Innovations

Harmonizing Eco-Efficiency and Customer Satisfaction: Investigating Sustainable Practices in WA Municipality's Hospitality Sector

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Abstract

Purpose*: This research examines the link concerning sustainable supply chain practices and customer satisfaction in the context of Wa Municipality and in the sector of hospitality.* ***Design/Methodology/Approach****: Utilizing a hypothesized model grounded on the evaluative congruity theory and survey data from 200 respondents across the hospitality industry in Wa municipal using PLS-SEM as the data analysis approach.* ***Findings****: First, the findings indicate that sustainable supply chain's social dimension is correlated to customer satisfaction. Furthermore, sustainable supply chain's environmental dimension is correlated to customer satisfaction. Additionally, sustainable supply chain's economic dimension is correlated to customer satisfaction.* ***Practical Implications****: This implies that sustainable supply chain practices should deeply address customer's core needs and expectations in the context not only to enhance customer satisfaction but also to boost business performance.* ***Original Value****: This research has adopted the evaluative congruity theory while exploring the different links concerning sustainable supply chain practices and customer satisfaction by providing insights to improve both customer satisfaction and customer retention in the hospitality industry.*

Keywords*: Sustainability, Hospitality, Eco-Efficiency, Supply Chain, Customer Satisfaction, Ghana*

Introduction

Researchers have made significant progress concerning supply chain management and sustainability, expanding environmental protection to this field due to the emergent recognition of supply chains' critical role in environmental sustainability(Clement et al., 2024).For Gawankar (2017)the increasing complexity and dynamicity of supply chain operations necessitate the improvement of competitive advantages and operational strategies to increase organizational performance. Supply chain management development has led to a significant shift in focus, from solely emphasizing inventory management control to incorporating a broader range of factors that drive business success. Specifically, modern supply chain management now prioritizes customer sensitivity, market competitiveness, and strategic partnerships to deliver enhanced customer experiences, improved efficiency, and increased revenue (Zhang et al., 2018; Das & Hassan, 2021). Organizations are recognizing that sustainability aspects are very

crucial in their supply chains for long-term success, environmental preservation, high returns, efficiency improvement, and financial growth (Rahman et al., 2020; Das & Hassan, 2021).

Today, businesses and their suppliers are gradually being alleged countable for the ecological, societal, and cost-effective effects of their operations (Koberg & Longoni, 2019). For Carter and Rogers (2008) sustainable supply chain management is the strategic approach that integrates the ecological, societal, and cost-effective goals during the whole supply chain procedure for businesses to achieve sustainable results. The hospitality industry has seen a momentous increase in sustainable supply chain practices over the past decade, driven by stakeholder pressures and academic interest in understanding the driving forces behind sustainable management and its impact on the industry (Modica et al., 2018; Clement et al., 2024). Effective management of sustainable supply chain activities is fundamental for achieving both social profits and environmental sustainability. As opined by Manavalan and Jayakrishna (2018), sustainable practices in supply chain operations are crucial for environmental health and society's well-being, especially in developing countries, impacting human civilization, governments, and environmentally responsible businesses (Das & Hassan, 2021).The hospitality business has witnessed a major move concerning sustainability. Sustainability is increasingly influencing customers' perceptions and evaluations of businesses, increasing also their loyalty and readiness for expensive prices (Modica et al., 2018). Additionally, governments and community organizations are recognizing that sustainability is crucial for businesses that operate in the tourism and hospitality sectors. Thus, this brings businesses to implement long-lasting green principles and practices (Modica et al., 2018).Researchers have done a lot of research on sustainable hospitality, reflecting the growing recognition of its importance. Studies are now examining the underlying drivers of sustainability, its far-reaching consequences, and the most effective strategies for implementing and evaluating responsible practices(Chen, 2015). These studies provide valuable insights into how consumers respond to sustainable practices, including their perceptions of social responsibility, eco-friendliness, and economic sustainability. Sustainability in supply chain management is very important hospitality businesses, but there is a gap in empirical research on the combined effects of environmental, social, and economic dimensions on customer satisfaction (Wangsa et al., 2022). Previous literature focuses on environmental aspects or social issues, but the triple-bottom-line approach has received limited academic consideration. The current research bridges this gap by exploring the present topic in Wa municipality, focusing on the combined effects of all three sustainability dimensions. Customer satisfaction is crucial for business growth and survival, and businesses must implement the right strategies to meet the expectations of their customers. Therefore, this research aims to scrutinize the connection that exists between these variables and to raise the following interrogation: What are the links between sustainable supply chain and customer satisfaction?

Thus, this research addresses these specific objectives:

- To ascertain that the social aspect of sustainability is strongly associated to customer satisfaction
- To establish that the environmental aspect of sustainability is strongly associated to customer satisfaction
- To ascertain that the economic aspect of sustainability is strongly associated to customer satisfaction

Literature Review and Hypotheses Development

Theoretical review

Theoretical review serves as a foundation for research, providing a clear direction and theoretical underpinnings. The study seeks to enhance applicability of the findings by grounding them on the Evaluative Congruity Theory (ECT), thereby increasing their relevance, acceptability, and generalizability (Agyem, 2018).

Evaluative Congruity Theory

Developed by Sirgy in 1984, the Evaluative Congruity Theory (ECT) theorizes that evaluative congruity refers to cognitive congruence procedure in which a stimulus or action is assessed by matching perception to elicited referent cognition. The cognitive process of evaluative congruity, as proposed by Sirgy (1984), yields an emotional state or a motivational state. Customer satisfaction and dissatisfaction are considered emotional states because they prompt consumers to reassess their current situation and explore alternative options to mitigate dissatisfaction or achieve future satisfaction.

The Evaluative Congruity Model by Yüksel and Yüksel (2008) suggests three states of congruity: congruity, incongruity, and positive incongruity. Negative incongruity leads to dissatisfaction, while congruity produces neutral evaluation or satisfaction. Positive incongruity results in satisfaction. Sirgy's model suggests multiple comparison processes are more effective in explaining consumer satisfaction, focusing on congruities between perceptual and evoked states. This approach proposes that satisfaction is not exclusively dogged by the comparison between expected and actual performance, but rather by the congruence between multiple cognitive states, including perception, evoked referent cognition, and ideal product performance. Evaluative Congruity Theory (ECT) is significant because it explains the different satisfaction levels and dissatisfaction levels occasioning diverse assumptions and performance outcomes. (Chon, 1992).Satisfaction levels according to the Expectancy-Disconfirmation Paradigm are consistent across different performance combinations, while the Evaluative Congruity Theory suggests that satisfaction is affected by the congruence between expectations and performance, not just disconfirmation (Chon & Olsen, 1991).Chon et al. (1995) proposed that satisfaction levels vary according to perceptions related to expectations and performance. They found that tourists are most satisfied when their expectations are negative but their perceptions are positive and least satisfied when expectations are positive but perceptions are negative. Sirgy's theory advocates that satisfaction is affected by both expectations and performance, as well as the product image and the consumer's image. He classifies product images as

functional and symbolic. The Evaluative Congruity Model, an alternative explanation, shares similarities with the Expectancy-Disconfirmation Paradigm, but may not be suitable for situations where customers have no prior expectations. The theory is relevant to sustainability supply chains, as stakeholders evaluate sustainability initiatives positively when they align with their beliefs about social justice, equity, human rights, environmental conservation, and economic growth and development.

Conceptual Review

Customer Satisfaction

A crucial indicator of quality for both products and services is customer satisfaction, which is shaped by the buyer's experience with the purchase and use (Fan et al., 2021). Because it can result in higher consumer spending and demand, customer satisfaction is a major factor in business performance (Fornell et al., 2016; Fornell et al., 2010). Nassè (2022) and Nassè (2024) define customer satisfaction, by emphasizing it as the degree of happiness or pleasure expressed by a customer when s/he purchases a given company's products or services. It has a critical role in marketing strategies and business success. Industries prioritize customer value and satisfaction to ensure business survival. Companies should organize and strictly follow customer identification procedures. Internal customers significantly influence service quality. To achieve mass customization, businesses should segment their markets, analyze customer needs, and ensure high volumes of goods and services. This ensures businesses deliver high volumes simultaneously.

Sustainable Supply Chain Management

In its traditional aspect, supply chain management aims to improve economic value and ensure long-term profitability (Xu & Gursoy, 2015a). According to Hassini et al. (2012) economic sustainability is crucial, but focusing solely on it may not suffice as consumers, grassroots organizations, communities, governments, shareholders, and competitors increasingly demand companies prioritize responsible business practices and social accountability. To ensure the sustainability of supply chain operations, organizations must coordinate their efforts throughout the entire supply chain (Luthra et al., 2017; Mathivathanan et al., 2018). Research indicates that promoting sustainable business practices positively influences consumer perceptions and behavior, leading to increased profitability for businesses (Jayaraman et al., 2012).According to Kleindorfer et al. (2005) sustainability in business emphasizes responsibility for all operations, considering the interplay between the environment, profit, and people. Businesses must adopt the triple bottom line reporting (3BL) approach to achieve sustainability by establishing a coordinated supply chain that considers environmental, social, and economic factors (Xu & Gursoy, 2015a). Sustainable supply chain management encompasses incorporating the social, environmental, and economic goals of a business through complete coordination of inter-organizational business processes to improve long-term economic performance (Carter and Rogers, 2008). Sustainable supply chain management is a planned approach that coordinates acompany's economic, societal, and environmental objectives by effectively managing core market processes (Busse,

2016). Hassini et al. (2012) and Zhang et al. (2018) demonstrate that sustainable supply chain management (SSCM) refers to a strategic process that balances at the same time social, economic and environmental factors to maximize profitability and minimize environmental impacts. Sustainable supply chain management puts an emphasis on addressing the core expectations and needs of contemporary generations by also preserving future generations' opportunities and capacity (Ashby et al., 2012). Companies must implement sustainability actions from the supply chain's inception, focusing on sustainable supplier selection and collaboration. Finally, Hollos et al. (2012) recognize that the consumption of green products may not significantly foster sustainability practice.

Environmental Component of Sustainable Hospitality Supply Chain Management

The hospitality industry is embracing environmentally conscious business practices, focusing on environmental collaboration and monitoring to ensure sustainability (Xu & Gursoy, 2015a). For Xu and Gursoy (2015a) product design focuses on purchasing greener products with minimal environmental impact, such as using safe cleaning chemicals. Service process design primarily involves adopting greener technologies like solar energy to reduce energy consumption and electricity and water usage(Kasim et al., 2014; Xu & Gursoy, 2015a).

Green rooms, constructed using reused and remanufactured furnishings and products, are a sustainable approach to extend product lifecycles (Schendler, 2001). Hospitality companies are integrating environmentally friendly practices, such as recycling, to achieve sustainability and increased profitability (Goodman, 2000). The control of environmental management systems and pollution are common practices for monitoring the environment, with hotels reducing harmful chemicals and hazardous materials to reduce pollution and carbon footprint. Goodman (2000) advocates that environmental management systems should include temperature control, evaluation, and information systems to facilitate information sharing and the environmental impact control of hospitality businesses. Berezan et al. (2013) suggest that sustainable hospitality supply chain management, especially environmental aspects, positively impacts customer satisfaction by addressing economic and social interfaces within the natural environment. Xu and Gursoy (2015b) highlight the importance of environmental protection in the hospitality industry, which faces pressure from environmentalists and grassroots organizations to reduce its environmental impact. Eco-friendly initiatives have been successful in enhancing customer satisfaction and minimizing the industry's environmental footprint. Green practices in hotels can enhance customer satisfaction by contributing to a sustainable future (Berezan et al., 2013; Prud'homme & Raymond, 2013; Gao & Mattila, 2014). In view of the above review of the literature, the first assumption is that the social aspect of green supply chain affects customer satisfaction:

H_1: Social aspect of sustainability is associated with customer satisfaction.

Social Component of Sustainable Hospitality Supply Chain Management

The social dimension of a sustainable hospitality supply chain entails that sustainable hospitality supply chain involves both shareholders and stakeholders, with

employees playing a central role in performing exceptional service quality, thereby boosting customer satisfaction and loyalty (Xu & Gursoy, 2015a). To foster a sustainable hospitality supply chain, companies should prioritize employee training, well-being, and engagement, fostering a long-term career view rather than a temporary job (Goodman, 2000). Costen and Salazar (2011) suggest that improving employee well-being can lead to satisfied and loyal employees, who enhance financial performance through high-quality services. Supply chain businesses' training programs can enhance customer satisfaction, benefiting both shareholders and stakeholders (Xu & Gursoy, 2015a).Companies should prioritize the social dimension of sustainable hospitality supply chain management, focusing on fair trade practices (Xu & Gursoy, 2015a). For Font et al.(2008)hospitality companies are actively involving themselves in their communities by purchasing locally and promoting local products and services. Goodman (2000) suggests that businesses can foster long-term partnerships with suppliers to offer environmentally conscious products and services, while adhering to government regulations (Font et al., 2008). Adopting socially responsible practices, such as sustainable hospitality supply chain management, may enhance customer satisfaction by prioritizing employee care and workplace standards(Costen & Salazar, 2011; Xu & Gursoy, 2015b). Businesses create public corporate codes that outline employee working environments, incorporate sustainability principles into supply chain processes, and ensure employee acceptance and involvement for social responsibility (Xu & Gursoy, 2015b). Martínez et al. (2015) find that employee health and safety improvements and training increase both employee satisfaction and customer satisfaction, with interpersonal relationships in the hospitality sector (Kassinis & Soteriou, 2003). Businesses that exhibit socially responsible behavior can enhance customer satisfaction from the perspective of external stakeholders. Closs et al. (2011) suggest that long-term relationships between businesses and their channel partners can improve long-term viability. Local, community-focused business initiatives increase customer satisfaction and preferences, as consumers are loyal to local products(Holmes & Yan, 2012). To conclude, Leo and Heo (2009) suggest that activities related to the social dimension can enhance customers' satisfaction through improved firm performance, reputation, and brand image.

In view of the above review of the literature, the second assumption is that the environmental aspect of green supply chain affects customer satisfaction:

H_2: Environmental aspect of sustainability is associated with customer satisfaction.

Economic Component of Sustainable Hospitality Supply Chain Management

Through revenue growth, cost control, and market share expansion, the economic dimension of a sustainable hospitality supply chain aims to improve corporate performance while minimizing adverse social and environmental effects. Improved operational effectiveness, risk management, and customer loyalty can all lead to more revenue (Goodman, 2000). Kasim et al. (2014)and Schendler (2001) state that cost control can be achieved through evaluating both maintenance and housekeeping practices, utilizing long-lasting furniture, and providing employee training. An increase in market share can result from an enhanced image reputation that also reinforces

customer demand (Nair & Narasimhan, 2006; Schwartz et al., 2008). Sustainable supply chain practices provide markets opportunities that contribute to persuade co-friendly customers who are eager to support green policies(Kang et al., 2012).The lack of profitability may hinder businesses from implementing sustainable practices in the hospitality sector, potentially negatively impacting their bottom line. Business survival and development aim for maximizing profits, and sustainable hospitality supply chain management significantly impacts customer satisfaction. Strong financial performance enhances quality goods and services (Lo et al., 2015; Xu & Gursoy, 2015a). Financial performance is vital for companies to operate effectively and to provide both quality products and quality services, which are essential in determining customer satisfaction(Xu & Gursoy, 2015b).Financial resources are vital for companies' financial performance evaluation (Assaf et al., 2012). Financial reports estimate operational efficiency and profitability, fostering a positive cycle and facilitating capital attraction for companies (Biddle et al., 2009). Good financial performance enhances businesses' relationships with customers, employees, shareholders, stakeholders, governments, communities, and the common public, leading to increased customer satisfaction (Assaf and Josiassen, 2012; Jung & Yoon, 2013). Thus, a company's financial performance significantly influences the local economy by creating jobs, generating tax revenue, and fostering collaboration with local suppliers, producers, and service providers.

In view of the above review of the literature, the third assumption is that the economic aspect of green supply chain affects customer satisfaction:

H_3: Economic aspect of sustainability is associated customer satisfaction.

The proposed model emphasizes eco-friendly supply chain practices, focusing on social, environmental, and economic dimensions. Solutions include fostering strong relationships, ensuring fair labor practices, using sustainable packaging, reducing waste, encouraging innovation, and optimizing logistics for cost-saving strategies.

Table 1: Indicators of the Different Variables

Hypothesis	Variables	Indicators	Literature
H_1	Social aspect of sustainability	Employees Customers Community Suppliers Government	Goodman (2000); Kassinis and Soteriou (2003); andGursoy et al.(2015).
	Customer satisfaction	Customers recommendation Customers retention rate Level of customer happiness about a product purchase Level of customer repurchase Overall satisfaction measure	Caber et al. (2013);Gursoy et al.(2015); Nassè (2022); and Nassè (2024)
H_2	Environmental aspect of sustainability	Environmental management system Pollution control Recycling Product design Service design	Goodman (2000); Farsari (2012); Zouganeli et al. (2012); and Gursoy et al. (2015)
	Customer satisfaction	Customers recommendation Customers retention rate Level of customer happiness about a product purchase Level of customer repurchase Overall satisfaction measure	Caber et al. (2013); Gursoy et al. (2015); Nassè (2022); and Nassè (2024)
H_3	Economic aspect of sustainability	Revenue growth Cost control Market share growth	Goodman (2000); Schendler (2001); Kleindorfer (2005);and Font et al.(2008).
	Customer satisfaction	Customers recommendation Customers retention rate Level of customer happiness about a product purchase Level of customer repurchase Overall satisfaction measure	Caber et al. (2013); Gursoy et al. (2015); Nassè (2022); and Nassè (2024)

Source: Authors' construct

Methodology

Design: Researchers use survey research and experimental research as primary quantitative methodologies (Creswell, 2009). Survey research offers standardized information, quick, and low-cost data collection from a large sample, aligning with positivism, which emphasizes objective measurement and quantification of phenomena (Duberley & Johnson, 2015; Rehman & Alharthi, 2016)..

Population: The population consisted of employees and customers of the Wa Municipal's hospitality industry. However, the researcher intended to achieve accurate results and save time, the population was limited to staff and customers who have knowledge about the current topic.

Study Area: Wa Municipal is a district in Ghana's Upper West Region, established in 1988. Its capital town, Wa, serves as the regional capital. The municipality covers 1,180 square kilometers and has a population of 200,672. The 2021 Census revealed a sex imbalance with girls over males, with only 4.3% of the population aged 65 or older. The population is getting younger, with 71.4% urban and 28.6% rural. The region's population is growing rapidly.

Sample Size: The sample size is 200 respondents. The formula of Tabachnick and Fidell (2007) is used to calculate the sample size with a margin of error of 5% and a confidence interval of 95%. According to Babbie (2015), this is suitable for social science studies, thus suitable for this particular research.

$n = N / 1 + N (\alpha)^2$; (n = sample size; N = the Population; 1 = a constant of proportionality; and α = the error margin). Therefore,

$$n = \frac{402}{1 + 402 (0.05)^2}$$

$$n = \frac{402}{1 + 402(0.0025)}$$

$n = 200$.

Table 2: Sample Size Distribution

Category	Sample Size
Employees	50
Customers	150
Total	**200**

Source: Authors' construct

Sample and Sampling Technique: The study utilized convenience sampling, selecting 200 respondents with knowledge of the hospitality industry supply chain, based on their availability, proximity, accessibility and motivation to participate

(Etikan, Musa & Alkassim, 2016). Qualified respondents have been selected using simple random sampling, with the main objective of collecting accessible information.

Data Collection Instrument: The study utilized primary data and previous measurement scales to develop a research instrument, making necessary adjustments to fit the current research context. Additionally, the research used a structured questionnaire that is adopted from Goodman (2000),Font et al., (2008), Xu and Gursoy (2015a), and Kasim et al., (2014).The questionnaire scale appraised on a Likert Scale, facilitates data analysis, saving time and money.

Data Analysis: The researchers utilized PLS-SEM and Smart PLS software for a study, analyzing complex relationships between independent variables and dependent variables, providing insights into underlying structures and constructs (Gefen et al., 2000).Structural Equation Modeling (SEM) is a method used by researchers to evaluate a model's fit and test its overall structure (Chin, 1998; Gefen et al., 2000). It assesses the linkages between constructs and measures, and hypothesized structural relationships. Descriptive statistical tools like percentages, mean, figures, and tables are used to analyze data. The partial least squares structural equation model (PLS-SEM) is used to test the hypothesis.

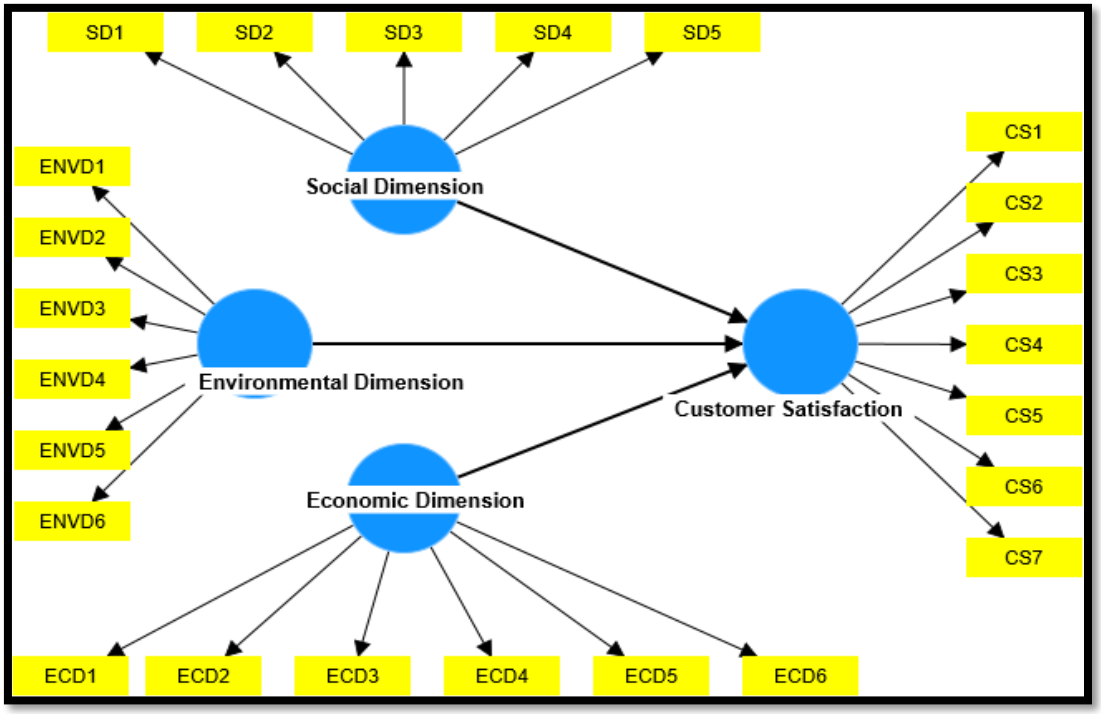

Figure 3. Model showing variables, items and the relationships between variables
Source: Authors' construct

Reliability and Validity: Reliability is a crucial aspect of measuring instrument reliability, ensuring consistency among its various components (Taherdoost,

2016;Mohajan, 2017).The research's reliability was assessed using internal consistency, with Cronbach Alpha coefficient being the most commonly used measure, and Likert scales being the most suitable (Taherdoost, 2016).Internal consistency reliability value of at least 0.7 (See Table 3) is satisfactory (Shrestha, 2021).

Table 3: Construct Reliability and Validity

Construct	Number of items	Cronbach's alpha	rho_A	Composite Reliability (CR)	Average Variance Extracted (AVE)
Customer Satisfaction	6	0.881	0.893	0.911	0.632
Economic Dimension	3	0.927	0.935	0.953	0.871
Environmental Dimension	6	0.938	0.942	0.951	0.764
Social Dimension	4	0.947	0.954	0.962	0.864

Source: Authors' construct, 2024

Validity refers to the degree to which the data accurately represents the intended study area (Taherdoost, 2016). It is measured here using construct validity (Mohajan, 2017).Construct validity is the process of translating a theoretical construct into practical reality (Drost, 2011). It consists of two components: convergent and discriminant validity (Wang et al., 2015; Henseler et al., 2015). Discriminant validity assesses a latent variable's ability to distinguish from other latent variables(Henseler et al., 2015). Two measures used in PLS are Fornell-Larcker's (1981) and Heterotrait-Monotrait Ratio (HTMT) criterion. To satisfy Fornell and Larcker's criterion, a latent variable should have a higher degree of shared variance with its indicators. This approach contrasts latent constructs' correlation with the average variance extracted (AVE) square root. A latent construct should account for the variance observed in its own indicators rather than the variance associated with other latent constructs. Therefore, the square root of the Average Variance Extracted (AVE) for each construct should exceed the correlations with other latent constructs (Hair et al., 2014) (See Table 4). Henseler et al. (2015) and Gold et al. (2001) show that higher values of HTMT indicate potential issues with discriminant validity. The HTMT threshold of 0.90 is recommended for discriminant validity assessment, with values exceeding this threshold indicating a lack of discriminant validity. As shown in Table 5, all HTMT values have not exceeded the 0.90 threshold, implying that discriminate validity was achieved (Gold et al., 2001).

Convergent validity is used to test if constructs that are estimated to be related are indeed related (Taherdoost, 2016). The value of the Average Variance Extracted (AVE) is used to evaluate it. A construct's AVE value must be at least 0.5 to have adequate convergent validity (Hair et al., 2019) (See Table 3).

Table 4: Discriminant Validity (Fornell and Larcker (1981) Criterion)

	Customer Satisfaction	Economic Dimension	Environmental Dimension	Social Dimension
Customer Satisfaction	**0.859**			
Economic Dimension	0.109	**0.890**		
Environmental Dimension	0.742	0.119	**0.838**	
Social Dimension	0.768	0.065	0.823	**0.862**

Source: Authors' construct, 2024

Table 5: Discriminant Validity- Heterotrait-Monotrait Ratio (HTMT)

	Customer Satisfaction	Economic Dimension	Environmental Dimension	Social Dimension
Customer Satisfaction	0.000	0.000	0.000	0.000
Economic Dimension	0.746	0.000	0.000	0.000
Environmental Dimension	0.750	0.627	0.000	0.000
Social Dimension	0.866	0.822	0.729	0.000

Source: Authors' construct, 2024

Unit of Analysis: It is the primary entity being analyzed in a given research (Silverman & Solmon, 1998). Here, it refers to the experienced customers in the hospitality industry.

Ethical Considerations: Ethics, a crucial aspect of research, addresses morality and right and wrong within communities, societies, or groups, making it essential for all researchers to comprehend this issue (Bag, 2016). Researchers uphold moral standards, ensuring participants give voluntary consent, are fully informed about the research's purpose, methods, benefits, and have the option to withdraw at any time (Nassè, 2020; Shahangian et al., 2021).

Results

Respondents Demographic Characteristics

Table 6 below shows a presentation showing a significant 60% of the respondents represented by men and 40% of women. 35%are between the ages of 41 and 50. Concerning the marital status, 75% of the respondents and 25% are single. In terms of

their social status, 42.5% of the respondents are in the middle class, 30% are in the lower class and 27.5% are in the upper class.

Table 6: Respondents Demographic Characteristics

Demographic Characteristics	Number	Percentage (%)
Gender		
Male	120	60
Female	80	40
Total	**200**	**100**
Age (in terms of years)		
[21-30]	30	15
[31-40]	40	20
[41-50]	70	35
[51-60]	60	30
Above 60	0	0
Total	**200**	**100**
Education		
HND	40	20
BSc	70	35
MSc/MPhil/MBA	60	30
PhD	30	15
Total	**200**	**100**
Marital status		
Single	50	25
Married	150	75
Total	**200**	**100**
Social class		
Upper class	55	27.5
Middle class	85	42.5
Lower class	60	30
Total	**200**	**100**
Profession		
Doctor	35	17.5
Accountant	40	20
Hotel manager	15	7.5
Public servant	65	32.5
Teacher	25	12.5
None	20	10
Total	**200**	**100**

Source: Authors' construct, 2024

Assessment of Measurement Model

The validity of a reflective measurement model is assessed by determining its internal consistency, indicator reliability, convergent validity, and discriminant validity. Recommendation is to have indicator loadings of 0.708 or higher, indicating acceptable item reliability (Hair et al., 2019). Nevertheless, not all loading met this requirement. The model was rerun after the loadings below the threshold were excluded, specifically, items for Social Dimension (**SD5**), Customer Satisfaction (**CS7**) and Economic Dimension (**ECD2, ECD3**, and **ECD4**). The loading of other indicators on their corresponding latent variables was higher than the threshold of 0.708 (See Figure 4 and Table 3).

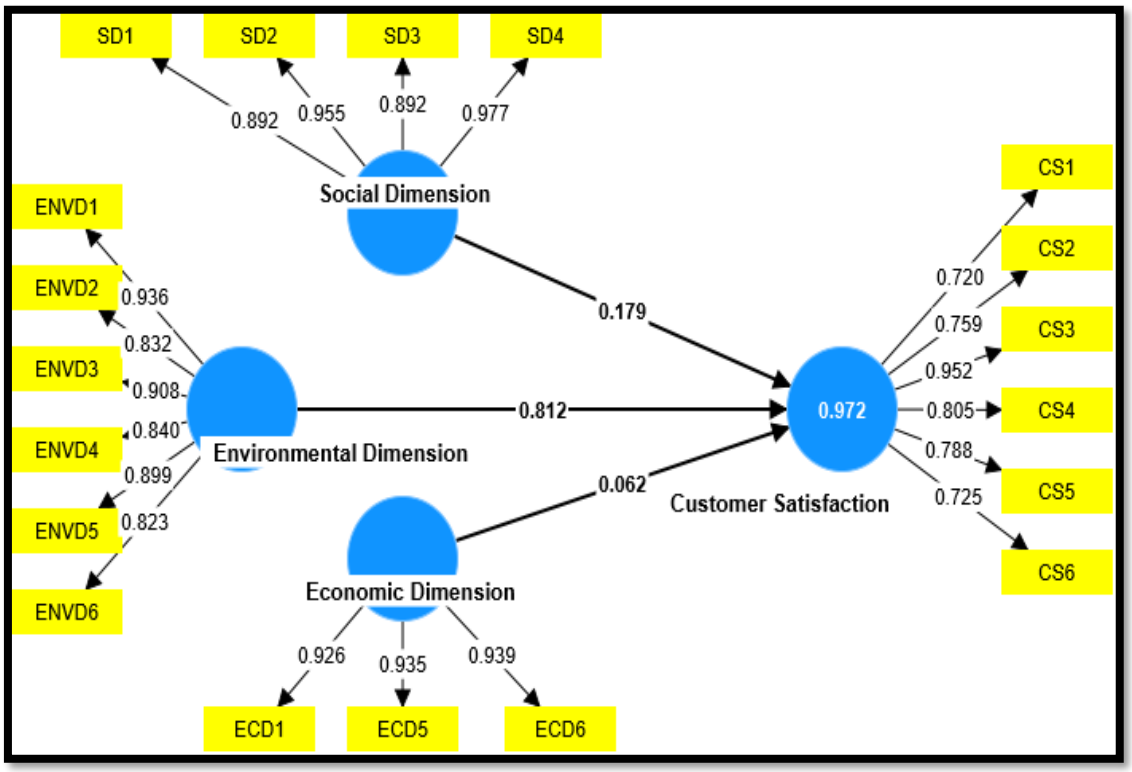

Figure 4. Reflective loadings

Source: Authors' construct, 2024

Structural Model's Assessment

By evaluating the structural model's validity, it is possible to test the hypotheses and to see if they are supported by the data (Urbach, 2010). Examining the importance of the route coefficients in the structural model is required to determine how strongly two latent variables are related (Urbach, 2010). 500 re-samples were used in a bootstrapping technique in SMARTPLS to ascertain the direct and indirect impacts. The t-values that the bootstrapping process produced were used to make the inference (**See Figure 5 and Table 7**). It is advised to employ a 95% confidence interval (two-tailed) with a minimum critical value of 1.65 for a 10% significance level (Hair et al., 2011).

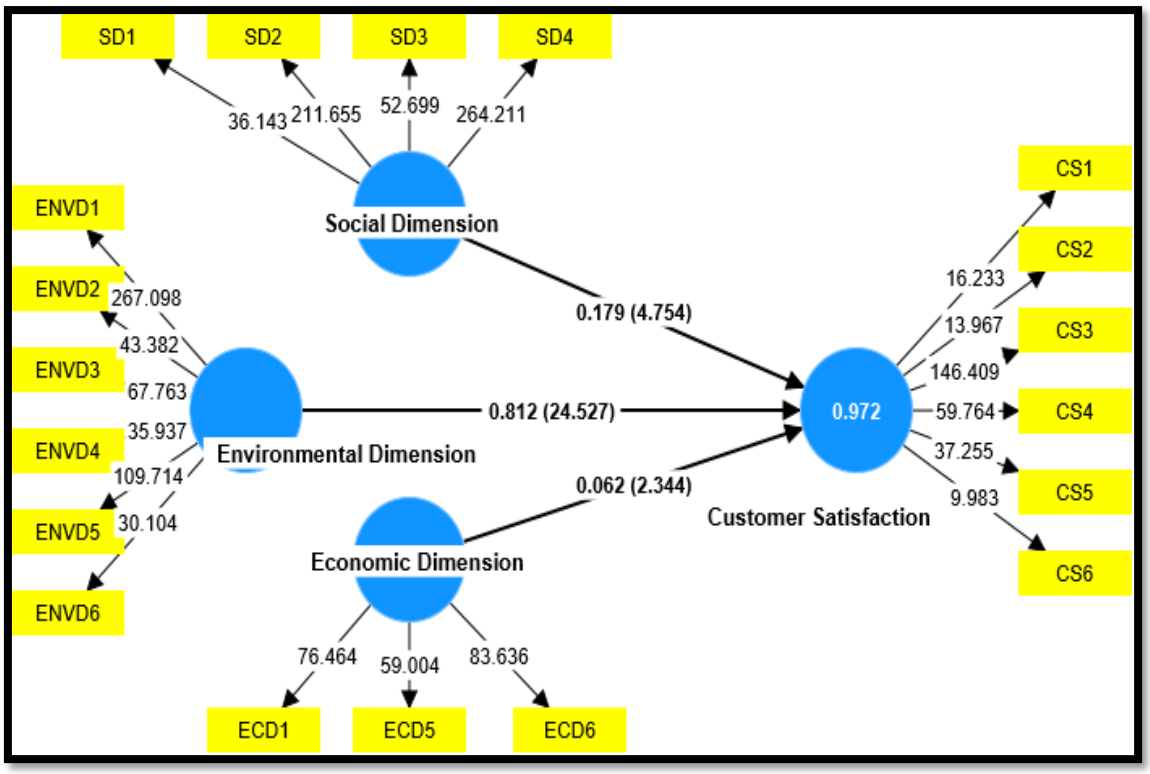

Figure 5: PLS-SEM Boostrap Result
Source: Authors' construct, 2024

Table 7: Hypothesis Testing for Direct Effect

Hypothesis	Standard Beta	Standard Error	T-Values	Decision	95% CI LL	95% CI UL
Social Dimension -> Customer Satisfaction	0.179	0.038	**4.754**	Supported	0.097	0.243
Environmental Dimension -> Customer Satisfaction	0.812	0.033	**24.527**	Supported	0.751	0.883
Economic Dimension -> Customer Satisfaction	0.062	0.026	**2.344**	Supported	0.016	0.119

Source: Authors' construct, 2024

H_1: Social Dimension -> Customer Satisfaction

From Table 7, the bootstrap procedure revealed a T-value (**4.754)** which exceed the threshold of 1.65. In case the t-value revealed by the bootstrapping procedure exceeds the minimum critical value, one accepts the hypothesis, otherwise, rejects (Hair et al., 2011).The findings entail that the alternative hypothesis (H_1) is accepted while the null hypothesis (H_0) is rejected. Therefore, hypothesis one (H_1) is confirmed.

H_2: Environmental Dimension -> Customer Satisfaction

Further, the crossing of the variable social dimension and the variable customer satisfaction has given a T-value of**24.527**.This value exceeds the lowest critical value of 1.65 as acclaimed byHair et al. (2011). This entails that the alternative hypothesis (H_2) is accepted while the null hypothesis (H_0) is rejected. Therefore, hypothesis two (H_2) is confirmed.

H_3: Economic Dimension -> Customer Satisfaction

Similarly, the crossing of the variable economic dimension and the variable customer satisfaction has given a T-value of **2.344.** This value exceeds the lowest critical value of 1.65. Therefore, the alternative hypothesis (H_3) is accepted while the null hypothesis (H_0) is rejected.
Therefore, hypothesis three (H_3) is confirmed.

Goodness of Fit Assessment

An evaluation of the structural model's goodness of fit was carried out following an analysis of the path coefficients' significance. According to Henseler et al. (2015), this assessment establishes whether the model is well-fitting or not. Hair et al. (2014) suggested evaluating the model's goodness of fit using the coefficient of determination (R^2). R-squared values, which range from 0 to 1, show how well the model explains data. Greater explanatory power is indicated by higher values. According to Hair et al. (2011) and Henseler et al. (2015), R^2 values of 0.25, 0.50, and 0.75 are typically thought to indicate poor, moderate, and large levels of explanation, respectively. From **Table 8**, R squared values indicate that 97.2% of customer satisfaction's variance is explained by social, environmental and economic dimensions of sustainable supply chain.

Table 8: R Squared

	R^2	**R^2-adjusted**
Customer Satisfaction	0.972	0.972

Source: Authors' construct, 2024

Measuring Structural Model for Multi-collinearity Issues

A multi-collinearity assessment was carried out as part of the structural model evaluation. Combining factors in several regression studies results in multi-collinearity (O'Brien, 2007). The variance inflation factor (VIF) was computed for every independent construct to detect multi-collinearity. To prevent collinearity problems, Hair et al. (2011) advise utilizing a threshold of 5 or less. It implies that the construct under investigation is almost a perfect linear combination of the independent variables previously included in the equation when the condition is satisfied (Mansfield et al.,

1982; Hair et al., 2016). It is evident from Table 9 that every VIF value is less than 9. This suggests that there are no collinearity problems in this investigation.

Table 9: Multi-collinearity Statistics (Inner VIF)

	Customer Satisfaction	Economic Dimension	Environmental Dimension	Social Dimension
Customer Satisfaction	0.000	0.000	0.000	0.000
Economic Dimension	2.582	0.000	0.000	0.000
Environmental Dimension	1.960	0.000	0.000	0.000
Social Dimension	3.311	0.000	0.000	0.000

Source: Authors' construct, 2024

Discussions

H_1: Social Dimension -> Customer Satisfaction

The findings in Table 7 show that there is a strong association between ''social dimension'' and ''customer satisfaction'' with $\beta = 0.179$ and $t = 4.754$, indicating that the social component of sustainability positively has an effect on customer satisfaction. Thus, the null hypothesis (H_0) was rejected and the first hypothesis (H_1)—that the social aspect of sustainability is positively connected with customer satisfaction—was accepted. These results are similar to the findings of Xu and Gursoy (2015b), Shin et al.(2017), Sven-Olaf et al.(2019), Zhang et al.(2020), and Nangpiire et al.(2024) who propose that prioritizing social sustainability initiatives, such as enhancing employee welfare and promoting social responsibility improve customer satisfaction.

H_2: Environmental Dimension -> Customer Satisfaction

The results in Table 7 show that there is a strong association between ''environmental dimension'' and ''customer satisfaction'' with $\beta = 0.812$ and $t = 24.527$. This indicates that sustainable supply chain's environmental component influences customer satisfaction. Thus, while the null hypothesis (H_0) was rejected, the second hypothesis (H_2)—Environmental aspect of sustainability is associated with consumer satisfaction—was also accepted. Some scholars such as Xu and Gursoy (2015b), and Shin et al.(2017), Pinto (2020), Armutcu and Tan (2023), Nangpiire et al. (2024), and Hasan et al. (2024), are among those that support this as well. According to Fritz et al. (2021), consumer satisfaction may increase when the environmental component is incorporated into sustainable hospitality supply chain management. Eco-friendly companies are seen as more solid and all-encompassing since they address the social and economic facets of the natural environment, which raises customer satisfaction.

H_3: Economic Dimension -> Customer Satisfaction

The results in Table 7 show a strong association between ''economic dimension'' and ''customer satisfaction'' with $\beta = 0.062$ and $t = 2.344$. This implied that the economic component of sustainable supply chain influences customer satisfaction. Thus, while the null hypothesis (H0) was rejected, the third hypothesis (H_3) — Economic aspect of sustainability is associated with customer satisfaction, was also supported. This findings is supported by Xu and Gursoy (2015b), Khadka and Maharjan (2017), and Zhang (2020). For Xu and Gursoy (2015b), companies that perform well financially can operate meritoriously and offer higher-quality goods and services, which are important factors in determining customer satisfaction. These studies consistently demonstrate that sustainable supply chain practices' economic dimension has an influence on customer satisfaction. This suggests that when hospitality companies prioritize economic sustainability initiatives in their supply chain management, it can increase the level of customer satisfaction.

Conclusion

First of all, the relationship between social sustainability and customer satisfaction is very significant. In addition, the relationship between the social aspect of sustainability and customer satisfaction is very significant. For further, the relationship between the environmental aspect of sustainability and customer satisfaction is very significant. Finally, the relationship between the economic aspect of sustainability and customer satisfaction is very significant.

Recommendations: To stay very competitive in the hospitality industry, managers should develop sustainable practices, conduct regular sustainability audits, create a sustainable procurement policy, maintain relationships with sustainable suppliers, and educate their staff on sustainability practices. This includes reducing waste, conserving energy, and making responsible purchasing decisions. Building strong relationships with suppliers who prioritize sustainability can help build a more sustainable supply chain.

Implications: The present research highlights the importance of sustainable supply chain practices in enhancing customer satisfaction. In terms of social implications, it is suggested that companies in the sector should adopt social sustainability practices in hospitality supply chain management to enhance their brand reputation. In terms of practical implications, the findings suggest that industry players and managers should take into account some sustainability actions in the hospitality industry to foster and to enhance customer satisfaction, highlighting the need for the adoption of long- term green supply chain practices. Finally, concerning theoretical implications the findings contribute to refining the Evaluative Congruity Theory by incorporating local values, customer's identities, resource constraints, and community-based sustainability perceptions

Limits and Future Research Perspectives: The limits include the research specific emphasis on the Upper West Region and its failure to take Ghana's tourism industry into account, which calls for more investigation.

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