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The Effect of Green Supply Chain Management Practices on the Global Performance of Food and Beverage Companies in Cameroon

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ABSTRACT

This study examines the effect of green supply chain management practices on the global performance of Cameroon's food and beverage companies. Specifically, it looks at the effect of green procurement, green manufacturing and green distribution on the global performance of food and beverage companies in Cameroon. The study also employed legislation as a control variable. A causal study approach was used, with primary data collected via surveys from 233 ANOR-certified food and beverage companies across Cameroon. Partial Least Squares Structural Equation Modelling (PLS-SEM) was used for this study. The findings conclusively demonstrate a direct and significant positive relationship between green procurement, green manufacturing and green distribution on the global performance of food and beverage Companies in Cameroon. These findings highlight the crucial role of green supply chain management practices in improving sustainability and overall performance in Cameroon's food and beverage sector, arguing for the strategic implementation of green supply chain management practices that go beyond simply compliance. The study recommends strengthening green procurement by sourcing from environmentally responsible suppliers, prioritising sustainable raw materials, and fostering supplier collaboration. Also, it recommends adopting sustainable production processes like renewable energy and waste reduction to lower operational costs and attract eco-conscious consumers, and finally employing energy-efficient logistics, eco-friendly packaging as greener distribution strategies.

Key words: green procurement, green manufacturing, green distribution, global performance

1. Introduction

Growth in global population has tripled from approximately 2.5 billion people in 1950 to about 8 billion people in 2022 causing an increase in demand for food and beverages (Kuwornu et al., 2023). This unusual expansion puts enormous pressure on food and beverage companies, forcing them to drastically increase production and improve their supply chains to satisfy rising global consumer demand. Most importantly, this growth must be accomplished while thoroughly addressing essential concerns such as product safety, sustainability, and the larger environmental implications that directly influence consumer well-being and world health (Kuwornu et al., 2023; Mastos & Gotzamani, 2022). Given these diverse challenges, the significance of a robust company performance cannot be emphasised. Food and beverage companies are pushed by a pressing desire to improve their operational efficiency and strategic skills, not just to survive but also to establish a distinct competitive edge in both domestic and global markets in the face of tight competition.

The food and beverage business, in particular, is one of the most crucial sectors in the world, facing a unique set of environmental, social, and economic issues in its operating procedures (Kuwornu et al., 2023). Food security, public health, and livelihoods are all directly impacted by the food and beverage industry's profound impact on world economies (FAO 2020). Its vast supply chain, which is marked by high energy consumption, high waste production, high water use, and a high amount of greenhouse gas emissions from agricultural production, processing, and transportation, greatly adds to the environmental impact of many economies (Poore & Nemecek, 2018). This emphasises a crucial requirement: food and beverage companies' overall environmental, social, and economic performance are inextricably related to their long-term sustainability and competitive viability. This all-encompassing strategy, known as the triple bottom line, is essential for identifying and proving a business's actual global influence and guaranteeing its continuous prosperity in a market that is fiercely competitive and ecologically sustainable (Elkington, (1997).

A good triple line bottom performance of a company means efficiency, competitiveness, and the ability of the company to adapt to changing environments, which leads to improved financial performance, customer satisfaction, employee engagement, and organisational growth (AlTaweel & Al-Hawary, 2021). Therefore, food and beverage companies prioritise the triple bottom line performance, striving for growth through efficiency, competitiveness, flexibility, customer satisfaction, and staff engagement. Environmental challenges require close attention in these critical sectors, therefore prioritising environmental responsibility enables companies to maintain a favourable image and compete in today's market (Wang et al., 2024). This growing environmental concern has sparked widespread interest in green supply chain management practices across various industries, not leaving out the food and beverage sector.

Green supply chain management practices have been a key challenge for companies and supply chain networks for over a decade (Ali et al., 2016). It has gained more popularity as they incorporate environmental factors into all phases of supply chain management from procurement and manufacture of raw materials to distribution and end-of-life management (Laosirihongthong et al., 2013; Zhu et al., 2013). Ali et al. (2016) found that employing green supply chain management practices may improve a company's profitability, efficiency, brand image, and overall performance. Earlier on, Green et al. (2012) found that the adoption of green supply chain management practices by manufacturing companies improves their environmental and economic performance. On the contrary, Zhu et al. (2013) asserted that green supply chain management practices and economic performance are not directly related. However, Habib et al. (2020) still confirmed that green supply chain management practices significantly impact global performance. The conclusion of his study was later approved by Cankaya and Sezen (2019) and Zaid et al. (2018). This positive relationship exists in the literature because green supply chain management practices help to minimise damages on the environment and the resources of companies, while simultaneously striving for economic benefits to meet the sustainable growth of the society and environment, which could only be attained through these green supply chain management practices (Wenhao et al., 2020).

This study focuses on three main green supply chain management practices namely; green procurement, green manufacturing and green distribution solely because they have a direct effect on the core operations of food and beverage companies (Zhu et al., 2008). These practices enable the promotion of resource efficiency, long-term corporate resilience, and environmental education. Moreover, it is widely held that the effective implementation of green supply chain management practices will yield benefits such as; waste reduction, cost savings, increased awareness of environmentally-friendly marketing, improved employee morale, meeting public expectations and ultimately an overall enhancement of the organisation's environmental, economic, and operational performance (Lorette & Kristie, 2018).

In Cameroon, the implementation of GSCM practices came as a result of the national legislation, international legislation governing the environment, labour and norms. According to Ndongo and Ngnoubamdjum (2020), a significant step in this direction was the introduction of the Joint Ministerial Order No. 004/MINEPDED/MINCOMMERCE, in 2012 and effective April 2014, specifically targeting non-biodegradable plastic packaging that prohibited the manufacture, import, possession, and distribution of non-biodegradable plastic packaging with a thickness of less than or equal to 60 microns, to reduce widespread plastic pollution that clogs waterways and endangers public health, (invest in Cameroon, 2021). This brings the importance of legislation and the necessity for companies to adopt GSCM practices.

However, the food and beverage industry in Cameroon faces major internal obstacles because of its reliance on possible polluted water for manufacturing, the direct effect of agricultural pollution on the quality of raw materials, and the necessity of managing waste and emissions in the face of inadequate national infrastructure (UNEP GRID-Arendal (2024). As speculated by Lorette and Kristie (2018), implementing green supply chain management practices is likely to improve the global performance of companies, but with the aforementioned challenges, this creates uncertainty within the food and beverage industry, and the potential effect of green supply chain management practices on the performance of these companies. This problematic has enabled us to question ourself as follows:

What effect does green supply chain management practices have on the performance of food and beverage companies in Cameroon?

This study looks at the relationship between green supply chain management practices and the performance of food and beverage companies in Cameroon.

2. Literature Review and hypothesis development

2.1 Green supply chain management practices as a driver of global performance

Theoretically green supply chain management practices, positively affects the global performance of companies, this is supported by some fundamental business theories. According to the Resource-Based View (RBV) Theory, a company gains a long-term competitive advantage by acquiring and using valuable, rare, inimitable, and non-substitutable (VRIN) resources and talents. In this context, green supply chain management practices, such as eco-friendly manufacturing processes, strong relationships with sustainable suppliers developed through green procurement, or an optimised green distribution network, become unique VRIN resources that differentiate a company, reduce costs, increase efficiency, and build a strong brand reputation that competitors find difficult to replicate.

The Triple Bottom Line (TBL) Theory, also supports the holistic advantages of green supply chain management practices by emphasising performance across "People, Planet, and Profit," Green procurement, green manufacturing and green distribution practices naturally benefit the "Planet" by lessening their impact on the environment; they also benefit "People" by improving working conditions and community involvement (e.g., ethical sourcing); and finally, they increase "Profit" by lowering costs, encouraging innovation, drawing in eco-friendly customers, and creating a robust, future-proof supply chain, all of which lead to sustainable global performance that goes beyond purely financial metrics.

Empirically several studies were conducted and their findings show that green supply chain management practices have a positive effect on the global performance of companies. Specifically the studies of Obiso et al. (2024) confirmed that there was a positive link between green distribution and company performance. Regarding green procurement Thiga et al. (2023) demonstrated that green procurement improves performance across the triple bottom line. It specifically minimises the ecological footprints, generates economic benefits through cost savings and greater sales, and promotes social benefits such as enhanced reputation and consumer loyalty. Also the study of Erum (2022) revealed that green manufacturing directly improve environmental

performance. This implies that implementing these green supply chain management practices may significantly increase a company's success across the environmental, social, and economic dimensions.

This brings about this hypothesis:

Ho_1: Green supply chain management practices have a significant effect on the global performance of food and beverage companies in Cameroon.

2.2 Legislation as a driver of global performance

In Cameroon, the implementation of green supply chain management practices came as a result of the national legislation, international legislation governing the environment, labour and norms. A framework of laws guides food and beverage production in Cameroon. At the core of this framework is Law No. 2018/020 of December 11, 2018, which outlines the essential principles for regulating food items, animal feed, and food additives. Theoretically the Institutional Theory explains that companies follow specific behaviours, which are frequently motivated by coercive (regulations, government pressure), mimetic (emulating successful peers), and normative (industry standards, ethical expectations) forces. The growing worldwide emphasis on environmental preservation, greater consumer awareness, and stricter rules force companies to implement green procurement, green manufacturing, and green distribution in order to preserve legitimacy, avoid penalties, and obtain social acceptability within their organizational field which positively influences global performance.

Empirically the study of Bor (2021) on green supply chain management practices and the performance of food and beverage companies in kenya showed that legislation played a role in enforcing the implementation of green supply chain management practices which had a positive effect on the relationship between green supply chain management practices and the performance of food and beverage companies.

Hypothesis: H2: legislation has an effect the link between green supply chain management practices and global performance of food and beverage companies in Cameroon.

3. Methodology of the study

3.1 Research Design and Sources of Data

The study adopted a causal research design to identify the cause-and-effect relationship between green supply chain management practices and the global performance of food and beverage companies in Cameroon. Data used was collected through questionnaires from 199 certified food and beverage companies in Cameroon provided by the Standards and Quality Agency (ANOR). These companies were chosen because they are known to respect the green supply chain management practices in terms of international and domestic standards and norms (ANOR, 2024).

3.2 Definition of Variables and Measurements

This study has three variables; independent variable which is green supply chain management practices, the dependent variable which is global performance and **t**he control variables in this study is legislation. They are explained as follows:

i) **Dependent Variable**

Performance: It is defined as the overall performance of a company. It was measured using an index made up of the economic, social and environmental performances, Khan et al. (2023).

ii) **Independent Variables**

The independent variables used in this study were green procurement, green manufacturing and green distribution. They are explained as follows:

Green procurement: This is the integration of environmental management into a company's function to ensure that the material purchases are in line with the environmental standards set by the procuring company. It considers the aspects of eco-labels, cooperation with supplier and environmental audit in procurement decisions (Ojo et al., 2022).

Green manufacturing: This is the act of reducing pollution, conserving energy, and emitting less dangerous substances. It considers items such as, eco design, reduction in waste and pollution, recycling efficiency in resources, energy conservation, substances, and decrease in hazardous substances (Maruthia & Rashmi, 2015).

Green distribution: It is defined as the act of packaging and distributing that result in lowering costs, improving global performance and also, being environmentally friendly. It also looks at items such as, eco-packaging, recyclable packages, reclaim, degradable, reduction of GHG emission, reduced fuel utilisation, and renewable energy sources (Shaikh, et al., 2020).

iii) **Control variable**

- **Legislation:** It is the formal process by which a legislative body creates and approves laws that serve as standards for a community or organisation. Basically, it is the act of making or enacting laws (Garner, 2019). It is measure using the following; awareness of GSCM, adoption of GSCM, regulatory inspections, support for green technologies, improved products and services and government intervention.
- **Company's Category:** This is the type of business a company is engaged in. It is measured as a dummy variable of 1 for the Food the company and 0 for the Beverage company.
- **Years of Practice:** This is the number of years a company has practiced Green Supply Chain Management. It is measured as a dummy variable of 0 and 1 with more than 15 years as the base.

These variables are summarised and operationalised in the Table below:

Table 3.1: Measurement of Variables

	Variables	**Measures**	**Authors**
Dependent Variable:	Global Performance	Environmental Performance Economic Performance Social Performance	Khan et al. (2023) Darwish et al. (2021)
Independent Variable: Green Supply Management Practices	Green Procurement	Eco labeling	Ojo et al. (2022)
		cooperation with suppliers	
		environmental audits	
	Green Manufacturing	Eco design	Maruthia and Rashmi, (2015)
		Reduction in waste and pollution	
		Re-use/ recycle	
		Efficiency in resources	
		Energy conservation	
		Decrease of hazardous substance	
	Green Distribution	Eco-packaging	Shaikh, et al. 2020
		Re-usable/Recyclable	
		Reclaim	
		Degradable	
		Reduce GHG emission	
		Reduce fuel utilization	
		Renewable energy sources	
Control variable	Legislation	Awareness/ adoption of GSCM	Kayikci et al. (2021);
		Compliance to legislation	
		Regulatory inspections	
		Support for green technologies	
		Improved products and services	
		government intervention	

Source: Designed by the author, (2025)

3.3 Model Specification and Data Analysis procedure

The data were analysed using descriptive statistics and inferential statistics. Considering the descriptive statistics, the study made use of central tendencies (frequencies, percentages, mean, and standard deviation, minimum and maximum) to describe the data collected. For the inferential statistics, the study

made use of multiple linear regression analysis precisely the Partial Least Square to test the relationship between the variables of interest, which are green supply chain management practices, global performance. The data were analysed using the Statistical Package for Social Sciences (SPSS version 22), and the regression analysis was conducted using the following model specification:

P = f (green procurement, green manufacturing, green distribution)

$P_{pi} = \beta_{0i} + \beta_1 GP_i + \beta_2 GM_i + \beta_3 GD_i + \beta_4 Le_i + \beta_5 Ye_i + \beta_6 Cat_i + \mu_i$ …….(1)

Where P is the global performance of food and beverage companies

GP is Green Procurement

GM is Green Manufacturing

GD is Green Distribution

Le is Legislation

Ye is Years of Practice

Cat is a category of business

i is the Food and Beverage company

4. Presentation and discussion of results

4.1 Descriptive results

Table 4.1: Summary of Descriptive Statistics

Details	N	Minimum	Maximum	Mean	Std. Deviation
Green Procurement	199	1.83	5.00	3.5469	0.66942
Green Manufacturing	199	2.29	5.00	3.6569	0.65606
Green Distribution	199	2.17	5.00	4.1868	0.52644
Global Performance	199	2.54	4.85	3.8937	0.57758
Legislation	199	2.00	5.00	3.7736	.58537

Source: Authors' Computation from SPSS version 27, 2025

Looking at the descriptive statistics, the main concern is on the mean and the standard deviation. The descriptive statistics confirm that we have 199 observations, as seen in the frequency of the respondents per question. Looking at the mean, we have 3.5469 for green procurement, 3.6569 for green manufacturing, 4.1868 for green distribution, and 3.8937 for global performance. This shows that the independent variable green distribution has the highest mean value, followed by green manufacturing, and lastly, green procurement. The provided descriptive statistics indicate that among the independent variables, green distribution has the highest average score (4.1868), suggesting that food and beverage companies in Cameroon, on average, place the greatest emphasis on green distribution compared to green procurement and green manufacturing.

On the other hand, the standard deviation shows us that the variables usually deviate from the mean, and higher deviations can cause changes in our expectations. The table therefore shows that green procurement has the highest standard deviation, with a value of 0.66942, followed by green manufacturing, with a value of 0.65606, and then green distribution, with a value of 0.52644. A high standard deviation implies that there is a high dispersion of data points from the expected value within the total population, while a low standard deviation shows that there is a low deviation from the expected value. This therefore suggests that the results may deviate and not be as expected.

The highest standard deviation suggests the greatest variety in how companies conduct green procurement. This could indicate that certain companies have well-developed green procurement strategies, whereas others have limited or non-existent practices in this area. Green manufacturing practices with a somewhat smaller standard deviation than green procurement indicate that green manufacturing processes are implemented more consistently. This could suggest that companies have a more consistent understanding and application of environmentally friendly manufacturing practices. Green distribution has the lowest standard deviation of the three, indicating the least variety in how companies handle green distribution. This could reflect a more consistent degree of awareness and adoption of environmentally sustainable distribution techniques among the sampled organisations. The results from the standard deviation appear opposite to those of the mean. Henceforth, the descriptive statistics cannot enable us to have an answer to the research question; therefore, it was essential to do an inferential analysis.

3.2 Inferential results

i) Pre-estimation techniques

- **Heteroscedasticity Test**

Table 4.2: Breusch-Pagan Test for Heteroscedasticity

Chi-Square	df	Sig.
13.431	1	0.001

Source: Authors' Computation from SPSS version 27, 2025

From the results above, we confirm that there is heteroscedasticity in this study. This is based on the fact that 0.001 from the table above is less than the significance level. Implying that the data is heteroscedastic, which is a problem. This therefore implies that ordinary Least Squares is not appropriate for this study.

- **Multi-Collinearity Test**

Table 4.3: Correlation Matrix

DETAILS		Green procurement	Green Manufacturing	Green Distribution	Legislation
GP	Pearson Correlation	--			
GM	Pearson Correlation	0.778**	--		
	Sig. (2-tailed)	0.000			
GD	Pearson Correlation	0.397**	0.481**	--	
	Sig. (2-tailed)	0.000	0.000		
	N	199	199	199	
P	Pearson Correlation	0.486**	0.518**	0.607**	
	Sig. (2-tailed)	0.000	0.000	0.000	
L	Pearson Correlation	0.780**	0.955**	0.609**	--
	Sig. (2-tailed)	0.000	0.000	0.000	

Table 4.3 helped us to identify whether there exists any correlation among the variables of the study. The results from the table showed us that there is a correlation between some variables in our model. The variables concerned are green manufacturing (GM) and green procurement (GP) with a correlation of 0.778; Legislation and green procurement (GP) with a correlation of 0.780; legislation and green manufacturing with a correlation of 0.955.

The existence of a high correlation between the independent variables explained above implies that the results will be biased if used in the same model. That is it will give biased results if Ordinary Least Square technique is used. Therefore, there is a need to use a different estimation technique that takes into consideration the correlation of these independent variables.

- **Tests of Normality**

The normality test results are presented in this study using the graphical method. This is interpreted as follows: From Figure 4.1 below, we observed that there is a straight line and data points that are spread within the graph. The spreading of data from the straight line shows that the data are not normally distributed. Therefore, green procurement is not normally distributed, which is contrary to one of the assumptions of the Ordinary Least Squares technique. From Figure 4.2 below, we also observed that the data widely spread away from the straight line. This implies that the data on green manufacturing are generally not normally distributed. The same goes for the variable green distribution and global performance. This is shown on the graphs below;

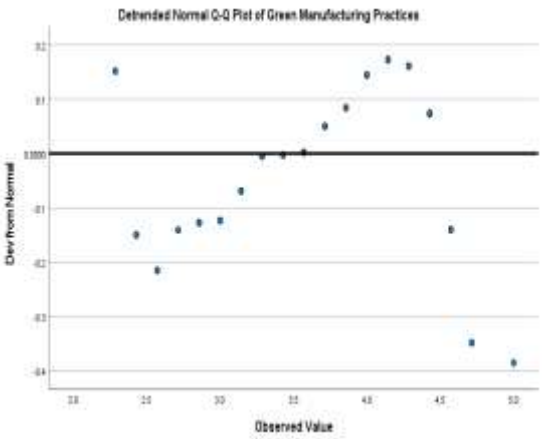

Figure 4.1: Normal Distribution plot of Green Procurement

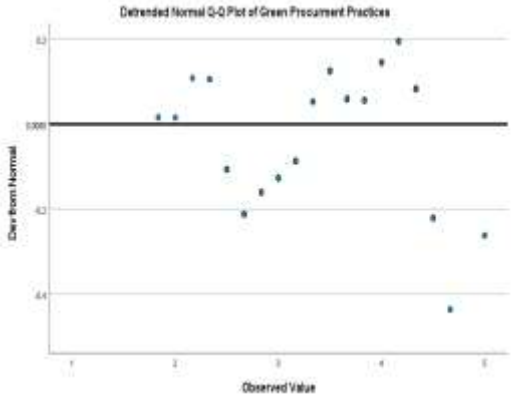

Figure 4.2: Normal Distribution plot of Green Manufacturing

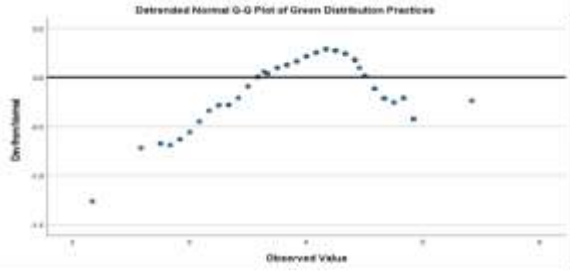

Figure 4.3: Normal Distribution plot of Green Distribution

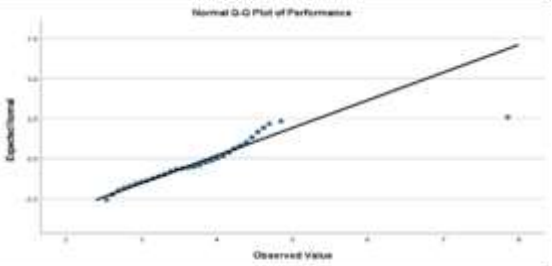

Figure 4.6: Normal Distribution plot of global performance

ii) Regression Results

Since there are problems of multicollinearity, heteroscedasticity, and normality, we opted for the partial least squares to give reliable results that provide answers to the stated objective.

Figure 4.5 below shows the results obtained from the model of the study using the partial least squares:

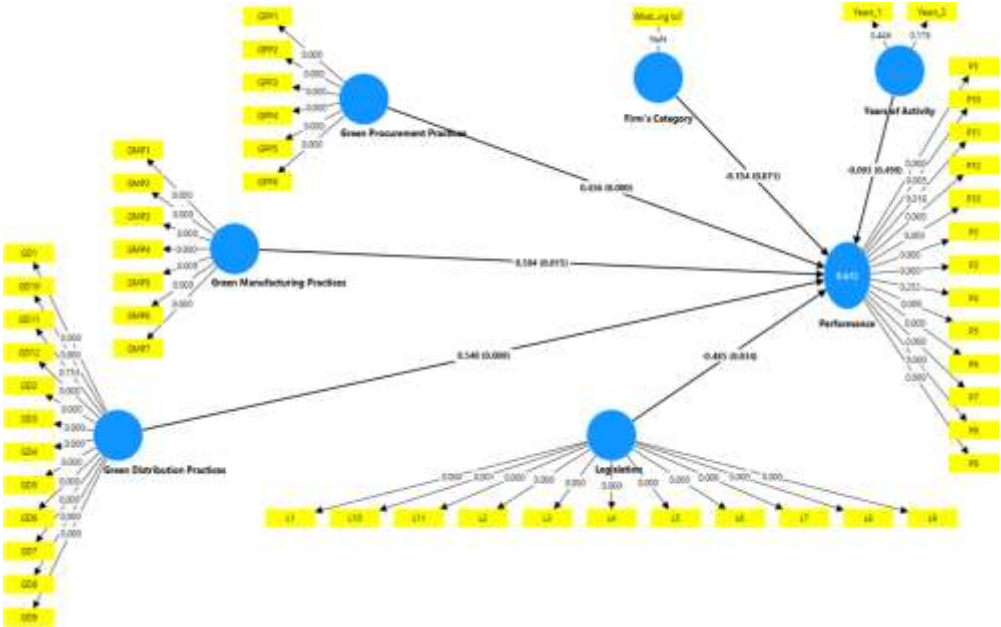

Figure 4.5 shows the results obtained from the model of the study using the partial least squares. It is observed that most variables have a significant impact on the global performance of food and beverage companies. For instance, examining the first variable (green procurement), the coefficient is

0.447 with a p-value of 0.000. The coefficient implies that an increase in green procurement by 1 unit leads to an increase in the global performance of food and beverage companies in Cameroon by 0.447 unit, everything held constant. Looking at the significance of the variable, we observed that green procurement has a significant value less than 0.01, implying that the effect of green procurement on the global performance of food and beverage companies is significantly substantial at 1%, everything being equal.

Regarding the second variable, green manufacturing, figure 4.5 above indicates that green manufacturing have a coefficient of 0.492 and a p-value of 0.018, which is significant. The coefficient implies that an increase a rise in green manufacturing by 1 unit leads to an increase in the global performance of food and beverage companies in Cameroon by 0.492 unit, everything held constant. Looking at the significance of the variable, we observed that green manufacturing has a significant value less than 0.1, implying that the effect of green manufacturing on the global performance of food and beverage companies is significant as in the case of green procurement.

For the third variable, green distribution (GD), figure 4.5 shows that green distribution has a coefficient of 0.547 and a significant value of 0.000. This implies that an increase in green distribution by 1 unit leads to an increase in the global performance of food and beverage companies in Cameroon by 0 547 unit, everything held constant. Looking at the significance of the variable, we observed that green distribution has a significant value less than 0.1, implying that the effect of green distribution on the global performance of food and beverage companies is significant as in the case of green manufacturing and green procurement.

The results obtained from the model of the study using the partial least squares can further be tabulated as follows in table 4.4.

Table 4.4: Summary of regression results between green supply chain management practices and global performance

	Original sample (O)	**Sample mean (M)**	**Standard deviation (STDEV)**	**T statistics (|O/STDEV|)**	**P values**
GD -> P	0.548	0.567	0.081	6.746	0.000
GM -> P	0.504	0.498	0.207	2.434	0.015
GP -> P	0.456	0.422	0.107	4.248	0.000
Legislation -> P	-0.485	-0.473	0.228	2.126	0.034
Category -> P	-0.154	-0.156	0.085	1.804	0.071
Years -> P	-0.093	0.014	0.137	0.675	0.499

Source: Author's Computation using Smart PLS 4, 2025

From table 4.4 above, looking at the variable green procurement, the results of our coefficients and the significance value of 0.548, and p-value of 0.000 it implies that when there is an improvement in eco-labelling, cooperation with suppliers, and environmental awareness, there is also an improvement in the global performance of food and beverage companies in Cameroon. This suggests that companies should consider the recyclability and renewability of products when making procurement decisions. By respecting such practices, food and beverage companies are likely to implement effective green supply chain management practices, thereby improving their global performance. Moreover, they should seek out supplies that are energy-efficient and have a lower carbon- footprint, evaluate second-tier suppliers for environmentally friendly practices, assess environmentally friendly practices among second-tier suppliers in procurement decisions and should develop environmental awareness among employees in the procurement department. This could justify the positive effect green procurement has on the global performance of food and beverage companies. The result is in line with the study by Thiga et al. (2023), who revealed that green procurement and business success were found to be strongly positively correlated by their analysis.

For the second variable green manufacturing, from the results of our coefficients and the significance value of 0.504, and p-value of 0.015; it means that eco-design, waste, efficiency in resources, re-use, recycling, and energy conservation are essential practices related to green manufacturing that can help to improve the global performance of food and beverage companies in Cameroon. This is achieved by practising quality management, reducing waste, enhancing the full utilisation of resources, protecting against hazardous materials, implementing recycling designs, and improving the utilisation of resources. This study is similar to that of Erum (2022) who found green manufacturing to have a positive effect on global performance.

For the third variable green distribution, with the significance value of 0.456 and the 0.504, and p-value of 0.000 the finding imply that when there is an improvement in eco-packaging, reclaim, reduction of greenhouse gas emissions, and fuel utilisation improves, there is also an improvement in the global performance of food and beverage companies in Cameroon. Therefore, companies should distribute products together, rather than in smaller batches, reduce GHG emissions, employ transport modes that generate less air and noise pollution (e.g. rail, water as opposed to road and air), and employ transport modes that use alternative fuel (e.g. electricity, ethanol, biodiesel, hydrogen, etc). Moreover companies should cooperate with logistics companies that abide by environmentally friendly principles and should utilise a robust information system and innovative management to ensure more efficient loading, scheduling, and routing. They should also deliver their goods directly to the user site. In respecting such practices, the food and beverage companies are likely to implement effective green distribution practices and thus improve their global performance. The findings obtained from the results made us know that most food and beverage companies in Cameroon have been implementing these practices. Thus, it justifies the positive effect of green distribution on the global performance of food and beverage companies in Cameroon.

In conclusion, the findings strongly assert that the integration of green procurement, green manufacturing, and green distribution practices in the business operations of companies is an essential driver for improving the global performance of food and beverage companies in Cameroon. By prioritising environmental considerations across their supply chains, food and beverage companies will not only achieve sustainable operations but also significantly increase their business success overall.

5. Conclusion

It is important to recall that the main objective of this study was to find out the effect of green supply chain management (GSCM) practices on the global performance of food and beverage companies in Cameroon. Specifically, we looked at GSCM in terms of green procurement, green management and green distribution.

The results showed us that there is a direct and significant relationship between all the green procurement, green manufacturing, green distribution used and the global performance of food and beverage companies in Cameroon. Therefore, this implies that we reject the stated null hypothesis and conclude that green supply chain management (GSCM) practices have a significant effect on the global performance of the food and beverage companies in Cameroon.

5.1 Recommendation

Based on the study's findings, which highlight the strong positive relationships between green procurement (GP), green manufacturing (GM), and green distribution (GD) and global performance, several key recommendations can be made for companies seeking to enhance their sustainability efforts and global performance.

Firstly, it is necessary to strengthen green procurement; the positive relationship between green procurement and global performance underscores the importance of integrating sustainability into procurement strategies. To leverage this connection, companies should prioritise sourcing products and materials from suppliers who adhere to environmentally friendly practices. This could involve selecting sustainable raw materials, ensuring that suppliers adhere to ethical labour practices, and selecting vendors who are committed to reducing their carbon footprint. By embedding sustainability into procurement, companies not only contribute to environmental preservation but also enhance their brand image, appeal to eco-conscious consumers, and potentially reduce costs through more efficient resource use.

Additionally, companies need to invest in green manufacturing, given the strong positive correlation between these practices and performance. Consequently, companies should focus on adopting more sustainable production processes. Companies can explore renewable energy sources, invest in energy-efficient machinery, and implement recycling or waste reduction initiatives within their operations. By transitioning to greener manufacturing practices, companies can lower operational costs, attract environmentally conscious consumers, and gain a competitive edge in an increasingly sustainability-driven market.

Thirdly, companies need to strengthen their green distribution practices. Similarly, the positive relationship between green distribution and global performance suggests that companies should adopt greener distribution strategies. Companies can optimise their logistics by adopting more energy-efficient cars, using eco-friendly packaging, and optimising delivery routes to reduce fuel consumption. Another key area is the use of carbon offset programs, where companies invest in projects that help reduce emissions during distribution. By improving distribution practices, companies not only reduce their environmental footprint but also enhance their reputation as responsible corporate citizens, which can lead to increased customer loyalty and market share.

5.2 Limitation and suggestion for further research

This study has limitations due to the lack of research on green supply chain management practices in underdeveloped countries, particularly in Cameroon.

Firstly, the findings of this study are relevant only to decision-makers in the food industry. Perhaps if the study could cut across different industries of manufacturing, the findings could benefit other industries. Secondly depending on a single respondent per company may result in prejudice. Individual opinions and skills may vary within a company, and relying solely on one person's perspective may not accurately reflect the overall corporate policy and performance. To overcome this, future study should incorporate surveys of a large number of respondents from different departments within each company, such as procurement, production, and environmental management.

Secondly, the research focuses on the global performance of major manufacturing companies registered with ANOR. This may not accurately represent the entire food and beverage industry in Cameroon, which includes a substantial number of small and medium-sized companies. Future studies should concentrate on SMEs to have a better understanding of the GSCM- global performance link in this sector of the business.

Also this study focuses on a cross sectional study perhaps a longitudinal study conducted in future to determine the real effect of these green supply chain management practices on the global performance of food and beverage companies to determine if the effect changes over time or stays the same thereby making the findings more reliable.

Additionally, it will be crucial to monitor and adapt to regulatory and market developments. As companies invest in Green procurement, Green Manufacturing, and Green Distribution, it is essential to stay informed about evolving legislation and market trends.

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