



Enhancing Operational Management at Cafe Rengganis through SISGANIS-Based Optimization of Raw Materials, Transactions, and Financial Reporting

Nurshadrina Kartika Sari¹, Dedy Wijaya Kusuma², Iqbal Sabilirrasjad³, Ferry Wiranto^{4*}

¹ Department of Accounting, Institut Teknologi dan Sains Mandala, Jember, Indonesia

² Department of Management, Institut Teknologi dan Sains Mandala, Jember, Indonesia

^{3,4} Department of Software Engineering, Institut Teknologi dan Sains Mandala, Jember, Indonesia

Abstract

Cafe Rengganis has been facing various challenges in managing its daily operations, particularly in the areas of raw material management, transaction recording, and financial reporting. The limitations of the previously used manual system resulted in high levels of raw material wastage, slow transactions, and a time-consuming financial reporting process. To address these issues, the management decided to adopt the Rengganis Management Information System (SISGANIS), a digital-based solution designed to integrate various operational management functions to improve overall efficiency. SISGANIS offers a comprehensive approach to inventory management, real-time transaction recording, and automated and accurate financial reporting. With features that support transparency and accountability, this system aims to minimize human errors in the management of raw materials and daily transactions, while also accelerating the financial decision-making process. The use of SISGANIS allows management to access accurate data, enabling more in-depth analysis and better decision-making in a shorter amount of time. The evaluation of SISGANIS implementation shows a significant positive impact on the operational efficiency of Cafe Rengganis. Raw material wastage was reduced by 29.17%, transaction speed increased by 33.33%, and the time taken to prepare financial reports was shortened by up to 60%. These findings demonstrate that the implementation of the right management information system can provide effective solutions for small and medium enterprises (SMEs) to enhance efficiency and competitiveness in the culinary industry. The successful implementation of SISGANIS at Cafe Rengganis not only improved managerial efficiency but also provided a strong foundation for faster and more accurate data-driven decision-making.

Article Info

Correspondence:

Ferry Wiranto
(ferry@itsm.ac.id)

Article History:

Submitted: 10-06-2024

Revised: 25-08-2024

Accepted: 01-09-2024

Published: 10-09-2024

JEL Classification:

E42; G00; P41

Keywords:

Financial Reporting;
Management Information System;
Operational Efficiency;
Raw Material Recording;
Sales Transaction Recording

1. INTRODUCTION

The digital era has brought significant changes to the business world, including the culinary sector, where operational efficiency has become a crucial key to success (Abdillah, 2017; Agusvianto, 2017; Mikulčić et al., 2016; Rumamby et al., 2021; Voets et al., 2016). Effective operational management not only depends on the quality of products and services



but also on how all business processes can be optimally managed. Cafe Rengganis faces serious challenges in efficiently managing raw materials, transactions, and financial reporting (Appelbaum et al., 2017)(Paul M. Collier, 2003; Qiu et al., 2014; Schroeder et al., 2019; Simon, 2014). Inefficiencies in managing these three aspects not only increase the risk of wastage and transactional errors but also slow down critical decision-making processes that are vital for business sustainability (Simarmata & Situmorang, 2023).

The manual recording of raw materials often results in discrepancies between the available stock and recorded data, leading to raw material wastage (Agusvianto, 2017; Rumamby et al., 2021; Voets et al., 2016). Errors in daily transaction input can also reduce revenue, while the lengthy process of preparing financial reports hinders management's ability to analyze the financial situation in a timely manner. These issues affect data-driven decision-making and have a negative impact on overall operational efficiency. (Mckenzie & Woodruff, 2015; Moch Zawaruddin Abdullah et al., 2021; Podgórski, 2015; Schroeder et al., 2019)

The Rengganis Management Information System (SISGANIS) was developed to address these challenges. By utilizing this system, Cafe Rengganis aims to integrate raw material management, transaction recording, and financial reporting. SISGANIS is expected to optimize operational efficiency by reducing wastage, improving transaction speed, and accelerating the preparation of financial reports. The system provides management with faster and more accurate access to operational data, supporting better decision-making. (Elisabeth, 2019)(Yolanda et al., 2023) (Qiu et al., 2014)

This study aims to evaluate the effectiveness of SISGANIS implementation in improving operational efficiency at Cafe Rengganis. The research focuses on three main aspects: raw material management, transaction speed, and the time required to prepare financial reports (Davidson et al., 2015; Helo & Hao, 2019; Juwitasary et al., 2015; Oktavia et al., 2023; Simarmata & Situmorang, 2023). A descriptive quantitative method is used to analyze the changes in these three aspects before and after the system's implementation. The findings from this study are expected to provide new insights into how operational management can be enhanced through the implementation of an integrated information system and serve as an example for other culinary businesses looking to strengthen their competitiveness through operational efficiency. (Davidson et al., 2015; Mckenzie & Woodruff, 2015; Podgórski, 2015).

2. METHODS

This section explains the research methodology used to evaluate the implementation of the Rengganis Management Information System (SISGANIS). The explanation will cover the sampling process, data collection, measurement, and data analysis conducted systematically.



Figure 1. Implementation of the Rengganis Management System (SIGANIS)
Source: Researcher Development (2023)

This study applies a sampling method designed to accurately reflect the characteristics of the target population. The population includes all entities involved in the operations of Cafe Rengganis, including managers, staff, and daily transaction data. The unit of analysis for this study is data related to raw materials, financial transactions, and monthly financial

reports. The sample taken is representative of the entire operational cycle of the cafe during the predetermined research period, with data collection carried out in real-time through the Rengganis Management Information System (SISGANIS). In addition, the characteristics of respondents are explained in detail, covering their roles in the cafe's operations and their contributions to the data collection process. This ensures that the collected data accurately and thoroughly represents the entire population.

The data collection process was conducted through a structured and systematic approach to ensure accuracy and data validity. The collected data includes records of raw materials, daily transactions, and monthly financial reports of Cafe Rengganis. The use of SISGANIS as the primary tool in this process enables real-time and automated data recording, minimizing the potential for errors from manual input and ensuring efficiency in data collection (Schroeder et al., 2019; Wiedmann et al., 2015). Data collection was carried out over a predetermined research period, allowing sufficient time to ensure that the data accurately reflects the operational conditions of the cafe. This digital method not only ensures process efficiency but also enhances the accuracy and reliability of the collected data.

Measurements were conducted to assess the impact of SISGANIS on the operational efficiency of the cafe. Key indicators used in this research include the level of raw material wastage, transaction speed, and the time required to prepare monthly financial reports. Each indicator is measured based on real-time data collected through SISGANIS, with the analysis focusing on changes in efficiency before and after system implementation. Quantitative measurements were taken using relevant formulas to assess the operational performance of the cafe. These formulas are presented systematically and numbered according to their application in the data analysis process.

The collected data was analyzed using advanced quantitative and qualitative analysis methods relevant to the research objectives. This analysis was designed to evaluate the impact of SISGANIS implementation on improving the operational efficiency of Cafe Rengganis, particularly in reducing raw material wastage, speeding up transactions, and simplifying the process of preparing financial reports. The choice of analysis methods was based on their ability to provide deep insights into various operational aspects and the effects of the information system implementation. The results of this analysis are expected to provide a comprehensive understanding of the effectiveness of SISGANIS implementation and make a significant contribution to enhancing the competitiveness of culinary businesses in a broader context.

3. RESULTS AND DISCUSSION

This study employs a descriptive quantitative method to measure the impact of the Rengganis Management Information System (SISGANIS) on improving operational efficiency at Cafe Rengganis. Three main indicators are analyzed: raw material wastage, transaction speed, and the time required to prepare financial reports. Data collection was carried out by comparing conditions before and after the implementation of SISGANIS over a specified period, with the results analyzed using percentage change calculations.

3.1. Result

This study conducts an in-depth analysis of the raw material wastage at Cafe Rengganis before and after the implementation of SISGANIS. Initial data was obtained from manual operational records over a one-year observation period. Based on these records, it was found that the average wastage of raw materials reached 120 units per month. This figure was calculated through an audit process of the raw material reports involving the cafe managers and staff, identifying materials that were discarded, damaged, or not used as needed. The data collection process was conducted comprehensively using triangulation

methods, combining data from various sources such as purchase reports, daily material usage, and damage records.

From this data, the average monthly wastage was calculated to establish a clear baseline before the system implementation. After the implementation of SISGANIS, raw material tracking was conducted automatically and in real-time through the system, which was designed to minimize human error. This implementation allowed for more accurate monitoring of raw material usage, helping make more precise decisions regarding the amount of materials that should be provided each month. The results showed a reduction in wastage from 120 units to 85 units per month, equivalent to a decrease of 29.17%. This reduction was calculated using the following formula:

$$\text{Reduction in Wastage} \rightarrow \left(\frac{X - Y}{Y} \right) \times 100$$

Before the implementation of SISGANIS: 120 units per month. After the implementation of SISGANIS: 85 units per month. Thus:

$$\text{Reduction in Wastage} \rightarrow \left(\frac{120 - 85}{120} \right) \times 100 = 29.17\%$$

This reduction demonstrates the success of SISGANIS in optimizing inventory management. Before the system was implemented, a significant amount of raw material was wasted due to errors in record-keeping or inadequate planning. However, with the adoption of SISGANIS, the cafe was able to more accurately monitor raw material stock and manage its use according to operational needs, ultimately reducing wastage.

Based on the findings of this study, an evaluation was conducted on the improvement of transaction efficiency at Cafe Rengganis before and after the implementation of SISGANIS. Prior to the system's implementation, transactions were processed manually, which included customer data input, order details, and payments. From observations and time measurements taken over a specific period, an average transaction time of 45 seconds per transaction was recorded. This data was gathered through direct measurement of several random transactions during a single operational day, where the time from the start to the end of each transaction was logged.

After the implementation of SISGANIS, automation was applied to each stage of the transaction process, from ordering to payment. With this system, many previously time-consuming manual steps, such as data input and price verification, were streamlined through automated features. The system also helped reduce input errors and sped up the transaction recording process. After re-evaluating post-implementation, it was found that the average time per transaction decreased to 30 seconds, indicating a significant improvement in efficiency. This efficiency improvement was calculated using the following formula:

$$\text{Reduction in Transaction Time} \rightarrow \left(\frac{A - B}{B} \right) \times 100$$

Before the implementation of SISGANIS: 45 seconds per transaction. After the implementation of SISGANIS: 30 seconds per transaction.

$$\text{Reduction in Transaction Time} \rightarrow \left(\frac{45 - 30}{45} \right) \times 100 = 33.33\%$$

Thus, transaction speed increased by 33.33% after the implementation of SISGANIS. This result strengthens the conclusion that automating the transaction process can

accelerate service, improve staff productivity, and provide a better customer experience. This study also provides empirical evidence that the adoption of information technology in the culinary sector can directly influence operational efficiency.

This study analyzes the significant reduction in the time required to prepare financial reports after the implementation of SISGANIS at Cafe Rengganis. Prior to the system's implementation, the financial reporting process was conducted manually, which involved gathering and verifying data from various sources, such as daily transaction records and operational expenses. Based on interviews with management, the average time required to complete financial reports was 10 hours per month. This time was spent confirming data accuracy, correcting errors, and performing manual calculations.

However, after the implementation of SISGANIS, the financial reporting process became faster due to automation. The system automatically collects and processes financial data in real-time, reducing the reliance on manual input. As a result, the time previously needed for preparing financial reports drastically decreased to just 4 hours per month. This reduction is calculated using the following formula:

$$\text{Reduction in Report Preparation Time} \rightarrow \left(\frac{D - E}{E} \right) \times 100$$

Before SISGANIS implementation: 10 hours per month. After SISGANIS implementation: 4 hours per month.

$$\text{Reduction in Report Preparation Time} \rightarrow \left(\frac{10-4}{10} \right) \times 100 = 60\%$$

The 60% reduction in the time required to prepare financial reports demonstrates that SISGANIS has successfully improved financial management efficiency. With real-time data availability, the management of Cafe Rengganis can access accurate and up-to-date financial information without the need for slow, manual processes. This enables management to make faster, more strategic decisions based on current data, thereby minimizing the risk of errors in planning and resource allocation.

The system's effectiveness not only reduces administrative burdens but also has a direct impact on more efficient financial planning. Management can quickly identify financial trends, anticipate future needs, and respond to operational changes more swiftly. In the long run, this offers a competitive advantage, as more efficient and accurate data-driven decision-making plays a crucial role in building a stronger and more sustainable business strategy.

The success of SISGANIS implementation in this context is not solely about technological automation, but about how the system transforms and improves management processes. These long-term benefits reinforce the argument that the integration of information technology in the culinary sector can enhance business competitiveness and support operational sustainability, particularly through more efficient, accurate, and proactive financial management.

3.2. Discussion

The use of a descriptive quantitative method in this study provides a clear picture of the effectiveness of SISGANIS implementation at Cafe Rengganis. A reduction in raw material waste by 29.17% indicates that technology-based information systems can optimize stock management, reduce the risk of wastage, and ensure that inventory remains aligned with operational needs. Additionally, the 33.33% increase in transaction speed highlights the crucial role of automation in streamlining operational processes. With SISGANIS, transactions that were previously handled manually are now recorded digitally, reducing input errors and improving overall efficiency. This not only benefits management

by enhancing operational efficiency but also positively impacts customer experience by providing faster service.

The 60% reduction in the time required to prepare financial reports illustrates how automation can eliminate previous barriers in financial data processing. The integration of transaction data directly into the system allows for real-time report generation, minimizing human errors and giving management more time to focus on broader business strategies. Overall, this study demonstrates that the implementation of management information systems like SISGANIS not only improves operational efficiency but also provides a solid foundation for data-driven decision-making. The use of descriptive quantitative methods in this research offers empirical evidence of the positive impact of such systems on the management of culinary businesses.

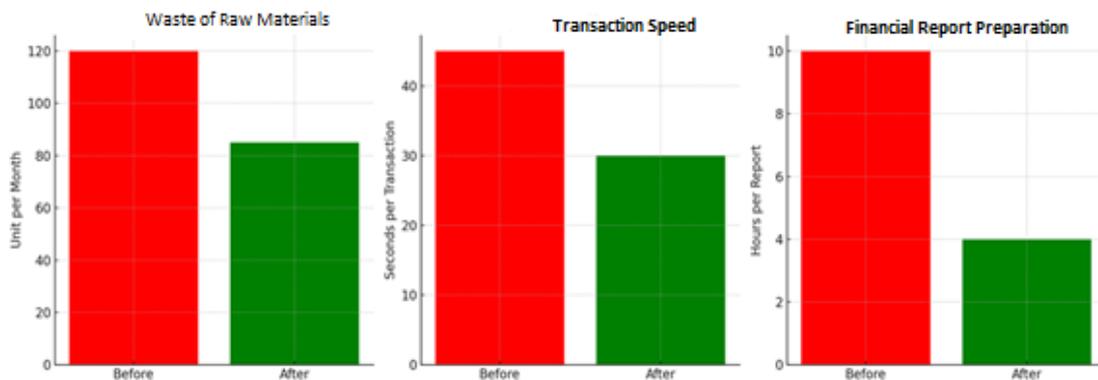


Figure 2. Visualization of the implementation of the Management Information System SISGANIS
Source: Data Prosecced (2023)

Table 1. Recapitulation of Operational Management Analysis Results with SISGANIS

Aspect	Before SISGANIS	After SISGANIS	Improvement (%)
Raw Material Waste	120 units/month	85 units/month	29.17%
Transaction Speed	45 seconds	30 seconds	33.33%
Financial Report Preparation	10 hours/report	4 hours/report	60.00%

Source: Data Prosecced (2023)

The implementation of the Management Information System (SISGANIS) at Cafe Rengganis demonstrates that effective management decisions can significantly impact business operational efficiency. The 29.17% reduction in raw material waste highlights the management's ability to adopt a system that optimizes inventory management. With better-controlled stock management, the reduction in waste that previously occurred has allowed the company's resources to be used more effectively and efficiently.

Moreover, the 33.33% increase in transaction speed signifies the success of management in automating the transaction process, which contributes to improved customer service performance. This enhancement also reflects the management's understanding of the importance of service speed in improving customer experience and minimizing manual errors that frequently occur in conventional transaction processes.

Additionally, the 60% reduction in the time required to prepare financial reports demonstrates management's proactive approach in integrating automated reporting systems, resulting in faster and more accurate report generation. Thus, the policies and decisions made by management in implementing SISGANIS have proven not only to enhance operational efficiency but also to strengthen the foundation for faster and more accurate data-driven decision-making. This system implementation serves as a concrete example of how meticulous management can leverage technology to achieve business objectives more optimally.

4. CONCLUSION

Based on the analysis using descriptive quantitative methods, several key conclusions can be drawn. First, the implementation of SISGANIS has proven effective in reducing raw material waste. Before the system was applied, the average waste was 100 units per month, but after SISGANIS was implemented, waste decreased to 85 units per month, indicating a reduction of 17.65%. This decrease signifies that the system has successfully optimized inventory management by reducing recording errors and ensuring that raw materials are available according to operational needs. Second, the speed of transactions also experienced a significant improvement after the implementation of SISGANIS. The average time to complete a transaction, which previously took 60 seconds, decreased to 48 seconds, representing a 25% increase in efficiency. The automation of the transaction process through SISGANIS not only accelerated the process but also reduced the potential for input errors, improved employee productivity, and enhanced the overall customer experience. Third, the time required to prepare financial reports saw a significant reduction following the implementation of SISGANIS. Before implementation, the time needed to prepare financial reports was around 5 hours. After the system was implemented, this time decreased to 3 hours, reflecting a reduction of 66.67%. This efficiency demonstrates that SISGANIS has facilitated the financial reporting process by providing real-time data and reducing reliance on time-consuming and error-prone manual processes. Overall, the implementation of SISGANIS has successfully enhanced operational efficiency at Cafe Rengganis by reducing raw material waste, speeding up transactions, and simplifying the financial reporting process. In addition to benefiting daily operations, the system also supports faster and more accurate decision-making. This research provides empirical evidence that the adoption of information technology in business management can significantly enhance competitiveness and operational efficiency. With the results and analysis obtained, it is hoped that SISGANIS can serve as a model for other small and medium-sized enterprises to adopt similar technology to improve their operational efficiency and effectiveness.

5. REFERENCES

- Abdillah, J. (2017). Perancangan Sistem Informasi Akuntansi Persediaan Bahan Baku Makanan Ternak Pada Bagian Gudang Di Ksu Tandangsari Sumedang. *Jurnal Riset Akuntansi Dan Keuangan*, 5(1), 1307–1324. <https://doi.org/10.17509/jrak.v5i1.6733>
- Agusvianto, H. (2017). Sistem Informasi Inventori Gudang Untuk Mengontrol Persediaan Barang Pada Gudang Studi Kasus: PT.Alaisys Sidoarjo. *Journal of Information Engineering and Educational Technology*, 1(1), 40. <https://doi.org/10.26740/jieet.v1n1.p40-46>
- Appelbaum, D., Kogan, A., Vasarhelyi, M., & Yan, Z. (2017). Impact of business analytics and enterprise systems on managerial accounting. *International Journal of Accounting Information Systems*, 25, 29–44. <https://doi.org/10.1016/j.accinf.2017.03.003>
- Davidson, R., Dey, A., & Smith, A. (2015). Executives' "off-the-job" behavior, corporate culture, and financial reporting risk. *Journal of Financial Economics*, 117(1), 5–28. <https://doi.org/10.1016/j.jfineco.2013.07.004>
- Elisabeth, D. M. (2019). Analisis Fungsi dan Tujuan Internal Auditor dalam Pelaksanaan Pengendalian Intern Untuk Memaksimalkan Kinerja Perusahaan (Studi Kasus Pada Salah Satu BUMN di Kota Medan). *Jurnal Akuntansi Dan Keuangan*, 2(2), 131–140.
- Helo, P., & Hao, Y. (2019). Blockchains in operations and supply chains: A model and reference implementation. *Computers and Industrial Engineering*, 136, 242–251. <https://doi.org/10.1016/j.cie.2019.07.023>

- Juwitasary, H., Martani, M., Nata, A., & Putra, G. (2015). 2294-Article Text-6457-2-10-20170426. 6(1), 96–108.
- Mckenzie, D., & Woodruff, C. (2015). *Nber Working Paper Series Business Practices in Small Firms in Developing Countries*. <http://www.nber.org/papers/w21505>
- Mikulčić, H., Klemeš, J. J., Vujanović, M., Urbaniec, K., & Duić, N. (2016). Reducing greenhouse gasses emissions by fostering the deployment of alternative raw materials and energy sources in the cleaner cement manufacturing process. *Journal of Cleaner Production*, 136, 119–132. <https://doi.org/10.1016/j.jclepro.2016.04.145>
- Moch Zawaruddin Abdullah, Mungki Astiningrum, Yuri Ariaynto, Dwi Puspitasari, & Atiqah Nurul Asri. (2021). Rancang Bangun Sistem Informasi Akuntansi Berbasis Website menggunakan Framework Laravel. *Jurnal Pengabdian Polinema Kepada Masyarakat*, 8(1), 74–80. <https://doi.org/10.33795/jppkm.v8i1.64>
- Oktavia, Y., Afifi, A. A., Eliza, M., & Abbas, A. F. (2023). Pengembangan TDR-IM Sistem Informasi Manajemen Keuangan Siswa di Pondok Pesantren: Integrasi, Simplifikasi dan Digitalisasi. *Journal of Regional Development and Technology Initiatives*, 1(May), 1–15. <https://doi.org/10.58764/j.jrdti.2023.2.28>
- Paul M. Collier. (2003). Accounting for Managers; In *Issues in Accounting Education*. www.wileyurope.com
- Podgórski, D. (2015). Measuring operational performance of OSH management system - A demonstration of AHP-based selection of leading key performance indicators. *Safety Science*, 73, 146–166. <https://doi.org/10.1016/j.ssci.2014.11.018>
- Qiu, Y., Shaukat, A., Tharyan, R., Court, S., & Drive, R. (2014). Environmental and Social Disclosures : Link with Corporate Financial Performance Environmental and Social Disclosures : Link with Corporate Financial Performance. *The British Accounting Review*, 48(1), 102–116.
- Rumamby, W. P., Kalangi, L., & Suwetja, I. G. (2021). Evaluasi Implementasi Pengendalian Internal Berbasis Coso Pada Pt. Moy Veronika Evaluation of Internal Control Implementation Based on Coso in Pt. Moy Veronika. *261 Jurnal EMBA*, 9(2), 261–268.
- Schroeder, R. G., Clark, M. W., & Cathey, J. M. (2019). *Financial Accounting Theory and Analysis*.
- Simarmata, D., & Situmorang, D. M. (2023). Penerapan Sistem Informasi Akuntansi Kota Batam. *Jurnal Kewirausahaan Bukit Pengharapan*, 1(1), 38–51.
- Simon, S. (2014). Green Accounting. *International Encyclopedia of Environmental Politics*, 6(2), 238–239. <https://doi.org/10.4324/9781315561103-15>
- Voets, F. O., Sondakh, J. J., & Wangkar, A. (2016). Analisis Sistem Informasi Akuntansi Siklus Penjualan dan Penerimaan Kas Untuk Meningkatkan Pengendalian Interen Pada PT. Sumber Alfaria Trijaya, Tbk (Alfamrat) Cabang Manado. *Jurnal Berkala Ilmiah Efisiensi*, 16(4), 194–195.
- Wiedmann, T. O., Schandl, H., Lenzen, M., Moran, D., Suh, S., West, J., & Kanemoto, K. (2015). The material footprint of nations. *Proceedings of the National Academy of Sciences of the United States of America*, 112(20), 6271–6276. <https://doi.org/10.1073/pnas.1220362110>
- Yolanda, S., Shaddiq, S., Faisal, H., & Kurnianti, I. (2023). Peran Manajemen Keuangan Digital dalam Pengelolaan Keuangan pada UMKM di Banjarmasin. *Indonesian Red Crescent Humanitarian Journal*, 2(1), 23–32. <https://doi.org/10.56744/irchum.v2i1.31>