

Strengthening Sustainable Procurement: A Supply Chain Management Plan for Medium-Sized Restaurants in Cebu City

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Date Submitted:
March 14, 2026

Date Accepted:
April 27, 2026

Date Published:
May 14, 2026

DOI:
10.5281/zenodo.20178199

ABSTRACT

This study assessed the level of implementation of supply chain management practices and the level of awareness of sustainable procurement among medium-sized restaurants in Cebu City. Specifically, it examined supplier coordination, inventory control, delivery reliability, ethical sourcing, cost efficiency, and waste reduction, and determined whether a significant relationship existed between supply chain management practices and sustainable procurement awareness. A descriptive-correlational research design was used, involving 35 respondents purposively selected from five medium-sized restaurants in Cebu City. Data were gathered using a validated researcher-made questionnaire and analyzed through frequency, percentage, mean, standard deviation, and Pearson product-moment correlation. Findings

revealed that supply chain management practices were highly implemented ($M = 3.80$), with inventory control obtaining the highest factor mean ($M = 3.91$). Sustainable procurement awareness was also highly observed ($M = 3.78$), with cost efficiency recording the highest factor mean ($M = 3.80$). However, Pearson correlation analysis showed no statistically significant relationship between supply chain management practices and sustainable procurement awareness, $r = 0.294$, $p = 0.086$. The null hypothesis was therefore not rejected. The findings suggest that although both operational supply chain practices and sustainability awareness are strong, they function independently and require separate but complementary improvement strategies. A supply chain management and sustainable procurement plan is proposed to improve supplier coordination, demand forecasting, delivery reliability, ethical sourcing, cost efficiency, and waste reduction among medium-sized restaurants.

Keywords: *sustainable procurement, supply chain management, inventory control, ethical sourcing, waste reduction, Cebu City*

INTRODUCTION

The hospitality industry increasingly recognizes the importance of environmentally responsible and operationally efficient practices, particularly in procurement and supply chain management. As concerns about environmental impact, resource scarcity, and stakeholder accountability grow, food service establishments are encouraged to move beyond traditional cost-based purchasing toward sustainable procurement practices that include ethical sourcing, waste reduction, environmental responsibility, and long-term value creation. Procurement is a critical part of supply chain management because it connects supplier relationships, inventory systems, and service

delivery processes, thereby affecting both operational efficiency and sustainability outcomes (Blanchard, 2021; Hugos, 2024).

Structured procurement systems and policies are necessary for improving long-term supply chain performance. Organizations with formal procurement frameworks can align purchasing decisions with social, environmental, and economic goals, promote responsible supplier selection, and enhance coordination across supply chain activities (Schotanus & Grandia, 2023; van Berkel & Schotanus, 2021). However, medium-sized food service establishments often face constraints such as limited resources, fluctuating demand, dependence on multiple suppliers, and weak formal procurement systems. These conditions make supplier coordination, inventory management, and delivery reliability essential components of efficient and sustainable restaurant operations (Prakash et al., 2023; Pratap et al., 2022).

In the Philippine restaurant industry, sustainability awareness has increased, yet many establishments continue to prioritize short-term cost savings over structured supply chain management and sustainable procurement systems. Common operational issues include limited procurement policies, inconsistent supplier performance, and insufficient integration of sustainability into daily purchasing decisions (Briones, 2021; Dumayas, 2020). In Cebu City, a major tourism and food culture hub, medium-sized restaurants contribute to local hospitality growth and must maintain responsive supply chains to remain competitive (Department of Tourism, 2023; Montebon et al., 2023). Nevertheless, sustainability initiatives in restaurants are often limited to broad environmental activities and are not always integrated into procurement and supply chain functions (Montebon et al., 2023).

There remains limited empirical evidence on the relationship between supply chain management practices and sustainable procurement awareness among medium-sized restaurants in Cebu City. This study addressed that gap by assessing the implementation of supply chain management practices, measuring sustainable procurement awareness, testing the relationship between the two variables, and developing a practical supply chain management and sustainable procurement plan for medium-sized restaurants.

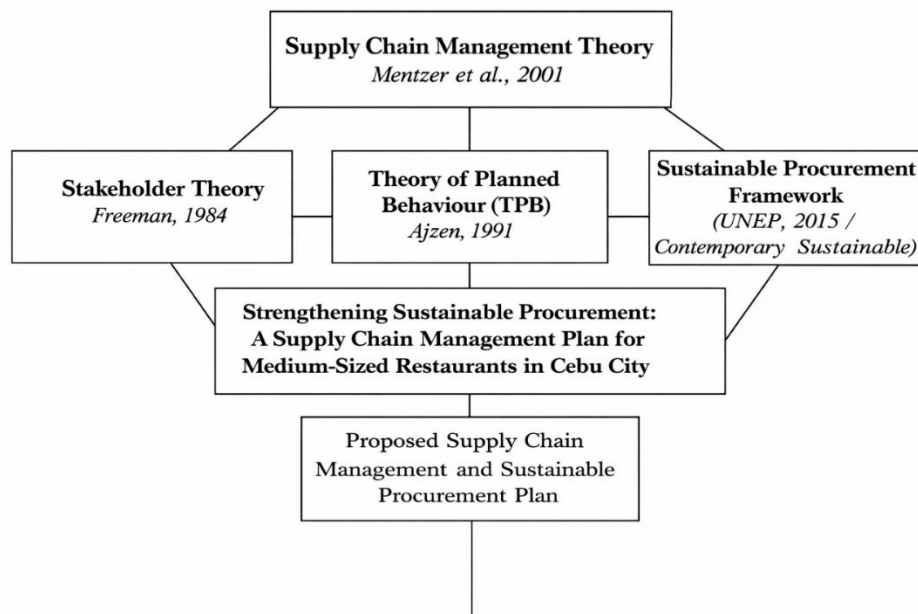


Figure 1. *Theoretical Framework of the Study*

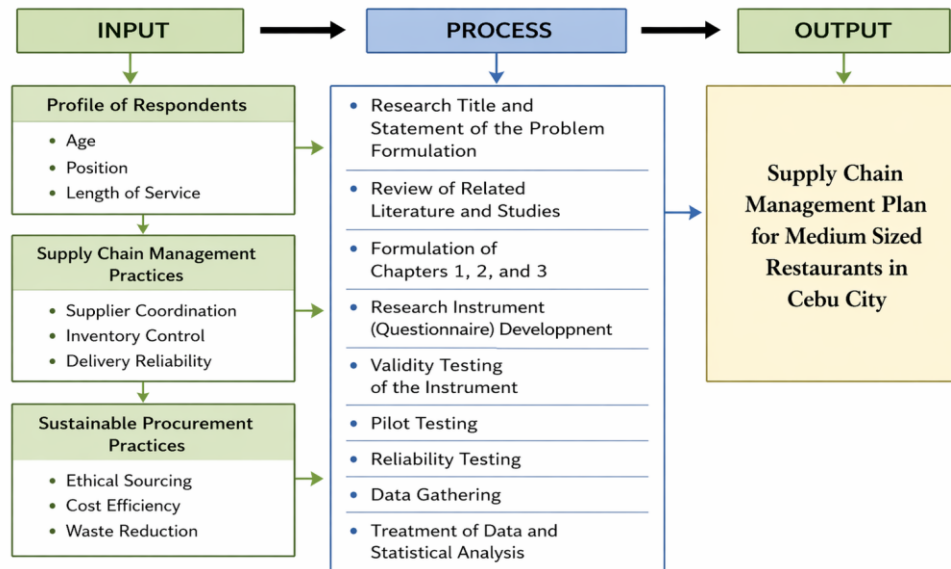


Figure 2. *Research Paradigm/Conceptual Framework*

Literature Review

Supply Chain Management and Sustainable Procurement

Supply chain management is a strategic function that integrates procurement, logistics, inventory, supplier coordination, and delivery processes to improve organizational performance. Foundational frameworks emphasize that supply chain management must be approached strategically to ensure long-term value creation, operational efficiency, and risk reduction (Blanchard, 2021; Carter & Rogers, 2008; Hugos, 2024; Kraljic, 1983). Supplier coordination improves transparency and reduces disruptions through collaboration, while inventory control supports efficiency and waste reduction in perishable environments (Dubey et al., 2022; Ivanov & Dolgui, 2021). Delivery reliability also contributes to operational continuity and service quality (Gunasekaran et al., 2022).

Sustainable procurement integrates ethical, environmental, and economic considerations into purchasing decisions. It requires organizations to consider supplier behavior, legal compliance, cost efficiency, product quality, and waste reduction in procurement decisions (Schotanus & Grandia, 2023; United Nations Environment Programme [UNEP], 2017). In restaurant operations, sustainable procurement may be reflected in ethical sourcing, responsible supplier selection, minimized food and material waste, and cost-effective purchasing that does not compromise quality or environmental responsibility.

Procurement Compliance and Human Factors

Procurement policy and procedure compliance is important for consistent supply chain and sustainability practices. Awareness of procurement policies influences compliance behavior and operational efficiency, while standard operating procedures improve accountability and reduce procurement risks (Testa et al., 2022; Thai & Grimm, 2022). Monitoring mechanisms such as supplier evaluation, auditing, and reporting also strengthen alignment with sustainability objectives (Grandia & Voncken, 2023; Tate et al., 2010).

Human factors influence both supply chain implementation and sustainable procurement awareness. Age, position, and length of service may affect employees' exposure to organizational procedures, authority in decision-

making, and awareness of sustainability practices (Etse et al., 2023; Testa et al., 2022). Employees directly involved in purchasing, inventory, and operations are especially important because their daily decisions shape how procurement systems are implemented and how sustainability principles are applied.

Research Gap

Although previous studies show that supply chain management practices and sustainable procurement are theoretically interconnected, their relationship is not always consistent across organizational contexts. Some studies show that supplier collaboration and inventory systems support sustainability outcomes, while others suggest that sustainability awareness depends on training, policy enforcement, and organizational commitment rather than operational systems alone (Etse et al., 2023; Hoekman & Tas, 2022; Kumar et al., 2022). Local studies in Cebu have examined restaurant efficiency, green initiatives, and operational compliance, but limited evidence directly examines the relationship between supply chain management implementation and sustainable procurement awareness in medium-sized restaurants. This study therefore provides localized evidence for a practical and context-specific procurement plan.

METHODS

Research Design

This study employed a descriptive-correlational research design. The descriptive component was used to determine the demographic profile of respondents, the level of implementation of supply chain management practices, and the level of awareness of sustainable procurement practices. The correlational component was used to determine whether a significant relationship existed between supply chain management practices and sustainable procurement awareness. This design was appropriate because the study examined existing conditions and relationships without manipulating the variables.

Research Locale

The study was conducted in five purposively selected medium-sized restaurants in Cebu City: Gerry's Grill-SM City Cebu, STK Ta Bay! -Capitol, Sunburst Restaurant-Banawa, BIGBY'S Cafe and Restaurant-Ayala Center Cebu, and Abuhan Restaurant-Mango, Cebu City. Cebu City was selected because of its strategic role as a tourism, commercial, and food service center in the Philippines.

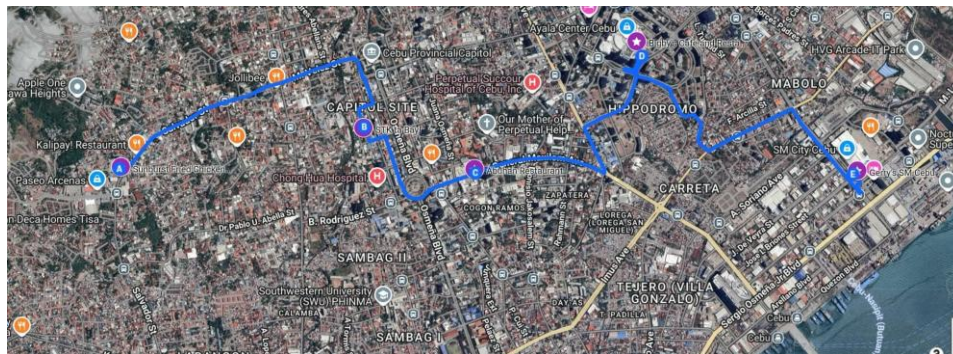


Figure 3. Location of the Selected Medium-Sized Restaurants in Cebu City

Respondents and Sampling Procedure

The respondents were 35 employees from the five restaurants, with seven respondents from each establishment. Purposive sampling was used to select participants who were directly involved in procurement, purchasing decisions, inventory management, supplier coordination, or operational supervision. Respondents

included restaurant managers, assistant managers, supervisors, procurement or purchasing staff, inventory or store custodians, and other personnel with direct exposure to procurement-related functions.

Research Instrument

Data were gathered using a structured researcher-made questionnaire composed of three sections: demographic profile, level of implementation of supply chain management practices, and level of awareness of sustainable procurement practices. Supply chain management was measured in terms of supplier coordination, inventory control, and delivery reliability. Sustainable procurement awareness was measured in terms of ethical sourcing, cost efficiency, and waste reduction. Responses were rated using a four-point Likert scale. The instrument underwent expert validation and reliability testing. Cronbach's alpha values were .752 for the supply chain management section and .776 for the sustainable procurement awareness section, indicating acceptable internal consistency.

Data Gathering Procedure

The researchers secured permission from the selected restaurants before administering the questionnaire. The validated instrument was distributed in printed or online form depending on respondent availability. Completed questionnaires were checked for completeness, coded, tabulated, and prepared for statistical analysis.

Data Analysis

Frequency and percentage were used to describe the demographic profile of respondents. Mean, weighted mean, and standard deviation were used to determine the level of implementation of supply chain management practices and the level of awareness of sustainable procurement practices. Pearson product-moment correlation was used to test the relationship between the two main variables at the 0.05 level of significance.

Ethical Considerations

The study observed informed consent, confidentiality, privacy, voluntary participation, cultural sensitivity, and integrity in reporting. Respondents were informed of the purpose and scope of the study, and their participation was voluntary. Responses were treated with confidentiality and reported only in aggregate form for academic purposes.

RESULTS AND DISCUSSION

Demographic Profile of Respondents

Table 1. *Demographic Profile of Respondents*

Profile Variable	Category	f	%
Age	20-29 years old	18	51.4
	30-39 years old	14	40.0
	40-49 years old	3	8.6
Position	Restaurant Manager	1	2.9
	Assistant Manager	1	2.9
	Supervisor	5	14.3
	Procurement/Purchasing Staff	5	14.3
	Inventory/Store Custodian	5	14.3
	Others	18	51.4
Length of Service	Less than 1 year	7	20.0
	1-3 years	13	37.1
	4-6 years	8	22.9
	7 years and above	7	20.0

Most respondents were aged 20-29 years old (51.4%), followed by those aged 30-39 years old (40.0%), indicating that the restaurant workforce involved in procurement and operations was largely young to early mid-career. In terms of position, the largest group was classified under “Others” (51.4%), while supervisors, procurement staff, and inventory custodians each represented 14.3%. Most respondents had 1-3 years of service (37.1%), suggesting moderate familiarity with restaurant procedures. These results imply that capacity-building initiatives should be directed not only to managers but also to operational employees who directly implement procurement and inventory practices.

Level of Implementation of Supply Chain Management Practices

Table 2. *Level of Implementation of Supply Chain Management Practices*

Dimension	Mean	SD	Interpretation
Supplier Coordination	3.86	0.22588	Highly Implemented
Inventory Control	3.91	0.18014	Highly Implemented
Delivery Reliability	3.64	0.35022	Highly Implemented
Overall Mean	3.80	0.14446	Highly Implemented

Supply chain management practices were highly implemented overall ($M = 3.80$, $SD = 0.14446$). Inventory control obtained the highest factor mean ($M = 3.91$), indicating strong internal monitoring of stocks, record keeping, FIFO practices, and demand-based adjustments. Supplier coordination followed with a factor mean of 3.86, showing that restaurants generally maintain communication and long-term relationships with suppliers. Delivery reliability recorded the lowest factor mean ($M = 3.64$), although still interpreted as highly implemented. This suggests that while restaurants have response mechanisms for delivery concerns, delays may still occasionally disrupt operations. The pattern indicates stronger internal supply chain control than external delivery consistency, supporting the need for supplier performance evaluation and delivery contingency planning.

Level of Awareness of Sustainable Procurement Practices

Table 3. *Level of Awareness of Sustainable Procurement Practices*

Dimension	Mean	SD	Interpretation
Ethical Sourcing	3.77	0.32388	Highly Aware
Cost Efficiency	3.80	0.35254	Highly Aware
Waste Reduction	3.77	0.31832	Highly Aware
Overall Mean	3.78	0.01692	Highly Aware

The respondents were highly aware of sustainable procurement practices overall ($M = 3.78$, $SD = 0.01692$). Cost efficiency recorded the highest factor mean ($M = 3.80$), indicating that respondents strongly considered product quality, long-term savings, and unnecessary cost reduction in procurement decisions. Ethical sourcing and waste reduction both obtained means of 3.77, suggesting awareness of legal supplier standards, responsible sourcing, proper ordering, and procurement-related waste reduction. However, indicators related to supplier-based sustainability, such as recognizing the effect of supplier practices on reputation and considering waste reduction in supplier selection, received relatively lower mean values. This suggests that sustainability awareness is strong but remains internally focused, requiring stronger integration into supplier selection and evaluation.

Relationship Between Supply Chain Management Practices and Sustainable Procurement Awareness

Table 4. *Correlation Between Supply Chain Management Practices and Sustainable Procurement Awareness*

Variables	r	n	p-value	Decision
Supply Chain Management Practices and Sustainable Procurement Awareness	0.29402	35	0.08646	Fail to reject H0

Pearson correlation analysis revealed a weak positive relationship between supply chain management practices and sustainable procurement awareness ($r = 0.29402$). However, the p-value of 0.08646 was greater than the 0.05 significance level, indicating that the relationship was not statistically significant. Therefore, the null hypothesis was not rejected. This finding implies that although both variables were highly evident in restaurant operations, improvements in supply chain management practices do not automatically result in stronger sustainable procurement awareness. The result supports the view that operational systems must be complemented by training, policy support, and sustainability-oriented supplier engagement to translate awareness into consistent procurement practice (Etse et al., 2023; Hoekman & Tas, 2022).

Proposed Supply Chain Management and Sustainable Procurement Plan

Based on the findings, the proposed plan focuses on strengthening delivery reliability, supplier performance monitoring, demand forecasting, ethical sourcing, cost efficiency, and waste reduction. The plan is practical for medium-sized restaurants because it builds on existing highly implemented supply chain practices and highly observed sustainability awareness while addressing specific gaps identified in the study.

Table 5. *Proposed Supply Chain Management and Sustainable Procurement Plan*

Key Area	Objective	Strategies/Activities	Responsible Person	Timeline	Expected Output
Supplier Coordination	Strengthen supplier communication and evaluation	Conduct regular supplier meetings and use a supplier performance evaluation checklist	Restaurant Manager / Procurement Officer	Monthly	Improved supplier accountability
Inventory Control	Enhance inventory efficiency	Use demand forecasting tools and strengthen FIFO monitoring	Inventory Staff / Supervisor	Weekly	Reduced overstocking and improved stock accuracy
Delivery Reliability	Minimize delivery disruptions	Develop delivery schedules, supplier agreements, and contingency plans	Operations Manager	Weekly	Reduced delivery delays
Ethical Sourcing	Improve responsible supplier selection	Adopt supplier accreditation based on ethical and legal standards	Procurement Officer	Quarterly	Improved ethical sourcing compliance
Cost Efficiency	Maintain cost-effective procurement	Use bulk purchasing and supplier negotiation strategies without compromising quality	Restaurant Manager	Monthly	Reduced procurement cost
Waste Reduction	Reduce procurement-related waste	Implement waste monitoring and optimized ordering practices	Kitchen / Inventory Staff	Weekly	Reduced food and material waste
Integration	Align SCM and sustainability	Combine supplier performance metrics with sustainability criteria and create green procurement guidelines	Management Team	Semiannual	Integrated sustainable procurement system

CONCLUSION

The study concludes that medium-sized restaurants in Cebu City have highly implemented supply chain management practices and are highly aware of sustainable procurement practices. Inventory control emerged as the strongest supply chain dimension, while cost efficiency was the most prominent area of sustainable procurement awareness. These findings indicate that the restaurants possess a strong operational foundation for procurement and inventory management, as well as sufficient awareness of ethical sourcing, cost efficiency, and waste reduction principles.

However, the study also concludes that supply chain management practices and sustainable procurement awareness function independently in the selected restaurants, as shown by the nonsignificant relationship between the two variables. This means that strong operational supply chain systems do not automatically translate into deeper sustainability integration, and high sustainability awareness does not necessarily ensure systematic supply chain application. The findings highlight the need for separate but complementary strategies that strengthen delivery reliability, supplier monitoring, demand forecasting, ethical sourcing, supplier-based waste reduction, and formal procurement policies.

Recommendations

Restaurant owners and managers should formalize procurement policies and procedures to strengthen existing supply chain systems. Clear guidelines for supplier evaluation, delivery monitoring, demand forecasting, and inventory documentation should be developed to improve operational consistency and long-term efficiency.

Procurement officers and purchasing staff should integrate sustainability criteria into supplier selection and evaluation. Ethical sourcing, legal compliance, waste reduction, product quality, and cost efficiency should be treated as procurement standards rather than optional considerations.

Inventory and operations personnel should strengthen demand forecasting and waste monitoring systems. Simple digital inventory tools, FIFO monitoring, and routine stock review procedures may help minimize overstocking, reduce food waste, and improve resource utilization.

Medium-sized restaurants should adopt the proposed supply chain management and sustainable procurement plan gradually. Initial implementation may focus on low-cost strategies such as supplier communication, documentation improvement, delivery contingency planning, and sustainability-oriented checklists. Future researchers may expand the study by including larger samples, other food service establishments, financial performance indicators, technology adoption, and organizational culture variables.

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