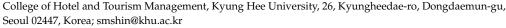




Article

Green Supply Chain Management Implemented by Suppliers as Drivers for SMEs Environmental Growth with a Focus on the Restaurant Industry

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Abstract: This study was designed to better understand how restaurants can achieve effective environmental performance by focusing on their business relationships with suppliers that implement green supply chain management (GSCM). Restaurant suppliers' GSCM was particularly assessed as a two-dimensional concept (external and internal) to explore if those two GSCM practices could possibly encourage restaurant ethical attitudes, thereby encouraging cooperative behaviors ('joint action', 'information sharing' and 'flexibility in arrangement') toward green suppliers. A total of 259 responses obtained from restaurant owners/managers were used for our analysis. Results revealed a significant effect of external GSCM on restaurant ethical attitudes, while internal GSCM was found to have no measurable effect. Further it was found that restaurant ethical attitudes facilitated cooperative behaviors toward green suppliers. More specifically, restaurant 'information sharing' and 'flexibility in arrangement' significantly improved their environmental performance; however, 'joint action' had no such effect. Based on our findings, several important theoretical and practical implications are proposed for restaurants to "go green" more effectively.

Keywords: green supply chain management; restaurant suppliers; restaurant ethical attitudes; restaurant cooperative behaviors; restaurant environmental performance

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1. Introduction

According to a study conducted by the NYU Stern Center for Sustainable Business, consumers have been purchasing more eco-friendly products since the outbreak of the COVID-19 pandemic [1]. This situation led to a 56% increase in dollar sales of "green"-marketed products, resulting in capturing a 17% market share during the first months of 2020. Due to an increased awareness of global environmental issues, today's consumers place high importance and value on business practices that protect the environment [2]. In turn, this situation encourages businesses to act responsibly in terms of the ethical, social, and environmental decisions that affect their operations [3,4]. Heightened public awareness pertaining to any negative environmental impact associated specifically with the foodservice industry is substantial because food production and consumption have a wide and intensive impact on the environment in terms of excessive use of water and energy resources, along with a high carbon footprint [5,6].

Accordingly, numerous academic studies have investigated how customers perceive restaurant efforts to "go green" and what restaurant green attributes are more important for improving customer purchase intentions [7,8]. As evidenced, research has identified fundamental attributes for green restaurants, including food-focused, environment-focused, and administration-focused green practices [9,10]. Likewise, as the majority of the existing literature on green restaurants was conducted from the perspective of customers [11,12], those studies have been limited to the examination of green restaurant attributes based on consumer perceptions and behavioral intentions.

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A prior study by Kasim and Ismail [13] pointed out that although the foodservice industry and its significant and cumulative impacts on the environment are well-known, the implementation of restaurant green practices is commonly reported to be weak. The same study proposed that external factors (e.g., law and regulations, green supplier selection, and stakeholder pressure), along with the organizations' internal efforts, such as top management's ethical concerns and employee training, are essential for restaurants to implement green practices. Those external factors are compulsory and can be more effective in achieving better green practices compared with internal factors being within the purview of internal operations, and thus easy to control.

This study supports the position reported in prior literature that has adopted the stakeholder theory to identify more effective corporate environmental strategies. Stakeholders are any group (s) or individuals who have a significant impact on the achievement of a firm's objectives [14] (p. 46); they include suppliers, customers, government regulators, shareholders, and society [15,16]. In particular, this study's focus is placed on "suppliers" among various stakeholders based on empirical evidence for their critical roles in achieving sustainability for buying firms [17], and restaurants as a small and medium-sized enterprise (SME) sector should best cooperate with suppliers in order to obtain and utilize eco-friendly resources [18,19].

Haleem et al. [20] documented that, due to certain negative effects of sourcing on the environment, suppliers are more likely to feel pressure to implement green supply chain management (GSCM) practices. Another study by Kaur et al. [21] stated that GSCM performed by suppliers takes into environmental consideration "green" throughout the entire supply process, including procurement, product design, manufacturing, packaging, logistics, and distribution. Thus, restaurants should select suppliers who pursue green supply chain management (GSCM) that can offer environmental competitiveness, so that restaurants can achieve better environmental performance, ultimately creating an ecofriendly brand image.

Prior literature has proposed two different components of GSCM, including internal (e.g., monitoring and training systems for eco-friendly operations) and external practices (e.g., green purchasing and waste management) [22,23]. GSCM implemented by suppliers has been widely explored in a variety of contexts such as the automobile [24], chemical [25], electronic [26], and manufacturing [27] industries due to its powerful role in encouraging buying firms' corporate environment engagement. Following this logic, this current study assumes that GSCM conducted by suppliers can facilitate the development of restaurant ethical attitudes.

In the B2B context, cooperation undertaken by two business parties is a key factor for mutual success or benefits [28]. "Sharing similar goals and value" has been identified as a major driver for cooperative behaviors within the buyer–supplier relationship [29]. In particular, shared similar ethical value within the buyer–supplier context leads both parties to work together closely [30]. Another study by Porter and Kramer [31] asserted that the successful cooperation of buyers can be driven by social, legal, and ethical compliance with supplier ethical standards. Therefore, this led us to expect that restaurant ethical attitudes become a critical driver of cooperative behaviors towards green suppliers.

Prior literature has proposed a multidimensional concept of cooperation within the buyer–supplier context, including 'joint action', 'information sharing' and 'flexibility in arrangement' [32,33]. A more recent study by Zhang et al. [34] confirmed that a buyer's effective cooperation greatly contributes to solving environmental problems through its joint action with suppliers. In addition, information sharing on a timely basis is the most important fundamental component of cooperation [35,36]. Lastly, when working with green suppliers, strategic partnerships are required to apply flexibility in arrangement [37].

It is expected that restaurants are able to achieve environmental performance more effectively through their ethical attitudes and cooperative behaviors, stimulated by supplier GSCM. Thus, this study is designed to provide fundamental knowledge regarding key drivers of sustainable growth in the restaurant industry by focusing on GSCM implemented

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by green suppliers. More specifically, the objectives of this study are: (1) to explore how two dimensions (external and internal) of supplier GSCM affect restaurant ethical attitudes, (2) to examine if restaurant ethical attitudes encourage their cooperative behaviors towards green suppliers and, in turn, (3) to examine how restaurant cooperative behaviors improve their environmental performance.

2. Literature Review

2.1. SMEs and Environmental Practices

Because over 95% of all businesses are categorized as SMEs (small and medium-sized enterprises), they collectively represent a huge impact on the global environment [38]. Due to the recognition SMEs have received pertaining to the critical roles they play regarding implementing sustainable operations to reduce environmental pollution, numerous SMEs have begun to identify more effective ways to achieve better environment performance [39]. Although some discussion addresses the position that SMEs are not the appropriate business section to perform environment practices because of their minimal impact on the environment individually, and that SMEs may lack expertise and a full understanding of how to address environmental issues [40,41], more recent literature has provided the opposite position that SMEs are in fact more appropriate to go green than larger companies. This rationale is based upon the short decision-making process of SME's compared to large firms. For instance, SMEs typically have more flexibility and adaptability to make quick changes and decisions to perform operational strategies to respond to new market situations [42]. In particular, the restaurant business is characterized as an SME sector, and is well-known for its significant impact on the environment. Accordingly, restaurants and their green practices became an essential factor contributing to environmental quality improvement, which has ultimately satisfied the demands of today's consumers. Thus, many restaurants within the SME sector provide various efforts to improve their environmental performance by using eco-friendly manufactured products, reducing food waste, minimizing resource use and saving energy [43]. In doing so, the academic literature asserts that SMEs should develop and maintain well-structured networks and alliances between business partners to achieve better environmental practices [44].

2.2. Green Supply Chain Management

The term 'green supply chain management (GSCM)' has been widely used in academic literature to describe business activities and organizational decisions in terms of the acquisition of products and services for the purpose of environmental protection [45–47]. GSCM focuses on applying eco-friendly management into the entire business process, beginning with production and ending with consumer purchasing and consumption [48]. GSCM is also regarded as 'environmental purchasing' [49], representing the adoption of eco-friendly purchases for raw ingredients/materials with less environmentally harmful elements and using fewer materials with more renewable and recyclable resources.

GSCM is well-known to be the best way for businesses to eliminate or reduce air, water, and land pollution, and resources (energy, materials, and products) [17]. Supporting this, prior literature asserted that adopting GSCM is essential in order to reduce the negative effects of commercial and industrial activities on the environment [50], and ultimately contributes to ethical/social and competitive benefits for organizations [51]. Accordingly, GSCM practices have become an important business necessity to meet customer expectations and improve business performance [49,52].

Several studies highlighted that more effective business performances can be achieved by all business processes and should be conducted in compliance with similar goals and visions shared within the supply chain members [22,53]. In this regard, achieving GSCM requires a full integration and collaboration among all supply chain members [23,54,55]. To do so, well-developed networks and relationships are necessary to monitor environmental performance and share useful information with business partners for better environmental practices [56].

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Food production is significantly involved in the consumption of resources, which directly creates a remarkable environmental impact [57]. To address the rising issues regarding eco-environmental practices in the foodservice industry, researchers began to explore effective methods to improve GSCM. For example, Grimm et al. [58] explored essential factors for the foodservice business to overcome complex and unique challenges in performing GSCM. Those essential factors were found to be mainly related to similar morality shared between buyers and suppliers, and the commitment of both parties to their cooperative relationships. Another study by Liang et al. [59] identified well-developed organizational ethical attitudes as the most important driver of conducting eco-environmental practices for the restaurant industry.

Dimensions of Green Supply Chain Management

Several previous academic research studies conceptualized GSCM as a two-dimensional concept including both external and internal practices [22,55]. External GSCM practices represent an organization's involvement and activities in transactions with other supply chain partners for green procurement and sustainable collaboration [60]. Examples of external GSCM practices include eco-friendly design and waste reduction in production and logistics, and transactions with green partners [61]. Internal GSCM practices are based on a firm's internal environment management, which is implemented by internal group members when training employees and monitoring environment performance. Thus, external GSCM relies on business-to-business collaboration between buyers and suppliers, while internal GSCM becomes a means of developing and implementing a strategic spectrum of environmental codes of conduct for internal-level management [62].

2.3. Suppliers' GSCM and Restaurant Ethical Attitudes

The stakeholder theory first proposed by Freeman [14] argues that doing business is more than a matter of generating profit. Stakeholders represent "individuals, groups, or organizations (e.g., customers, employees, shareholders, suppliers, communities, and governments) that either affect or are affected by corporate decisions" [63] (p. 490). The stakeholder theory is based on the nature of the relationships between an organization (e.g., top management) and their stakeholders, whose interests often diverge from one another, and asserts that keeping a balance with incompatible claims among multiple stakeholders is more important than taking into account their own benefits in order to achieve long-term business success [64,65].

Hu et al. [66] stated that corporate ethical (or moral) attitudes toward eco-friendly management would be formed by the environmental concerns of its stakeholders (e.g., customers and suppliers). Accordingly, the stakeholder theory has often been applied to more recent GSCM literature to investigate how firms are motivated to implement eco-friendly operations and how their environmental performance can be improved within the buyer–supplier relationship [67–69].

Stakeholders, including suppliers, can become a normative core of corporate environmental management; thus, this study expected to reveal that restaurant top management and their ethical attitudes can possibly be stimulated and formed by their relationships with green suppliers. This rationale is based on the psychological concept of ethical leadership proposed by prior literature [70]. The authors asserted that ethical leadership in an organization can directly influence employees as well as business partners, ultimately leading them to develop positive ethical attitudes [71]. This logic has also been proven in the individual consumer context. For instance, Mazar et al. [72] revealed that individual consumers perceived ethical value toward their pro-environmental purchases from green retailers. Another study by Connolly and Prothero [73] stated that individuals consuming green products purchased from green retailers tend to be more sensitive about environmental issues, which further facilitates the development of environmental responsibilities and attitudes. Applying this logic to the buyer–supplier context, suppliers' GSCM is assumed to be a powerful driver of environmentally ethical attitudes in restaurants. Thus, this

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study anticipated that both external and internal GSCM implemented by suppliers may significantly contribute to forming restaurant management's ethical attitudes. Accordingly, the following hypotheses were proposed:

Hypothesis 1. *Suppliers' GSCM improves the ethical attitudes of restaurants.*

Hypothesis 1a. external GSCM.

Hypothesis 1b. *internal GSCM*.

2.4. Ethical Attitudes of Restaurants and Cooperative Behaviors toward Green Suppliers

Cooperation between buyers and suppliers is essential for achieving successful mutual goals [74,75]. A study by Squire et al. [76] stated that buyers' cooperation with suppliers is a key factor for business success because both of those parties strive to minimize cost and create better profit. Interorganizational cooperation has been widely addressed in various contexts in terms of its roles on value co-creation and competitive benefits improvement [77]. With an emphasis on the importance of interorganizational cooperation for the foodservice industry, Cho et al. [19] addressed how to improve restaurant performance by focusing on restaurant cooperation with their suppliers. They also found that strategic cooperation with suppliers significantly improved restaurant operations, specifically for new product development.

Johnston et al. [78] proposed that an organization's cooperative behavior can be implemented in three distinct forms: (1) 'joint action' for product development and enhancement; (2) 'information sharing' about operational plans; and (3) 'being flexible' in any situations requiring changes in order volume or cost, contractual terms, and product specifications. Simatupang and Sridharan [79] explained that 'joint action' enables buyers and suppliers to develop a shared calendar and determine ways to deal with differences in demand forecasts, so that they can achieve mutual goals and effective business performance growth. Another study by Tai and Ho [80] noted that 'information sharing' between supply chain members is critical because it helps deal with complicated and uncertain interorganizational processes and activities. In addition, Li and Zhao [81] documented that flexibility can be conceptualized as an organization's capability to make effective responses to changes in business environmental conditions. Thus, 'flexibility in arrangement' can offer more opportunities to a business for better performance [82].

A strong and positive relationship between attitude and behavior has been well-proven in a variety of contexts [83]. For example, Cheung and To [84] demonstrated that organizations having ethical attitudes implement more positive pro-environmental practices. Mazar et al. [72] stated that while buyers are purchasing green products from green suppliers, they are greatly affected by trading with those green suppliers, further leading to their cooperative behaviors. Another study by Gimenez and Sierra [85] asserted that firms motivated by green business partners are more likely to develop desirable interorganizational cooperation. Finally, Burki et al. [86] argued that organizations having higher environmental ethical values or attitudes strive to improve their cooperative relationships with supply members. This discussion led us to expect that restaurant ethical attitudes enforce cooperative behaviors (i.e., 'joint action', 'information sharing' and 'flexibility in arrangement'). Thus, the following hypotheses were proposed:

Hypothesis 2. Ethical attitudes of restaurants improve their cooperative behaviors toward green suppliers.

Hypothesis 2a. 'joint action'.

Hypothesis 2b. 'information sharing'.

Hypothesis 2c. 'flexibility in arrangement'.

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2.5. Cooperative Behaviors of Restaurants toward Green Suppliers and ITS Environmental Performance

Shatkin [87] stated that implementing organizational eco-friendly practices requires supply members (e.g., buyers and suppliers) to be more cooperative. The importance of interorganizational cooperation to achieve better environmental performance has been widely addressed in academic literature [88–90]. More recent studies asserted that when pursuing effective environmental performance, it is necessary for buyers to develop systemic joint planning, share useful information, and understand mutual positions with their suppliers [91].

More specifically, Vachon and Klassen [92] provided empirical evidence that buyer–supplier joint activities regarding environmental issues significantly improved the environmental performance of both companies. Stadtler and Lin [91] asserted that business partners are required to share their knowledge on environmental-related operations for achieving better sustainable outcomes. Grekova et al. [93] asserted that flexibility is one of the desirable ways to conduct cooperative behaviors, and enables buyers and suppliers to resolve any environmental issues. Based on this discussion, this study expected to reveal that restaurant cooperative behaviors directly lead to better environmental performance; thus, the following hypotheses were proposed:

Hypothesis 3. *Restaurants' cooperative behaviors improve environmental performance.*

Hypothesis 3a. 'joint action'.

Hypothesis 3b. 'information sharing'.

Hypothesis 3c. 'flexibility in arrangement'.

2.6. Supplier GSCM and Restaurant Environmental Performance

Generally, organizational performance is assessed by encompassing both financial and nonfinancial performance [94]. In particular, Choi and Hwang [95] demonstrated that a buyer's environmental performance is greatly affected by its suppliers, specifically regarding transactions with green suppliers. Another study by Zhang and Yang [96] confirmed that business relationships with green suppliers enhance environmental performance within the Chinese manufacturing industry.

Zaid et al. [97] demonstrated significantly positive consequences of both external and internal GSCM practices on business environmental performance. More specifically, the same authors reported that suppliers' external GSCM practices (e.g., eco-design and green procurement) directly affected buying firms' environmental performance. Furthermore, suppliers' internal GSCM practices (e.g., monitoring production systems and training employees) were found to be effective in leading buying firms' environmental performance, specifically to reduce the consumption of environmentally harmful materials and food waste. Applying this in the restaurant context, suppliers' GSCM practices may have a significant and direct effect on restaurant environmental performance; thus, the following hypothesis was proposed (see Figure 1):

Hypothesis 4. Suppliers' GSCM improves restaurant environmental performance.

Hypothesis 4a. *external GSCM*.

Hypothesis 4b. *internal GSCM*.

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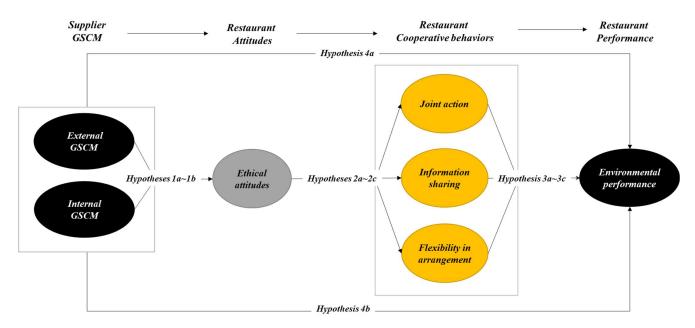


Figure 1. Research model.

3. Method

3.1. Data Collection and Sampling

Data collection was conducted by the largest online research company in South Korea during a one-week period (January 2021). This online survey company has been well-known as having approximately 490,000 nationwide business panels in various industry contexts. The study samples were carefully selected to achieve the study's objectives using three conditions applied to verify qualified respondents to complete our survey questionnaire: (1) respondents are restaurant owners or managers who have the responsibility of selecting suppliers and making decisions on the entire business operations; (2) respondents have transactional relationships with suppliers that implement GSCM; and (3) respondents have had transactional relationships with green suppliers for more than one year.

Applying these criteria, a total of 259 responses were obtained from 164 corporate-affiliated restaurants and 95 independent restaurants. The main menus of the sample restaurants were comprised of Korean (37.1%), fusion (13.5%), bakery (10.4%), Western cuisine (9.7%), fast food (6.6%), Japanese (3.9%), Chinese (2.3%), and buffet (0.8%). On average, those restaurant owners or managers have run the business for three and a half years and have had transactional relationships with green suppliers for about three years.

3.2. Mesaures

In order to develop the survey instrument, a comprehensive relevant literature review process was conducted. As presented in Table 1, this process identified 30 scale items which assess GSCM implemented by suppliers, restaurant ethical attitudes, cooperative behaviors, and environmental performance. The initial part of the survey instrument was designed to examine restaurant owners'/managers' perception of suppliers that implement external and internal GSCM practices using seven items [13,22,23,55]. One example for measuring external GSCM read, "Our suppliers produce and supply products by minimizing waste of resources." One for measuring internal GSCM read, "Our suppliers seek internal cooperation for environmentally friendly operations." The next four items were developed to assess restaurant owners'/managers' ethical attitudes based on Luu [98]. One example read, "Eco-friendly restaurant operations make me feel that I am engaged in moral conduct".

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Table 1. Results of confirmatory factor analysis.

Constructs	Standardized Factor Loadings	CCR	AVE	Cronbach's α	
Supplier external GSCM		0.859	0.605	0.884	
Our suppliers produce and supply products by minimizing waste of resources	0.824				
Our suppliers use eco-friendly packaging materials	0.781				
Our suppliers produce reusable or recyclable products	0.814				
Our suppliers use less resources during transportation	0.685				
Supplier internal GSCM		0.900	0.749	0.875	
Our suppliers seek internal cooperation for environmental	0.924				
improvement	0.924				
Our suppliers operate employee training programs to emphasize eco-friendly practices	0.838				
Our suppliers generate environmental reports for	0.822				
internal evaluation	0.832				
Restaurant ethical attitudes		0.932	0.787	0.940	
Restaurant eco-friendly operations make me feel that I am	0.928				
practicing environmental protection	0.720				
Restaurant eco-friendly operations make me feel that I am	0.915				
engaged in moral conduct					
Restaurant eco-friendly operations make me feel good	0.874				
Restaurant eco-friendly operations make me feel responsible	0.829	0.005	0.711	0.024	
Restaurant cooperative behaviors: Joint Action		0.925	0.711	0.926	
Our restaurant plans the production of menu items for the next	0.804				
season with green suppliers	0.874				
Our restaurant plans to develop new menus with green suppliers	0.874				
Our restaurant plans long-term operational measures with green suppliers	0.906				
Our restaurant solves problems arising from our operations with					
green suppliers	0.829				
Our restaurant shares problems arising from our operations with					
green suppliers	0.798				
Restaurant cooperative behaviors: Information sharing		0.904	0.703	0.900	
We share the inventory of our food ingredients with	0.000				
green suppliers	0.823				
We share our product development plan with green suppliers	0.864				
We share information about our sales revenue with	0.927				
green suppliers	0.927				
We share information about our customer satisfaction with	0.728				
green suppliers	0.720				
Restaurant cooperative behaviors: Flexibility in arrangement		0.925	0.749	0.898	
When our green suppliers experience unexpected situations, we	0.846				
are often very flexible with those situations	0.010				
We adjust my operational plans to maintain relationships with	0.868				
green suppliers					
We accept most of requirements from green suppliers in a	0.882				
positive way		0.050	0.741	0.050	
Restaurant environmental performance	0.010	0.959	0.741	0.950	
Our restaurant has improved efficient use of resources Our restaurant experiences a reduced product loss	0.819 0.809				
Our restaurant experiences a reduced product loss Our restaurant has reduced energy (e.g., electricity, gas, water, and	0.007				
sewage) consumption	0.883				
Our restaurant has reduced the consumption of					
packaging materials	0.866				
Our restaurant has decreased a fee for food waste discharge	0.900				
Our restaurant has decreased a fee for waste treatment	0.873				

Notes: GSCM = green supply chain management; CCR = composite construct reliability; AVE = average variance extracted.

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The next section examined restaurants' cooperative behaviors toward their green suppliers using 12 items. The first five items were used to measure restaurant 'joint action' (e.g., "Our restaurant plans the production of food ingredients for the next season with green suppliers."), four items were used for measuring restaurant 'information sharing' (e.g., "We share information about our customer satisfaction with green suppliers."), and the last three items were employed for measuring 'flexibility in arrangement' (e.g., "When our green suppliers experience unexpected situations, we are often very flexible with those situations.") based on the prior relevant literature [99,100]. Next, seven items were adapted from Trujillo-Gallego and Sarache [101] to measure restaurant environmental performance (e.g., "Our restaurant has improved its efficient use of resources."). All items were measured on a seven-point Likert scale (1 = strongly disagree to 7 = strongly agree). In addition, general information regarding respondents' demographic characteristics (gender, age, and education level) and restaurant operations (type, years in operation, years in transacting with green suppliers).

4. Results

4.1. Construct Validity and Reliability

Because all scale items employed in this study have been verified and widely used in previous relevant studies, a confirmatory factory analysis (CFA) was conducted to check the validity and reliability of the measures using the study data (n = 259). The results, as presented in Table 1, revealed appropriate fit indices (χ^2 /df = 2.246, CFI = 0.934, IFI = 0.934, TLI = 0.924, RMSEA = 0.069). All Cronbach's alpha coefficients were found to be greater than 0.8 (0.875~0.950), supporting internal consistency of the measurement items within each latent variable (Nunnally & Bernstein, 1994). All values of composite construct reliability (CCR) (ranging from 0.859 to 0.959) and all values of average variance extracted (AVE) (ranging from 0.605 to 0.749) were found to be greater than the recommended cut-off values (CCR \geq 0.7 and AVE \geq 0.5) [102]. Thus, convergent validity of the scale measures was supported.

As presented in Table 2, the square root of the AVE values was compared with the correlation for the paired latent variables. Results showed that the greatest correlations between the variables was smaller than all square roots of the AVE values, supporting discriminant validity of the measurement items [102].

	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) External GSCM	4.97	1.01	0.778 a						
(2) Internal GSCM	4.47	1.21	0.707	0.865					
(3) REA	5.20	1.15	0.576	0.319	0.887				
(4) RCB_JA	4.41	1.24	0.571	0.627	0.488	0.843			
(5) RCB_IS	4.06	1.45	0.492	0.606	0.332	0.785	0.838		
(6) RCB_FA	4.81	1.16	0.654	0.458	0.732	0.660	0.623	0.865	
(7) REP	4.25	1.19	0.486	0.475	0.470	0.667	0.751	0.622	0.861

Table 2. Correlations and discriminant validity.

Notes: ^a Diagonals: Square root of AVE from the observed variables by the latent variables; REA: Restaurant ethical attitudes; RCB_JA: Restaurant cooperative behaviors (Joint action); RCB_IS: Restaurant cooperative behaviors (Information sharing); RCB_FA: Restaurant cooperative behaviors (Flexibility in arrangement); REP: Restaurant environmental performance.

4.2. Results of Testing Hypotheses 1 through 4

To verify the hypothesized relationships between external and internal GSCM and restaurant ethical attitudes, cooperative behaviors, and environmental performance, a structural equation model (SEM) was developed. As depicted in Figure 2, results revealed an adequate model fit to our data ($\chi^2/df = 2.667$, p < 0.001, CFI = 0.910, IFI = 0.910, TLI = 0.899, RMSEA = 0.080) [102]. In terms of the effects of the two types of suppliers' GSCM, results revealed that external GSCM practices had a significant and positive effect on restaurant ethical attitudes ($\beta = 0.767$, p < 0.001), while internal GSCM practices had no

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----- H4a: Not supported -----Restaurant Supplier Joint action External GSCM H3a: Not supported H1a: 0.767*** H2a: 0.604*** Restaurant Restaurant Restaurant H3b: 0.424*** H2b: 0.558* Information Environmental Ethical attitudes sharing performance H1b: Not supported H2c: 0.831*** Supplier H3c: 0.220*** Internal GSCM Restaurant Flexibility in arrangement

such effect ($\beta = -0.094$, p > 0.05). Thus, Hypothesis 1a was supported, but Hypothesis 1b was not supported.

Notes: χ^2/df =2.667(p<0.001), CFI=0.910 , IFI=0.910, TLI=0.899 , RMSEA=0.080; ***p<.001

Figure 2. Results of testing Hypotheses 1 to 6.

----- H4b: Not supported .--

This study found a significant and positive effect of restaurant ethical attitudes on their cooperative behaviors toward green suppliers. More specifically, when restaurant managers reported a high level of ethical attitudes, their 'flexibility in arrangement' ($\beta = 0.831$, p < 0.001) was the most significantly improved, followed by 'joint action' ($\beta = 0.604$, p < 0.001) and 'information sharing' ($\beta = 0.558$, p < 0.001). Thus, Hypotheses 2a, 2b, and 2c were supported.

Among the three dimensions of restaurant cooperative behaviors toward green suppliers, only two variables, 'information sharing' and 'flexibility in arrangement,' were found to have a significant and positive effect on restaurant environmental performance. More specifically, restaurant 'information sharing' ($\beta = 0.424$, p < 0.001) and 'flexibility in arrangement' ($\beta = 0.220$, p < 0.001) were significantly effective in improving restaurant environmental performance, while 'joint action' had no such effect ($\beta = 0.102$, p > 0.05). Thus, Hypotheses 3b and 3c were supported, but Hypothesis 3a was not supported.

Lastly, this study tested the direct effects of the external and internal GSCM on the restaurant environmental performance. Results found no significant direct effect of either external GSCM (β = 0.098, p > 0.05) or internal GSCM (β = -0.041, p > 0.05) on restaurant environmental performance. Thus, Hypotheses 4a and 4b were not supported.

5. Discussion and Implications

This study specifically examined how restaurants can achieve more effective environmental performance by focusing on their relationships with green suppliers. Data obtained from restaurant owners/managers were used to verify our expectations. Results provided empirical support for the important roles of green suppliers and their GSCM practices in encouraging restaurants to develop ethical attitudes, thereby cooperating with those green suppliers for better environmental performance. However, our expectations regarding supplier GSCM were partially supported by demonstrating that only suppliers' external GSCM was found to significantly improve restaurant ethical attitudes, while internal GSCM showed no such effect. In addition, restaurant ethical attitudes were found to be significantly and directly associated with their cooperative behaviors toward green suppliers. Among the three-dimensional cooperative behaviors, two dimensions ('information sharing' and 'flexibility in arrangement') significantly contributed to improving restaurant environmental performance. These results provided fundamental knowledge that can assist restaurant management to better understand how to manage inter-firm

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relationships with suppliers for improving their environmental performance. Based on our findings, several important implications are offered, as detailed below.

5.1. Theoretical Implications

The findings generated from this current study adds to the GSCM literature by adopting a different approach to answer a more fundamental question on why and how restaurants "go green." In doing so, this study focused on restaurant business characteristics as a small and medium-sized enterprises (SMEs) sector. Numerous literature has addressed corporate social and environmental responsibility based on the analysis of large companies, which are required to comply with governmental policies and regulations [103,104]. However, their relevant theories and arguments cannot be appropriately applied to SMEs. Hwang et al. [3] reported that more than 90% of all companies of most countries are categorized into an SME sector, thus the roles of SMEs, including restaurants, are pivotal in solving global environmental issues. This view became a particular emphasis of our study on the restaurant–supplier relationships that can motivate restaurants to "go green."

Among two dimensions of GSCM implemented by suppliers, external GSCM was found to be more effective for stimulating restaurant ethical attitudes than internal GSCM. External GSCM is implemented through suppliers' actual actions, such as eco-friendly design and waste reduction in production and logistics systems, while internal GSCM are completely executed within the internal organization. Thus, external GSCM can be more useful for extending and spreading green supplier efforts to protect the environment outside the firm's internal operations [105]. As a result, the actual actions of green suppliers can more significantly improve restaurant environmental commitment and ethical attitudes.

A study by Wang et al. [106] addressed two types (external and internal) of supply chain management (SCM) and their roles on production innovation in the manufacturing industry. The same study demonstrated a significant interplay effect between external SCM and internal SCM on production innovation. Regarding this result, the authors concluded that integrating internal GSCM with external GSCM is necessary to obtain more effective operational benefits for the manufacturing industry. This logic may be reflected in our findings regarding no significant direct effect of internal GSCM on restaurant ethical attitudes. In other words, some sequential relationships may exist between those two types of GSCM. Suppliers' external GSCM may be better implemented by their internal GSCM, which further facilitates the development of restaurant ethical attitudes.

Our findings provide strong evidence for restaurant ethical attitudes and their significant roles on their cooperative behaviors ('joint action', 'information sharing' and 'flexibility in arrangement'). This finding can be explained from a general theoretical perspective that organizations having high moral ethical attitudes are more likely to be committed to their relationship with green suppliers.

This study confirmed that restaurant cooperative behaviors toward green suppliers is indispensable for better environmental performance. Among the three dimensions of restaurant cooperative behaviors, two dimensions ('information sharing' and 'flexibility in arrangement') had a significantly positive effect on restaurant environmental performance, while 'joint action' showed no such effect. Prior relevant scholars addressed the effectiveness of buyer–supplier relationships in terms of environmental performance from a contingency perspective [107,108]. Their arguments were proposed based on the following two conditions: transaction-oriented cooperation is more effective in situations of high product complexity, while relation-oriented cooperation shows high effectiveness in the context of low product complexity; the effectiveness of buyers' cooperation with suppliers for sustainability relies on particular industry contexts.

Restaurant cooperative behaviors can be viewed as a social exchange mechanism to proactively maintain relationships with green suppliers. In particular, among the three dimensions of cooperative behaviors, Yang et al. [109] defined 'information sharing' and 'flexibility in arrangement' as essential components of relationship mechanisms within the B2B context that requires social relationships between business partners to ensure

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mutual benefits. In contrast, 'joint action' is a component of transactional mechanisms that focus on integrating other parties into the operation to reduce opportunism, thereby avoiding any unnecessary economic loss. The scale measures of 'joint action' used for this study capture the extent to which restaurants and suppliers are involved in each other's business operations. In this regard, formal transactional details could be included in a 'joint action' process between restaurants and their suppliers, which restrain them from performing more creative and effective environmental practices. In an effort to interpret these contradictory findings, this study posited that restaurant cooperative behaviors which are based on relational mechanisms ('information sharing' and 'flexibility in arrangement') would be more effective for the restaurant industry, representing a low product complexity business sector to achieve better environmental performance.

5.2. Practical Implications

Our findings provide several important practical implications for restaurants to achieve more effective environmental growth. First, this current study found no significantly direct effect of suppliers' GSCM on restaurant environmental performance. Instead, restaurant environmental performance was found to be indirectly influenced by suppliers' external GSCM through their ethical attitudes and cooperative behaviors. These results imply that restaurants and their efforts to achieve environmental growth should focus on identifying and selecting appropriate green suppliers and developing desirable business relationships. Thus, restaurants should create an eco-friendly organizational culture that can be applied during the process of supplier selection and evaluation, so that restaurants can have a better understanding of green production and management that comply with suppliers' environmental standards.

Second, this study found that restaurant cooperative behaviors toward green suppliers, specifically involving 'information sharing' and 'flexibility in arrangement,' significantly contributed to restaurant environmental performance. This result proposes that restaurants should share their operational situations with green suppliers, such as menu items frequently ordered by customers, party size, and number of customers during peak or off-peak times. This would be greatly helpful for green suppliers to prepare and supply green products in the best manner. Further, suppliers will share critical information regarding product shortages, delivery delays, or other competitors' new eco-friendly marketing promotions with restaurants. Yang and Wang [110] provided empirical evidence that selecting the right suppliers and sharing critical information with them play an essential role in improving green innovative practices. Thus, well-organized communication channels between restaurants and suppliers are necessary for more effective information sharing. In addition, our findings suggest that restaurants should be flexible in responding to any changes in green suppliers' business situations. For example, when green suppliers face issues related to food ingredient security, ingredient shortage, or on time-delivery, restaurants need to be flexible in terms of order quantities. This situation allows suppliers to have a longer amount of time for order-to-delivery. Additionally, restaurants should be flexible in arrangement by using alternative ingredients or temporarily switching a particular menu item to other special menus.

Third, our findings clearly supported the importance of restaurant cooperative behaviors that are facilitated by their ethical attitudes toward green suppliers for better environmental performance. In this regard, restaurants should have more positive attitudes and be open-minded in response to green suppliers' business operational strategies. Developing informal interactions with green suppliers, and communicating business visions and goals, would be of great help for restaurants and allow them to be more cooperative, thereby achieving environmental growth.

5.3. Limitations and Recommendations for Future Research

Several limitations should be addressed regarding our study's sample frame. First, this current study was purposely conducted from the restaurant perspective; thus, all variables

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used in our study were evaluated based on restaurant self-assessment. Future research should analyze dyadic data obtained from both restaurants and their suppliers to verify the relationships hypothesized in this study. Second, although this study found no significant direct effect of internal GSCM on restaurant ethical attitudes, future studies should investigate if there are any sequential relationships between external GSCM and internal GSCM, and how those relationships affect restaurant ethical attitudes. Lastly, this study revealed the important role of restaurant ethical attitudes, formed by suppliers' GSCM in encouraging restaurant cooperative behavior with green suppliers. However, there might be other factors (e.g., green marketing, green education, and level of social responsibility) that can more effectively lead to cooperative behaviors toward green suppliers. Thus, we suggest that future studies identify those potential factors.

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