profitability analysis, plays an important role in optimising inventory management. SMA, improves the performance of logistics organisations by improving demand forecasting, procurement strategies, and inventory optimisation. These practices lead to reduced costs, minimised stock-outs, and improved customer satisfaction, indicating the important role of SMA in effective inventory management (Al-Muharrami & Al-Mahrouqi, 2023).

SMA techniques such as strategic planning, control, and performance measurement play an important role in improving inventory management. By combining tools such as benchmarking and Balanced Scorecard, organisations can align their inventory strategy with overall business goals, leading to optimised inventory levels and reduced costs (Ojra et al., 2021). This study examined the impact of inventory management practices on the operational performance of SMEs. It concluded that the integration of SMA practices, such as cost analysis and strategic decision-making, significantly improved inventory management efficiency. This includes better demand forecasting, procurement strategies, and inventory optimisation, leading to reduced stock-outs and improved customer satisfaction (Panigrahi et al., 2024). Research by Ma et al. (2022) focusing on SMEs in China showed that SMA techniques help rational resource allocation and integrate internal and external information for strategic decision making. However, the application of SMA in strategic decisions is still limited due to the lack of understanding and prioritisation by senior managers. This gap indicates the need for greater emphasis on SMA to fully utilise its benefits in inventory management and overall business strategy.

Finally, an empirical study by Rashid et al. (2024) investigated how external environmental factors, such as perceived environmental uncertainty and competitive intensity, impact the use of SMA in Bangladesh. The study found that these factors significantly influenced the adoption of SMA practices, including costing and performance measurement, which in turn improved inventory management practices by making them more responsive to external changes. This article and references highlight the important role of

strategic management accounting in improving inventory management through advanced cost analysis and strategic alignment, leading to improved operational efficiency and competitive advantage.

These statements highlight the important role that strategic management accounting plays in improving inventory management practices. By providing detailed and relevant financial information, SMA supports better decision-making, leading to optimised inventory levels and improved overall performance.

H_1: SMA has a significant positive effect on the inventory management.

2.5. Management accounting information system on inventory management

Management accounting information systems (MAIS) significantly impact inventory management by providing critical data that supports the decision-making process. MAIS facilitates real-time tracking of inventory levels, forecasting demand, and managing costs associated with inventory. The system ensures that managers have accurate and timely information to optimise inventory levels, reduce storage costs, and improve overall operational efficiency (Atkinson et al., 2021). The integration of MAIS in inventory management allows for increased visibility and control over inventory assets. MAIS provides tools for detailed analyses of inventory turns, order management, and cost control, which are critical to maintaining optimal inventory levels and ensuring efficient use of resources (Kay & Ovlia, 2020).

Management accounting information systems play an important role in inventory management by providing comprehensive data that helps in strategic analysis and inventory control. Through accurate data collection and reporting, MAIS enables managers to make informed decisions regarding inventory procurement, storage, and distribution, ultimately leading to cost savings and improved financial performance (Blocher et al., 2019). These statements underscore the importance of Management Accounting Information Systems in improving inventory management practices by providing accurate and timely data, facilitating strategic decision-making, and optimising inventory levels.

A statement from a Recent Research Article on the Effect of Management Accounting Information Systems (MAIS) on Inventory Management was put forward by Knauer et al. (2020) that MAIS significantly improves inventory management by increasing data integration, automation, and real-time tracking. The system facilitates accurate and timely information, which is critical for effective inventory control, demand forecasting, and cost management. A high-quality MAIS enables better decision-making by providing comprehensive data that reduces errors and streamlines inventory processes.

The findings of the study by Yoshikuni et al. (2023) show emerging technologies in MAIS, such as Business Intelligence and Analytics (BI&A), support strategic inventory management by providing multidimensional data for strategic analysis, budgeting, and real-time reporting. These systems enable organisations to align their inventory strategies with overall business objectives, thereby improving operational efficiency and reducing costs associated with inventory management.

Lastly, as Rashid et al. (2024) point out, the quality and integration of MAIS is critical for effective inventory management, especially in environments of high uncertainty and competition. By providing detailed and accurate cost information, MAIS helps organisations to optimise inventory levels, reduce storage costs, and improve responsiveness to market changes. These research articles highlight the important role that a high-quality, well-integrated Management Accounting Information System plays in improving inventory management practices. By utilising advanced technology and providing accurate and real-time data, MAIS facilitates better decision-making, optimises inventory levels, and improves overall operational efficiency.

H_2: MAIS has a significant positive effect on the inventory management.

3. Methodology

3.1. Research approach

This research uses a quantitative descriptive method. The descriptive method is used to obtain the current condition of the variables observed in the analysis unit. Quantitative methods are used to determine whether there is a significant relationship between the observed variables so as to produce conclusions that clarify the

Table 1. Variables and their measurement.

Variables	Acronym	Measurement	References
Effectivity of Strategic Management Accounting	SMA	Provides Business Strategy (SMA_1) Used IT (SMA_2) Provides Accuracy Information (SMA_3) Increasing Financial Performance (SMA_4)	Langfield-Smith et al. (2012); Otley (2016); Kaplan and Atkinson (2020).
Effectivity of Management Accounting Information System	MAIS	User Satisfaction ($MAIS_1$) Decision Making Support ($MAIS_2$) System Reliability and Performance ($MAIS_3$) Usefulness on Cost-Benefit Analysis ($MAIS_4$) Integration with Other Systems ($MAIS_5$) Flexibility and Scalability ($MAIS_6$)	Romney and Steinbart (2018); Turner et al. (2017); Atkinson et al. (2021); Vandeput (2020).
Inventory Management Efficiency	IM	Supplier Relationships (IM_1) Operational Efficiency (IM_2) Adaptability to Demand Changes (IM_3)	Piasecki (2009); Vandeput (2020); Chopra and Meindl (2016); Muckstadt and Sapra (2010).

object to be studied. This research uses primary data obtained through distributing questionnaires to café and restaurant businesses in Bandung, Indonesia. The sampling technique used is simple random sampling.

In this study, researchers managed to collect data from 114 company inventory managers from a total population of 1,020 cafés and restaurants in Bandung, Indonesia. The sample percentage covering approximately 11% of the total population is considered by the researcher to be representative, and considering the sampling method and analytical techniques used, this sample size is considered adequate to provide accurate estimates and represent the wider population in this study, furthermore variables and their measurements are described in Table 1.

3.2. Data survey

This research uses primary data, so data collection is done by distributing questionnaires to respondents who are the research sample. The questionnaire was distributed to respondents via google form, interview, or writing directly on the documents provided. This research uses a closed questionnaire, so that all questions in this questionnaire have answers that have been designed and already have certain scores which will later be calculated using test statistics. Response rate will be calculated to determine the percentage of respondents who answer the questionnaire.

3.3. Research data analysis

The analysis method used is descriptive statistical testing and verification testing. This research data analysis activity goes through several stages as follows:

a. Validity and reliability tests were carried out before the data were analysed further. The measuring instrument is declared valid if it has a validity coefficient value> 0.30 and to test the reliability of the measuring instrument the PLS method and Bootstrapping Algorithm (structural model) are used. A construct is acceptable if it has a coefficient value> 0.6
b. Descriptive data testing. Descriptive analysis is used to explain the characteristics of the variables studied which aims to support problem solving to obtain operational suggestions. The analysis was carried out using descriptive statistics through the percentage score of the actual score obtained by comparing the ideal score with the actual score. The ideal score is the highest answer score worth 5 multiplied by the number of questionnaire questions. The ideal score is the score given by the respondent. The percentage of actual scores will then be interpreted based on the following criteria.
   In Table 2 above, we can see the criteria used by the author in the questionnaire questions distributed to respondents, and these criteria are also used by the author in the descriptive analysis of this study.
c. To test the research data, quantitative data analysis was used with the help of SMART Partial Leas Square (PLS) software. SMART PLS is used to predict the relationship between constructs, confirm the theoretical conceptual model and the relationship between latent variables. According to Hair et al. (2014) path model analysis in SEM PLS consists of (1) measurement model (Outer Model) and structural model (Inner Model). With the variables owned by this study, as well as the complexity of the data used, the authors feel that the advantages possessed by the SEM-PLS application are suitable for use in this study. The stages of data analysis using PLS software according to Ghozali (2013), are as follows:

Table 2. Interpretation results of actual score percentages.

Actual Score Percentages	Category
20.00–36.00	Very Poor
36.01–52.00	Insufficient
52.01–68.00	Sufficient
68.01–84.00	Good
84.01–100.00	Excellent

Source: Creswell (2013).

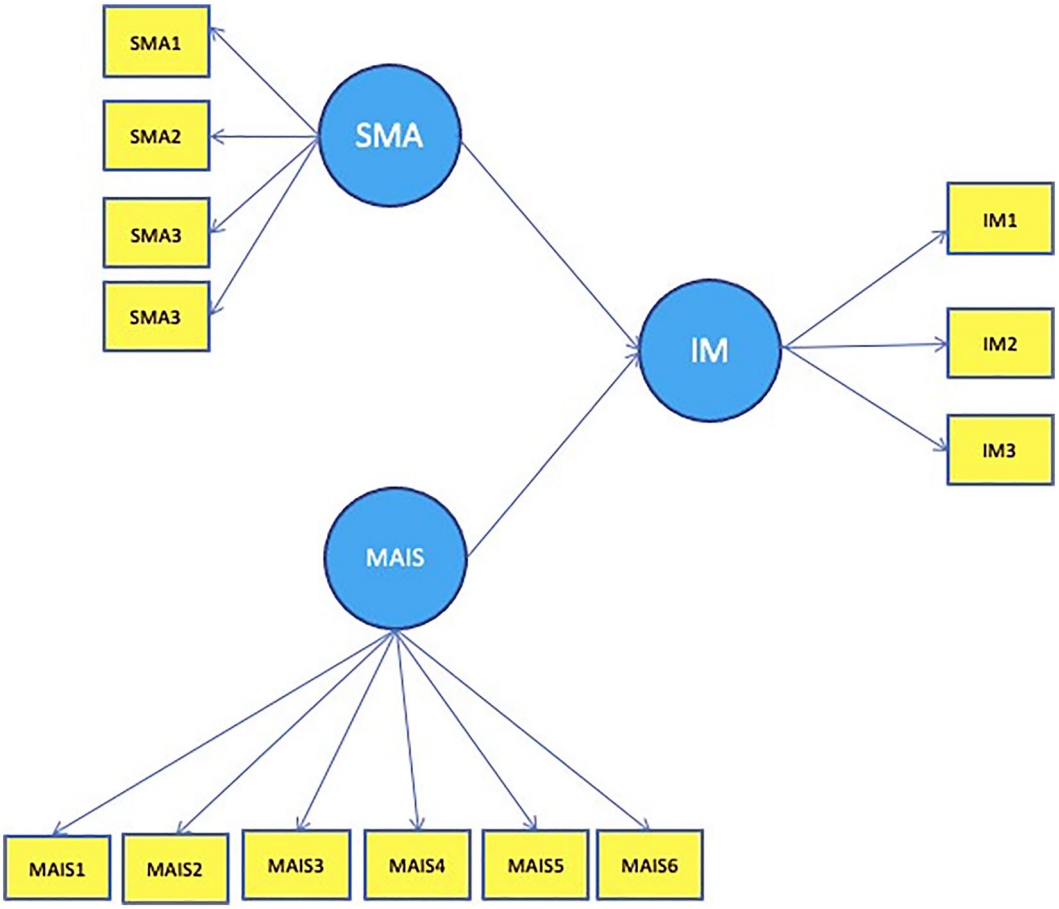

Figure 1. Research proposed model.
Source: PLS processing results.

1. Perform Model Specification Inner & outer models.
   Figure 1. Above is a display of the conceptual model used by the author in the study. The conceptual model serves as a guide in identifying and understanding the relationship between latent variables and indicator variables. This conceptual model is also the proposed model in this study along with all hypotheses.
2. Model Estimating.
   The estimation method used in this study is the maximum likelihood estimator (MLE) with the assumption that the data is multivariate normally distributed (Bollen & Curran, 2006).
3. Model Evaluation.
   Model Evaluation. Testing the suitability of the model can be done using descriptive statistics. The fit index to measure model fit and the criteria for testing whether a model is accepted or rejected are presented in Table 3.
4. Model fit testing.
5. Testing the hypothesis.

   Size and significance of path coefficients. The significance value can be seen from the p-value and t-value. If the p-value is smaller than α, it is considered significant.

Table 3. Overall model fit test.

No	Model fit test statistics	Interpretation
1.	Goodness of-Fit Indices (GFI)	Value > 0.9 indicates good fit
2.	Root Mean Squared Residual (RMR)	Value < 0.05 indicates good fit
3.	Root Mean Square Error of Approximation (RMSEA)	Value < 0.05 indicates good fit
4.	Adjusted Goodness of Fit (AGFI)	Value > 0.9 indicates good fit
5.	Normed Fit Index (NFI)	Value > 0.9 indicates good fit
6.	Standardized RMR (SRMR)	Value < 0.05 indicates good fit
7.	Tucker-Lewis Index (TLI)	Value > 0.9 indicates good fit
8.	Parsimony Fit Index (PNFI)	Value > 0.9 indicates good fit
9.	Akaike information Criterion (AIC)	Value < 0 Indicates good fit

Source: Schumacker and Lomax (2010).

3.4. Ethical approval and respondent consent

This research uses primary data by distributing questionnaires to respondents who are the research sample. The questionnaire was distributed to respondents via google form, interviews, or writing directly on the documents provided. Ethical clearance was obtained by Lilis Puspitawati (first author) from Directorate of Research, Community Service and Empowerment, Universitas Komputer Indonesia, as she is a lecturer at the institution. Related to ethical clearance, before carrying out data collection, the author has first explained verbally and in writing about the nature of the research, including its objectives, procedures, potential risks, and benefits. The respondents were also given the right to withdraw from the study at any time without penalty. The data used by the authors had ensured that all respondents had consented to the data collection and allowed this study to use the data, the consent of all informants was carefully obtained before they were involved in the study. Informants' consent was documented in writing, either on paper or digitally stored when the respondents filled out the questionnaire.

Some café and restaurant business respondents stated that they had used inventory management software either designed/developed by themselves or developed by software development companies but they were not willing to share the contents and display menu of the software for reasons of maintaining the confidentiality of their inventory data.

4. Findings and discussion

4.1. Findings

The results obtained from the characteristics of 85 respondents in this study were 70% male, 30% female. In terms of age, the highest is 31-40 years old, which is 56.7%. Furthermore, the highest educational characteristics are 50% undergraduate and 50% have been in business for 5 to 10 years.

4.1.1. Descriptive analysis

Based on questionnaires distributed to inventory managers of café and restaurant businesses located in the city of Bandung Indonesia, the results of descriptive analysis for the internal inventory control variable are presented in Table 4 as follows.

According to Table 4, the determination of the actual percentage score for the SMA variable resulted in 67.5%, which falls into the sufficient category. This value illustrates that, in general, the implementation of SMA activities in café and restaurant businesses is still inadequate, because the majority of SMA indicators, such as Providing Business Strategy, Using Information Technology, Providing Accurate Information, and Improving Financial Performance, have sufficient values. However, the information technology used is classified as good (74%), which

Table 4. Descriptive result of strategic management accounting (SMA).

No	Indicators	Actual score	Ideal score	% Actual score	Identification Criteria
1	Provides Business Strategy (SMA_1)	371	570	65%	Sufficient
2	IT (SMA_2)	422		74%	Good
3	Provides Accuracy Information (SMA_3)	365		64%	Sufficient
4	Increasing Financial Performance (SMA_4)	382		67%	Sufficient
	Total	1540	2280	67.5%	Sufficient

Sources: Output of Description Analysis.

Table 5. Descriptive results of the MAIS effectivity.

No	Indicators	Actual score	Ideal score	% Actual score	Identification criteria
1	User Satisfaction ($MAIS_1$)	355	570	62,3%	Sufficient
2	Decision Making Support ($MAIS_2$)	384		67.3%	Sufficient
3	System Reliability and Performance ($MAIS_3$)	339		59,5%	Sufficient
4	Usefulness on Cost-Benefit Analysis ($MAIS_4$)	367		64,4%	Sufficient
5	Integration with Other Systems ($MAIS_5$)	294		51.5%	Insufficient
6	Flexibility and Scalability ($MAIS_6$)	297		52%	Insufficient
	Total	2036	3420	59.5%	Sufficient

Sources: Output of Description Analysis.

Table 6. Descriptive results of inventory management efficiency.

No	Indicators	Actual score	Ideal score	% Actual score	Identification criteria
1	Supplier Relationships (IM_1)	418	570	73.3%	Good
2	Operational Efficiency (IM_2)	380		66.6%	Sufficient
3	Adaptability to Demand Changes (IM_3)	422		74.0%	Good
	Total	1220	1710	71.3%	Good

Source: Descriptive Test Results.

reflects that the majority of café and restaurant companies in the research sample use information technology for inventory management. Furthermore, Table 5 presents the results of descriptive statistics for the MAIS variable.

Referring to Table 5, the actual percentage score determined for MAIS is 59.5%, which places it in the appropriate category. This indicates that café and restaurant businesses have not utilised MAIS effectively. Based on the descriptive examination of user satisfaction, decision support, system reliability and performance, usefulness in cost-benefit analysis, integration with other systems, and flexibility and scalability, the quality is poor. Other data from respondents' answers show that only a small proportion of café and restaurant businesses use MAIS for their business operations. The next approach is to describe the results of descriptive analysis for the Inventory Management Efficiency variable using Table 6, as follows.

Based on Table 6, the Efficiency of Inventory Management in the cafe and restaurant business can be said to be good, this implies that the cafe and restaurant business can achieve effective inventory management is critical to the smooth running and success of many business elements, including cost control, customer satisfaction, operational efficiency, forecasting and planning, risk management, financial performance, and regulatory compliance and reporting.

4.1.2. Results of measurement model test

The analysis of this test will be guided by three criteria used to assess the measurement model: (1) internal consistency reliability, (2) convergent validity, and (3) discriminant validity. The test results are shown below:

a. Internal Consistency Reliability.
   The measurement model was assessed using reliability and validity. For reliability, Cronbach's Alpha can be used. This value reflects the reliability of all indicators in the model. The minimum value is 0.7 while the ideal value is 0.8 or 0.9. In addition to Cronbach's Alpha is composite reliability, this value shows internal consistency, that is, a high composite reliability value indicates the consistency value of each indicator in measuring its construct. The CR value is expected to be >0.7.
   Based on Table 7, it can be explained that the value of composite reliability and Cronbach alpha shows more than 0.7 so that the model is declared to have ideal validity, reliability and internal consistency.
b. Convergent Validity
   Relates to the principle that measures, in this case indicators of a variable construct, must be highly correlated. Convergent validity test can be seen from the loading factor value for each construct indicator. The loading factor test results for each indicator used are presented in Table 8.

Table 7. Result of internal consistency testing.

Latent Variable	Composite reliability	Cronbach's alpha
Strategic Management Accounting (SMA)	0.814	0.826
Management Accounting Information System (MAIS)	0.910	0.807
Inventory Management (IM)	0.917	0.815

Source: PLS processing results.

Table 8. Results of convergent validity testing.

Indicators	Loading factor (λ)	Indicator reliability (λ^2)	Desc	AVE
Strategic Management Accounting (SMA)				0,766
Provides Business Strategy (SMA_1)	0.735	0.799	Valid	
Used IT (SMA_2)	0.738	0.762	Valid	
Provides Accuracy Information (SMA_3)	0.717	0.712	Valid	
Increasing Financial Performance (SMA_4)	0.752	0.745	Valid	
Management Accounting Information System (MAIS)				0,681
User Satisfaction ($MAIS_1$)	0.734	0.796	Valid	
Decision Making Support ($MAIS_2$)	0.739	0.735	Valid	
System Reliability and Performance ($MAIS_3$)	0.715	0.682	Valid	
Usefulness on Cost-Benefit Analysis ($MAIS_4$)	0.761	0.761	Valid	
Integration with Other Systems ($MAIS_5$)	0.734	0.685	Valid	
Flexibility and Scalability ($MAIS_6$)	0.822	0.784	Valid	
Inventory Management (IM)				0,826
Supplier Relationships (IM_1)	0.812	0.823	Valid	
Operational Efficiency (IM_2)	0.823	0.768	Valid	
Adaptability to Demand Changes (IM_3)	0.835	0.858	Valid	

Source: Summary of PLS processing results.

Table 9. Results of discriminant validity testing (*Cross Loadings*).

Indicators	MAIS	SMA	Inventory management
Supplier Relationships (IM_1)	**0.742**	**0.587**	**0.892**
Operational Efficiency (IM_2)	**0.586**	**0.611**	**0.894**
Adaptability to Demand Changes (IM_3)	**0.665**	**0.584**	**0.947**
User Satisfaction ($MAIS_1$)	**0.836**	0.323	0.662
Decision Making Support ($MAIS_2$)	**0.958**	0.593	0.855
System Reliability and Performance ($MAIS_3$)	**0.878**	0.395	0.656
Usefulness on Cost-Benefit Analysis ($MAIS_4$)	**0.971**	0.424	0.638
Integration with Other Systems ($MAIS_5$)	**0.823**	0.366	0.662
Flexibility and Scalability ($MAIS_6$)	**0.844**	0.411	0.585
Provides Business Strategy (SMA_1)	0.338	**0.833**	0.559
Used IT (SMA_2)	0.328	**0.752**	0.442
Provides Accuracy Information (SMA_3)	0.357	**0.896**	0.533
Increasing Financial Performance (SMA_4)	0.421	**0.885**	0.635

Source: PLS processing results.

Referring to the factor loading values presented in Table 8, all indicators can be interpreted as valid for measuring MAS, MAIS and Inventory Management variables because their values exceed the limit value of 0.7.

c. Discriminant Validity.

Discriminant validity is carried out to ensure that each concept of each latent model is different from other variables. In SMART-PLS, discriminant validity testing can be assessed based on the Fornell-Larcker and cross loading criteria. In the Fornell-Larcker criteria test, discriminant validity can be said to be good if the root of the AVE on the construct is higher than the correlation of the construct with other latent variables, while the cross loading test must show a higher indicator value on each construct compared to indicators on other constructs (Sekaran & Bougie, 2016). The results of discriminant validity testing are presented in Table 9, as follows.

Referring to the results of the cross loading and fornel-larcker tests in Tables 9 and 10, it can be identified that each indicator used to measure each latent model is different from the other variables tested in this research model.

4.1.3. Results of structural model test (Inner model)

Testing of the structural model (inner model) is done using R-square and the effect size value f2. The results of testing the inner model are presented in Table 11 and displayed in Figure 2.

Figure 2 above is a view of the inner model or structural model which refers to the part of the model that describes the relationship between latent variables (constructs). Referring to the results of structural model testing, it was identified that the structural model has an R-square value of 0.691. This result shows that 69.1% of the Inventory Management Effectiveness variable is influenced by the SMA and MAIS variables. The R2 value is between 0.5 to 0.75, indicating that the predictive accuracy of the model has a moderate influence. Effect Size measurements on the model are presented in Table 11.

Referring to Table 11, the F2 value of SMA is 0.581, the F2 value exceeds 0.35, so it can be determined that the effect size of SMA on Inventory Management Efficiency is quite large. The MAIS value is 0.318. The F2 value varies between 0.15 and 0.35, indicating that the effect size of MAIS on Inventory Management Effectiveness is medium.

Table 10. Results of discriminant validity testing (*Fornel-Larcker).*

Construct Variable	SMA	MAIS	IM
Strategic Management Accounting (SMA)	**0.864**		
Management Accounting Information System (MAIS)	0.466	**0.846**	
Inventory Management (IM)	0.757	0.631	**0.916**

Source: PLS processing results.

Table 11. Structural model effect size assessment.

No	Endogenous construct	Inventory Management (IM) (f^2)
1	Strategic Management Accounting (SMA)	0.581
2	Management Accounting Information System (MAIS)	0.302

Source: PLS processing results.

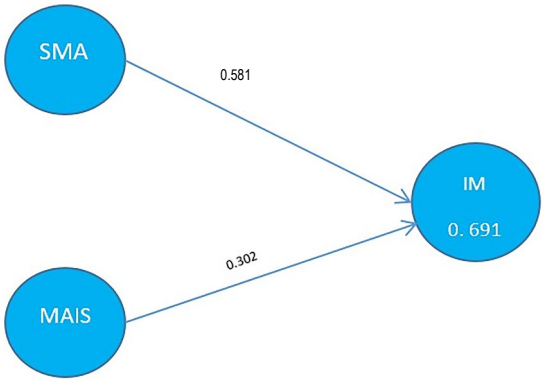

Figure 2. The inner model.
Source: PLS processing results.

Table 12. Hiphotheses testing result.

Consequence	Reason	Estimate	Std Error	z-value	p-value	Sig
SMA	SMA_1	0.126	0.112	2.612	0.021	Sig.
	SMA_2	0.203	0.121	2.854	0.041	Sig.
	SMA_3	0.388	0.152	2.284	0.017	Sig.
	SMA_4	0.193	0.312	2.554	0.029	Sig.
MAIS	$MAIS_1$	0.676	0.108	6.151	0.000	Sig.
	$MAIS_2$	0.051	0.076	3.412	0.028	Sig.
	$MAIS_3$	0.080	0.082	3.847	0.018	Sig.
	$MAIS_4$	0.275	0.109	2.162	0.015	Sig.
	$MAIS_5$	0.157	0.211	4.552	0.001	Sig.
IM	$MAIS_6$	0.423	0.160	2.234	0.022	Sig.
	IM_1	0.267	0.144	2.677	0.016	Sig.
	IM_2	0.135	0.412	3.159	0.033	Sig.
	IM_3	0.186	0.154	3.664	0.002	Sig.
IM	SMA	0,581	0.066	4.078	0,011	Sig.
	MAIS	0,302	0.013	2.127	0,032	Sig.

Source: PLS processing results.

4.1.4. Hypothesis testing

Results of Hypothesis Testing can be seen as follows:

1. Referring to Table 12, it is known that the t statistical value for SMA on Inventory Management Efficiency is 4.078. This value is greater than 1.660 so it can be concluded that H0 is rejected and accepts Ha, meaning that SMA is proven to have an effect on Inventory Management Efficiency in café and restaurant businesses in Bandung. This value is greater than 1.660 so it can be concluded that H0 is rejected and accepts Ha, meaning that SMA is proven to have an effect on Inventory Management Efficiency in café and restaurant businesses in Bandung-Indonesia, with an influence contribution of 58.1%.
2. Referring to Table 12, it is known that the t statistical value for MAIS on Inventory Management Efficiency is 2.127. This value is greater than 1.984 so it can be concluded that H0 is rejected and Ha is accepted, meaning that MAIS is proven to have an effect on Inventory Management Efficiency

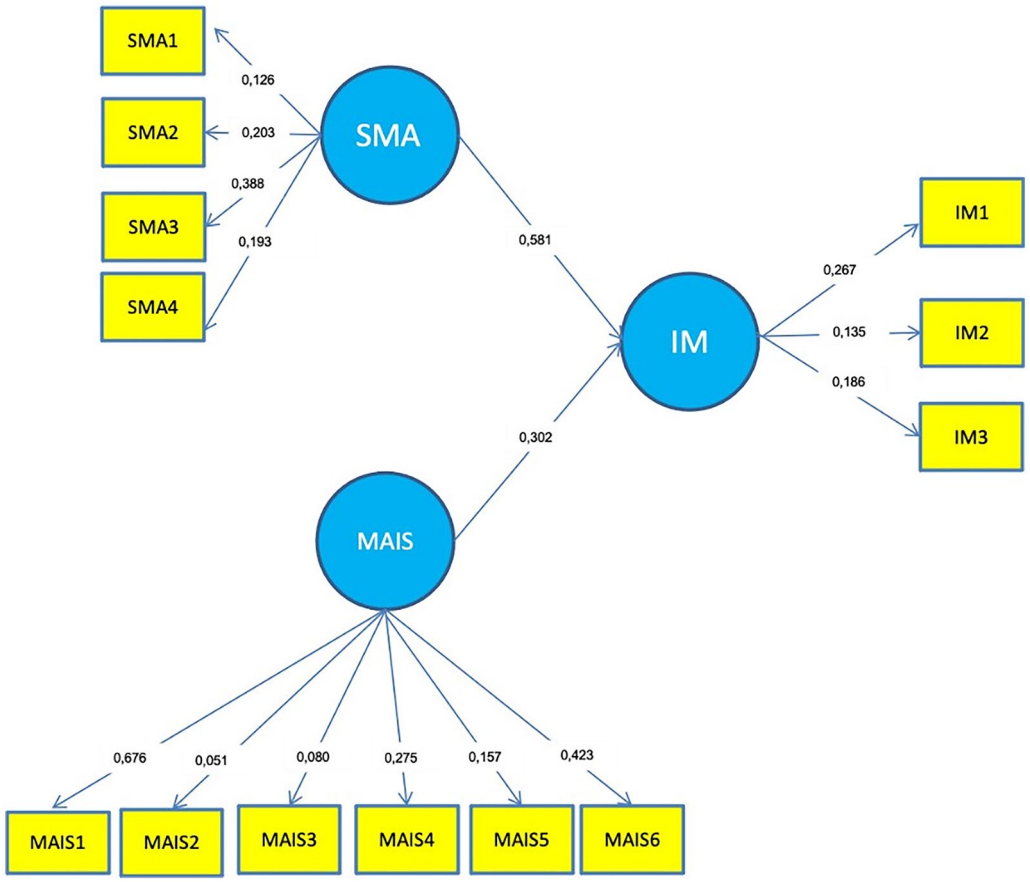

Figure 3. The structural model.

in café and restaurant businesses in Bandung-Indonesia with an influence contribution of 30.2%. The overall structural equation model is described as follows.

Figure 3 displays the main framework used to test hypotheses regarding the causal relationship between latent variables in this study.

4.2. Discussion

4.2.1. An examination impact of the strategic management accounting on the inventory management

This study successfully proved the effect of Strategic Management Accounting (SMA) on Inventory Management Efficiency in the Café and Restaurant Business in Bandung Indonesia. This study found that SMA has a dominant influence (51.9%) on Inventory Management Efficiency. This study is relevant to the results of research conducted by Panigrahi et al. (2024) who found that integrating SMA principles, such as cost analysis and strategic decision making, significantly improved inventory management efficiency. Meanwhile, Ma et al. (2022) found that the SMA approach helps rational resource allocation and integration of internal and external information for strategic inventory management and overall corporate strategy. Finally, Rashid et al. (2024) completed an empirical study on the use of SMA in Bangladesh, the study highlighted SMA techniques involving costing and performance appraisal, which are scientifically proven to improve inventory management processes and enable organisations to easily adjust to external changes. The results of this study usually show that SMA effectively helps businesses to develop more suitable inventory management techniques.

The SMA approach helps improve the accuracy and quality of data used for inventory management. More accurate data enables better demand forecasting and inventory control. In addition, SMA enables companies to respond more quickly to market changes and external uncertainties. Companies can adjust

their inventory plans in response to changing market conditions using integrated data and extensive cost analyses, thus lowering the risk of running out or having too much inventory. The use of SMA in inventory management can lower operational costs by improving cost control and reducing manual errors. Automation in the system also reduces the daily workload of management accountants, allowing them to concentrate on more strategic activities. SMA techniques form a framework for strategic analysis, budgeting, and real-time reporting. This improves strategic decision-making and aligns inventory strategy with corporate goals, leading to increased flexibility and performance.

The results of this study show that SMA has a stronger influence on inventory management efficiency compared to MAIS. Some of the factors that contribute to this difference are: SMA includes a greater variety of functions than MAIS. SMA includes budgeting, forecasting, performance evaluation, and strategic planning, all of which have a direct impact on inventory management decisions. The system provides comprehensive insights that go beyond simple data collection and processing, and SMA provides full decision support features to help managers analyse costs, optimise inventory levels, and integrate inventory plans with broader corporate goals.

SMA further incorporates the principles of strategic management accounting into business operations. SMA focuses on linking inventory management to overall business strategy, ensuring that inventory policies support long-term goals and competitive positioning. This strategic integration increases the effectiveness of inventory management procedures. SMA provides tools to monitor and control performance, such as the Balanced Scorecard, which helps manage and improve inventory turns, reduce holding costs, and ensure optimal inventory levels.

SMA facilitates a more in-depth analysis and decision-making process. SMA includes advanced analytical tools that enable extensive cost analysis, scenario planning, and performance comparisons. These tools enable managers to make informed decisions about inventory acquisition, storage, and distribution. By focusing on cost management and control, SMA helps find inefficiencies and potential cost reductions in inventory management, resulting in more efficient operations.

SMA is aimed at achieving strategic goals, while MAIS focuses on operational efficiency. SMA is designed to support strategic goals by ensuring that inventory management methods help the business achieve those goals. This emphasis on strategy results in improved alignment of inventory management with the company's long-term goals. While MAIS improves operational efficiency by providing accurate and timely data, SMA goes a step further by ensuring that these efficiencies align with strategic goals, resulting in a more meaningful impact on total inventory management.

SMA is designed to be flexible and adaptive, allowing organisations to react quickly to market changes, demand fluctuations, and supply chain disruptions. This adaptability ensures that inventory management remains effective even in changing situations. SMA can be customised and linked with other enterprise processes and systems, resulting in smoother information flow and improved coordination between functions. This connection increases the overall effectiveness of inventory management.

SMA has a greater impact on inventory management than MAIS because SMA is more comprehensive, strategic, and analytical. Beyond the operational benefits provided by MAIS, SMA improves the effectiveness of inventory management processes by providing deeper insights, enabling strategic decision-making, and aligning with overall business objectives. By understanding these contributions, companies can effectively adopt SMA strategies to improve inventory management, lower costs, and increase overall operational efficiency.

4.2.2. An examination impact of the management accounting information system on the inventory management

This study found that there are advantages to using a management accounting information system in terms of inventory management efficiency. Although not very dominant, this study found that effective implementation of management information systems contributed to improving inventory management efficiency in café and restaurant businesses in Bandung, Indonesia. This research is consistent with the investigation conducted by Knauer et al. (2020) MAIS improves inventory management through data integration, automation, and real-time tracking. As pointed out by Yoshikuni et al. (2023) emerging technologies in MAIS, such as Business Intelligence and Analytics (BI&A), support strategic inventory management. In addition, Rashid et al. (2024) showed that the quality and integration of MAIS are

critical for effective inventory management, especially in environments with high uncertainty and competition.

This research adds significantly to our understanding of how Management Accounting Information Systems (MAIS) affect inventory management. Here are some of the significant contributions of the research findings:

a. Improved Data Quality and System Integration. According to research, a high-quality MAIS, such as effective data integration and process automation, can improve the accuracy and timeliness of inventory management information. This enables better decision-making and more effective inventory management.
b. Optimising inventory levels. MAIS helps optimise inventory levels by providing precise real-time data for demand forecasting and cost management. The solution enables businesses to strike a balance between inventory availability and storage costs, thereby improving operational efficiency.
c. Responsive to Market Changes: Studies show that high-quality MAIS enables companies to be more responsive to market changes and external uncertainties. With integrated data and detailed cost analyses, companies can adjust their inventory strategies according to changing market conditions.
d. Error Reduction and Improved Efficiency: Automation in MAIS reduces manual errors and increases efficiency in the inventory management process. This leads to lower operational costs and improved overall efficiency in inventory management.
e. MAIS supports strategic decision-making through a framework for real-time analysis, budgeting, and reporting. The solution enables companies to align their inventory strategy with overall business objectives, resulting in improved performance and strategic flexibility.

MAIS is an efficient managerial activity to improve inventory management that can be utilised in café and restaurant establishments. As said earlier, these findings are highly relevant. Uncontrolled inventory conditions are common in café and restaurant establishments, which means that inventory is sometimes excessive and sometimes deficient. This problem indicates that the organisation has not been able to manage inventory adequately, which results in unproductive sales operations as the company often fails to meet customers' product needs. If this is allowed to continue for a long period of time, it will result in a decrease in revenue and threaten the long-term viability of the business.

4.2.3. Implications of research findings

The findings outline the important role of Strategic Management Accounting in integrating the company's financial data with strategic objectives, and explain how inventory management practices directly affect cost control, profitability, and competitive advantage.

a. SMA plays a strategic role in long-term planning, resource allocation & operational cost control as well as suppressing the use of excessive inventory and reducing production costs for more efficient production. In industrial companies, inventory is a critical asset, where accurate inventory levels have implications in improving overall profitability.
b. SMA has implications in improving the accuracy of decision-making and forecasting. Inventory accuracy implies protection against uncertainty. Managers can use this data to develop more accurate forecasting and production planning models that contribute to improved resilience and sustainability of business operations. Effective inventory management contributes to reducing the risk of supply chain disruptions and demand variability.
c. SMA encourages effective Lean Inventory practices: companies with effective inventory management, implement lean inventory strategies by minimising waste and reducing unnecessary stock levels. This finding supports the argument for adopting just-in-time (JIT) methodologies to improve efficiency.
d. Inventory is a strategic asset: the contribution of this research shows that inventory should be managed as a strategic asset and treat inventory not just as a cost but as a lever for increased levels of differentiation and service. This shift in mindset has implications for improving customer satisfaction, as a well-managed inventory system will ensure the right products are available when needed, without excessive stockouts.
e. Integration with technology and data analytics: One significant implication is the role of

technology and data analytics in Inventory Management. Findings show the potential benefits of integrating real-time data systems and predictive analytics into inventory management. The implementation of IT in SMA plays an important role in improving decision-making by providing accurate and real-time information into stock levels, demand trends, and supplier performance. Companies that utilise IT will be better equipped to maintain optimal inventory levels and respond quickly to market changes.

f. Inventory Management has implications for an organisation's sustainability goals. Companies with effective inventory strategies can reduce excessive resource use and waste consumption that contributes to wider environmental health. Reducing excess inventory helps minimise the environmental impact of production and storage, aligning company operations with sustainability goals. This is becoming increasingly relevant in SMAs, where sustainability metrics are being integrated into performance management systems.

The findings of this study offer valuable insights into how inventory management can be utilised as a strategic tool within the broader framework of strategic management accounting. By focusing on cost control, risk management, lean inventory practices, and technology integration, business units can better align their inventory strategies with overall strategic goals. This critical intersection of inventory management and SMA highlights the importance of viewing inventory not just as a logistical issue but as a vital contributor to organisational performance and long-term sustainability.

5. Conclusion

The study concluded that strategic management accounting and accounting information systems have an impact on the efficiency of inventory management in cafes and restaurants. The study determined that strategic management accounting has a greater impact on inventory management than management accounting information systems. This situation is fuelled by the fact that not all cafes and restaurants use available accounting software.

This research project makes a significant contribution to the café and restaurant business in relation to the efficiency of inventory management to improve business optimisation. Effective implementation of strategic management accounting and management accounting information systems helps in the collection of accurate information to develop operational strategies for business operations. SMA and MAIS can play an important role in supporting inventory management by providing relevant and timely information for decision making. The integration of strategic management accounting and management accounting information systems can enable organisations to make more informed decisions about inventory management, leading to improved organisational performance. For example, the use of strategic management accounting techniques can help organisations to better understand their product markets and competitors' costs and cost structures, which can inform inventory management decisions.

Ethical approval

Ethical approval for this research was granted by Directorate of Research, Community Service and Empowerment, Universitas Komputer Indonesia, with reference number 057/DP3M/UNIKOM/VIII/2024.

Author contributions

Lilis Puspitawati: involved in the conception and design of the research, analysis and interpretation of the data, drafting of the paper and involved in revising it critically for intellectual content and the final approval of the published version and also accountable for all aspects of the work. Iqbal Lhutfi: involved in the conception and design of the research, analysis and interpretation of the data, drafting of the paper and involved in revising it critically for intellectual content and the final approval of the published version and also accountable for all aspects of the work. Inomjon Qudratov: involved in the conception and design of the research, analysis and interpretation of the data, drafting of the paper and involved in revising it critically for intellectual content and the final approval of the published version and also accountable for all aspects of the work.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Data availability statement

This research uses primary data obtained through distributing questionnaires to café and restaurant businesses in Bandung, Indonesia. In this study, researchers managed to collect data from 114 company inventory managers. The data are available upon request from the authors by contacting the corresponding author at lilis.puspitawati@email.unikom.ac.id.

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