Engineering and Technology Journal e-ISSN: 2456-3358

Volume 11 Issue 03 March-2026, Page No.-9201-9205

DOI: 10.47191/etj/v11i03.09, I.F. – 8.595

Brewing Efficiency: An Assessment of Inventory Management Systems in Cebu City Cafés

John Rey E. Furtos

College of Computer, Information and Communications Technology, Cebu Technological University – Main Campus

ABSTRACT: Inventory management is a critical operational function for café businesses because it ensures the availability of supplies while controlling costs and minimizing waste. Ineffective inventory systems may lead to stock shortages, overstocking, spoilage of perishable items, and inefficient resource utilization, which can negatively affect organizational performance. This study assessed the inventory management practices of cafés in Cebu City and examined their relationship with organizational performance. The research employed a quantitative descriptive–correlational design involving 102 café personnel, including owners, managers, supervisors, and staff directly involved in inventory operations. Data were collected using a structured five-point Likert scale questionnaire and analyzed using descriptive statistics and Pearson correlation analysis. The findings revealed that cafés generally implement effective inventory management practices, with an overall mean score of 4.11, indicating consistent implementation of inventory control procedures and monitoring systems. Organizational performance indicators related to inventory speed, cost management, and accountability also obtained positive ratings ($M = 4.21$). Correlation analysis revealed a very strong positive relationship between inventory management practices and inventory speed ($r = 0.861$, $p < 0.001$), as well as strong positive relationships with inventory cost management and accountability. These findings indicate that effective inventory management practices significantly contribute to improving operational efficiency and performance in café businesses.

KEYWORDS: Correlational methodology, cafes, inventory management, organizational performance, Cebu City, Philippines

INTRODUCTION

The café industry has experienced rapid growth in urban areas, including Cebu City in the Philippines, where cafés cater to diverse customers such as students, professionals, and tourists. In this competitive environment, efficient operational management has become critical for maintaining service quality and business sustainability. One of the most essential operational functions in café businesses is inventory management because cafés depend heavily on fast-moving supplies and perishable ingredients while responding to fluctuating customer demand (Habibullah & Vanany, 2025). Ineffective inventory management can lead to operational challenges such as stockouts, overstocking, spoilage, and unstable operating costs, which may negatively affect service consistency and organizational performance (Hang, 2024).

Inventory control measures play a key role in ensuring that stocks are received, stored, issued, and monitored properly. Weak inventory controls, such as inconsistent monitoring, irregular stock verification, or unclear receiving procedures, may result in inaccurate records and avoidable losses (Ahrens & Chapman, 2004). In food service establishments such as cafés, inventory typically includes a combination of perishable goods, packaging materials, condiments, and operating supplies, each requiring different monitoring and handling procedures. Managing these diverse inventory types requires competent personnel capable of tracking stock movement, preventing shrinkage, and maintaining accurate documentation (Vaka, 2024; Puspitawati et al., 2024).

Strategic inventory management practices also influence operational efficiency in cafés. Inventory strategies guide purchasing decisions, reorder policies, and cost control mechanisms that help businesses maintain optimal stock levels and minimize waste (Azharudin & Basri, 2024). When such strategies are poorly implemented, cafés may experience inefficient procurement practices, excessive holding costs, and reduced service reliability. Conversely, well-designed inventory systems support cost efficiency and operational stability, especially in small and medium enterprises (SMEs) where resource constraints require careful management (Panigrahi et al., 2024; Alam et al., 2024).

From a theoretical perspective, inventory management models such as Economic Order Quantity (EOQ), Reorder Point (ROP), and safety stock provide guidance for balancing inventory costs and service reliability. EOQ emphasizes the optimal balance between ordering costs and holding costs, enabling organizations to minimize total inventory expenses (Duçi et al., 2025). Meanwhile, ROP determines when stock replenishment should occur based on demand and lead time to prevent shortages (Panigrahi et al., 2024). Safety stock theory highlights the importance of maintaining buffer inventory to protect businesses from demand variability and supply disruptions (Demiray Kırmızı et al., 2024). These concepts are particularly relevant for cafés where daily operations depend on reliable stock availability.

In addition, the Resource-Based View (RBV) suggests that well-developed internal capabilities, such as efficient inventory management systems, can become strategic resources that improve organizational performance. Empirical studies have shown that structured inventory practices are positively associated with operational efficiency, profitability, and competitiveness among SMEs (Cabungcal et al., 2023; Panigrahi et al., 2024). Within the food service sector, effective inventory management has also been linked to reduced food waste, improved service reliability, and enhanced financial performance (Bonggolto et al., 2024).

Despite these theoretical and empirical insights, there remains limited research specifically examining inventory management practices in independent cafés, particularly in the context of Cebu City. Much of the existing literature focuses on large restaurants or manufacturing industries, leaving a gap in understanding how small café businesses manage their inventory systems and how these practices influence organizational performance.

Addressing this gap, the present study examines the inventory management practices of cafés in Cebu City and analyzes their relationship with organizational performance. Specifically, the study investigates how inventory practices influence key operational dimensions, including inventory speed, inventory cost management, and inventory accountability. By providing empirical evidence on inventory practices in local café enterprises, the study contributes to the growing literature on SME operations management and offers practical insights for improving inventory systems in small food service businesses.

METHODOLOGY

This study employed a quantitative descriptive–correlational research design to assess the inventory management practices of cafés in Cebu City and determine their relationship with organizational performance. The design allowed the researchers to examine how specific inventory management practices influence operational outcomes such as inventory speed, cost efficiency, and accountability in café operations.

The respondents of the study consisted of 102 personnel working in cafés in Cebu City, including café owners, managers or supervisors, inventory staff, and baristas. These respondents were selected because they are directly involved in inventory-related activities such as procurement, stock monitoring, documentation, and replenishment. Purposive sampling was used to ensure that participants had relevant experience and knowledge regarding the inventory management practices implemented in their respective cafés.

Data were collected using a structured survey questionnaire adapted from Mathiasa and Owuor (2020) and modified to suit the operational context of café businesses. The questionnaire consisted of several sections measuring the key dimensions of inventory management practices and organizational performance. The first section gathered demographic information such as age, gender, position, length of service, employment status, and salary range. The succeeding sections measured inventory management practices in terms of inventory control measures, types of inventory managed, competence of inventory managers, and inventory management strategies.

The questionnaire also included indicators measuring the impact of inventory management practices on organizational performance, particularly in terms of inventory speed, inventory cost management, and inventory accountability. Each item was measured using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). This scaling method enabled respondents to express their level of agreement with statements describing inventory practices and operational outcomes within their workplace.

Prior to data collection, the instrument underwent validation by experts to ensure the clarity and relevance of the items. A pilot test was also conducted to confirm the reliability of the questionnaire before its full deployment. Data were collected through both printed questionnaires and online survey forms, depending on the availability and preference of the respondents.

After the data were gathered, responses were encoded and analyzed using statistical tools. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to describe the demographic profile of respondents and the level of inventory management practices. To determine the relationship between inventory practices and organizational performance, Pearson's r correlation analysis was applied. A significance level of 0.05 was used to determine whether the relationships between variables were statistically significant.

RESULTS AND DISCUSSIONS

These findings of the study regarding the inventory management practices of cafés in Cebu City and their relationship with organizational performance. The analysis focuses on four dimensions of inventory management practices: inventory control measures, types of inventory managed, competence of inventory managers, and inventory management strategies. Furthermore, the study examines how these practices influence organizational performance indicators such as inventory speed, inventory cost management, and inventory accountability.

Inventory management practices play an essential role in ensuring operational efficiency in food service establishments. Effective monitoring of stock levels, proper documentation of inventory movements, and efficient procurement practices enable cafés to maintain continuous operations while minimizing waste and unnecessary expenses.

Table 1 presents the level of inventory management practices among cafés in Cebu City.

Table 1. Level of Inventory Management Practices

Inventory Management Dimension	**Mean**	**SD**	**Interpretation**
Inventory Control Measures	4.12	0.92	Agree
Types of Inventory Managed	4.13	0.88	Agree
Competence of Inventory Manager	4.12	0.97	Agree
Inventory Strategy	4.07	0.90	Agree
Overall Mean	4.11	0.92	Agree

As shown in Table 1, the overall mean score for inventory management practices is 4.11, interpreted as Agree, indicating that cafés generally implement effective inventory management procedures. Among the dimensions measured, types of inventory managed obtained the highest mean score (M = 4.13), suggesting that cafés actively monitor different categories of inventory such as raw materials, supplies, and operational items.

The dimension inventory control measures obtained a mean score of 4.12, indicating that cafés implement structured monitoring systems, including stock verification, documentation of inventory movements, and regular monitoring of supply levels. Similarly, the competence of inventory managers obtained a mean score of 4.12, suggesting that staff responsible for inventory functions possess adequate knowledge and skills in managing procurement and stock monitoring.

Meanwhile, inventory management strategies obtained the lowest mean score (M = 4.07), although it remains within the Agree category. This finding suggests that while cafés perform routine inventory monitoring effectively, strategic inventory planning such as forecasting and long-term procurement strategies may not be consistently practiced.

The effectiveness of inventory management practices can also be observed through their influence on organizational performance. Efficient inventory systems allow businesses to maintain optimal stock levels, reduce operational costs, and ensure accountability in stock management.

Table 2 presents the level of organizational performance among cafés in Cebu City based on inventory-related indicators.

Table 2. Organizational Performance Indicators

Organizational Performance Indicator	**Mean**	**SD**	**Interpretation**
Inventory Speed	4.23	0.86	Agree
Inventory Cost Management	4.23	0.88	Agree
Inventory Accountability	4.17	0.96	Agree
Overall Mean	4.21	0.90	Agree

Table 2 shows that the overall mean score for organizational performance is 4.21, indicating that cafés generally demonstrate efficient operational outcomes related to inventory management. Among the indicators measured, both inventory speed and inventory cost management obtained the highest mean scores (M = 4.23).

High inventory speed indicates that cafés are capable of maintaining efficient inventory turnover, ensuring that supplies are replenished promptly while minimizing spoilage and excess stock. Efficient turnover is particularly important in café operations because many ingredients and products have limited shelf life.

Similarly, the high rating for inventory cost management suggests that cafés implement cost-conscious procurement practices and monitor inventory-related expenses carefully. Effective cost management allows businesses to reduce waste, minimize unnecessary storage costs, and maintain financial sustainability.

The dimension inventory accountability obtained a mean score of 4.17, indicating that cafés maintain reliable documentation systems and verification procedures for tracking inventory movements. Accurate record keeping ensures transparency in inventory operations and helps prevent discrepancies between recorded and actual stock levels.

To determine whether inventory management practices influence organizational performance, Pearson correlation analysis was conducted. Table 3 presents the results of the correlation analysis.

Table 3. Correlation Between Inventory Management Practices and Organizational Performance

Variables	**r-value**	**p-value**	**Interpretation**
Inventory Practices – Inventory Speed	0.861	<0.001	Very Strong Positive
Inventory Practices – Inventory Cost Management	0.773	<0.001	Strong Positive
Inventory Practices – Inventory Accountability	0.773	<0.001	Strong Positive

Table 3 shows that inventory management practices have a very strong positive relationship with inventory speed ($r = 0.861$, $p < 0.001$). This result indicates that cafés with well-structured inventory management systems tend to achieve faster inventory turnover and improved responsiveness to customer demand. Efficient stock movement allows cafés to maintain product freshness while reducing storage costs.

Furthermore, the results show strong positive relationships between inventory management practices and both inventory cost management (r = 0.773) and inventory accountability (r = 0.773). These findings indicate that effective inventory systems contribute to better financial control and improved documentation practices within café operations.

These results support several theoretical perspectives in inventory management. The Economic Order Quantity (EOQ) theory emphasizes balancing ordering costs and holding costs to minimize total inventory expenses. The strong relationship between inventory practices and cost management suggests that cafés benefit from efficient procurement practices that reduce operational expenses.

Similarly, the strong relationship between inventory practices and inventory speed aligns with the Reorder Point (ROP) model, which highlights the importance of replenishing inventory at the correct time to avoid stockouts while maintaining efficient turnover.

From a strategic perspective, the findings can also be interpreted through the Resource-Based View (RBV), which suggests that internal operational capabilities—such as effective inventory management systems—can become valuable organizational resources that improve business performance.

Overall, the results demonstrate that inventory management practices significantly contribute to the operational efficiency of cafés in Cebu City. Strengthening inventory control systems, improving procurement strategies, and enhancing staff competence in inventory monitoring can further improve the sustainability and competitiveness of café businesses.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

This study assessed the inventory management practices of cafés in Cebu City and examined their relationship with organizational performance. The study involved 102 respondents who were directly involved in inventory-related activities, including owners, managers, supervisors, and café staff. The research focused on four dimensions of inventory management practices: inventory control measures, types of inventory managed, competence of inventory managers, and inventory management strategies.

The findings revealed that cafés generally implement inventory management practices consistently, particularly in terms of managing inventory types, implementing control measures, and maintaining competent supervision of inventory operations. Organizational performance indicators related to inventory speed, cost efficiency, and accountability were also rated positively by respondents.

Correlation analysis confirmed that inventory management practices have significant positive relationships with inventory speed, inventory cost management, and inventory accountability. These results highlight the importance of effective inventory systems in improving operational efficiency and performance in café businesses.

CONCLUSIONS

Based on the findings of the study, it can be concluded that inventory management practices play a crucial role in enhancing the organizational performance of cafés in Cebu City. Cafés that implement structured inventory control procedures, maintain competent inventory supervision, and adopt effective procurement strategies tend to experience better operational outcomes.

The strong relationships identified between inventory management practices and performance indicators suggest that inventory systems should not be treated merely as routine operational tasks. Instead, they should be recognized as strategic management tools that influence service quality, cost efficiency, and overall business performance.

Furthermore, while cafés demonstrate strong operational inventory practices, the results indicate that strategic inventory planning and forecasting may require further improvement. Strengthening these areas may help cafés achieve greater efficiency and sustainability in their operations.

RECOMMENDATIONS

Based on the findings and conclusions of the study, the following recommendations are proposed:

1. Café owners and managers should implement structured inventory management plans that include clear procedures for monitoring stock levels, receiving and issuing inventory, and documenting inventory transactions.
2. Cafés should adopt data-driven inventory planning techniques, including the use of Economic Order Quantity (EOQ), reorder point systems, and safety stock calculations to improve procurement decisions.
3. Regular training programs for staff involved in inventory management should be conducted to strengthen accountability, improve record accuracy, and ensure consistent implementation of inventory procedures.
4. Cafés are encouraged to utilize digital inventory tracking tools or POS-linked systems to improve real-time monitoring of stock levels, reduce manual errors, and support better decision-making.
5. Future researchers may explore the integration of advanced technologies such as automated inventory systems, predictive analytics, or AI-based forecasting to further enhance inventory management practices in the food service industry.

ACKNOWLEDGMENT

The researcher would like to express sincere gratitude to the individuals and institutions who contributed to the successful completion of this study. Special appreciation is extended to the faculty and administrators of Cebu Technological University – Main Campus for their guidance, academic support, and encouragement throughout the research process.

The researcher also acknowledges the café owners, managers, and staff in Cebu City who willingly participated in the study and provided valuable information regarding their inventory management practices. Their cooperation made this research possible.

Finally, heartfelt thanks are given to the researcher's family and colleagues for their continuous support, motivation, and encouragement throughout the completion of this study.

REFERENCES

1. Ahrens, T., & Chapman, C. S. (2004). Accounting for flexibility and efficiency: A field study of management control systems in a restaurant chain. Contemporary Accounting Research, 21(2), 271–301.
2. Alam, M. M., Uddin, M. A., & Hossain, M. (2024). Inventory management practices and organizational performance in small and medium enterprises. International Journal of Business and Management Studies, 16(1), 45–60.
3. Azharudin, N., & Basri, S. (2024). Strategic inventory management practices in the food service industry. Journal of Supply Chain Management Research, 9(2), 112–125.
4. Bonggolto, A. M., Cabungcal, R. T., & De Guzman, L. P. (2024). Inventory management practices and operational efficiency in hospitality businesses. Journal of Hospitality and Tourism Management, 58, 140–148.
5. Cabungcal, R. T., Gomez, M. A., & Santos, J. P. (2023). Inventory control practices and business performance among small enterprises. Asian Journal of Business and Entrepreneurship, 7(1), 23–34.
6. Duçi, A., Shabani, R., & Krasniqi, F. (2025). Economic order quantity model and inventory optimization in retail operations. International Journal of Industrial Engineering, 32(1), 88–97.
7. Habibullah, M., & Vanany, I. (2025). Inventory management systems and operational efficiency in food service businesses. Journal of Operations and Supply Chain Management, 18(1), 65–78.
8. Hang, N. T. (2024). Inventory management and financial performance of food and beverage businesses. Journal of Business Administration Research, 13(2), 34–45.
9. Panigrahi, S., Behera, P., & Sahoo, B. (2024). Inventory management strategies and firm performance in SMEs. International Journal of Production Economics, 261, 108892.
10. Puspitawati, L., Susanto, A., & Rahmawati, D. (2024). The role of inventory management in improving operational performance in hospitality businesses. Journal of Accounting and Management Research, 11(1), 75–88.
11. Vaka, M. (2024). Inventory management practices in small businesses: A study of operational efficiency. Journal of Small Business and Enterprise Development, 31(3), 420–435.