



The Impact of Sustainable Marketing on Customer Citizenship Behavior: The Mediating Role of Customer Engagement

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Abstract

This study aims to examine a proposed model that illustrates the direct and indirect relationships between sustainable marketing (SM) and customer citizenship behavior (CCB) in the eco hotel industry. We also look at the role that SM plays in increasing customer engagement. The study's target population consisted of Eco hotel guests. To achieve these objectives, a web-based survey was developed and given to visitors of numerous four- and five-star environmentally conscious hotels in Riyadh, Saudi Arabia. There were 403 certified environmentally friendly hotels spread across

all of Saudi Arabia. Of the forms received, only 388 were deemed suitable for statistical analysis. The effect size of the predictors (F2) and the coefficient of determination (R2) were computed to evaluate the structural model's ability to forecast. To evaluate multicollinearity, the variance inflation factor (VIF) value was looked at. Finally, the bootstrapping approach and partial least squares structural equation modelling (PLS-SEM) were used to analyze the study's hypotheses and determine whether the results were statistically significant.

The study's conclusions show that consumer participation and citizenship behavior are positively connected with consumers' perceptions of sustainable marketing. Additionally, the relationship between a customer's view of social media and their citizenship behavior is mediated by customer interaction. Our results show that customer engagement somewhat mediates the relationship between SM and customer citizenship behavior, and that sustainable marketing directly affects customer engagement. Additionally, the findings support consumer engagement and sustainable marketing as outcomes of customer citizenship behavior.

In order to maximize customer citizenship behaviors and increase customer engagement at eco-friendly hotels, eco-friendly hotel operators should think about applying sustainable marketing approaches, according to the study's findings. This will increase production and profitability while also greatly enhancing the quality of services offered.

Keywords: Sustainable Marketing (SM); Customer Citizenship Behavior (CCB); Customer Engagement (CE); Eco hotel industry.

Introduction

Nowadays, sustainability has started to influence marketing these days. In this sense, it should effectively influence consumer behavior by connecting it to marketing (Sheth and Parvatiyar, 2021). By building suitable relationships with social and natural environments and employing the best management

* This article was submitted in January 2026, and accepted for publication in February 2026. Published Online in February 2026.

DOI: 10.21608/aja.2026.462592.2036



and marketing techniques in the most efficient manner, sustainable marketing, in contrast to traditional marketing, aims to accomplish long-term objectives to achieve sustainable development (Lim, 2016 and Lucić, 2020). With sustainable marketing, the four Ps of the marketing mix -product, price, promotion, and place- are changing and now appear as the four Cs: customer value, customer cost, customer convenience, and customer communication (Winston, 2019). New marketing ideas, including cash marketing, social marketing, and green marketing, have also emerged as a result of sustainable marketing (Abdou, Hassan, Salem, Elsaied & Elsaed., 2022).

Numerous company-favoring behaviors, including customer extra-role behavior, are believed to have an impact on customers' perceptions of corporate values (Fatma, Khan, Kumar, Shrivastava, 2021). Grönroos and Gummerus (2014) assert that the conventional view of employees as the main value creators has been replaced by the recognition of customers' extra-role or citizenship behavior as a crucial component of achieving an effective organizational performance through value co-creation (Fatma, Khan, and Rahman, 2018). Due to their expanded knowledge and access to more advanced communication technologies, customers are becoming more adept at creating and distributing customer value. Improvements in CCB and the company-customer relationship may result from the favorable effects of SM initiatives on the company's image (Abdelmoety, Aboul-Dahab, and Agag, 2022). Additionally, scholars have asserted that consumers who hold favorable impressions of organizations are more likely to stay in contact with them over time (Khan and Fatma, 2023). Businesses must therefore view CCB as a positive engagement activity and cultivate enduring relationships with their clientele (Van Tonder, Fullerton, De Beer, and Saunders, 2023).

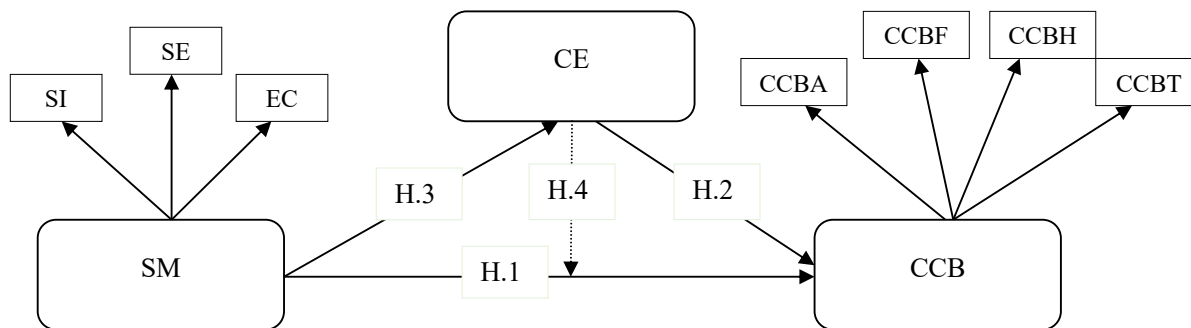
Therefore, it's critical to consider social media as a precursor that influences interaction with customers and, in turn, customer citizenship behavior. In order to address these demands, this study uses customer involvement to mediate the relationship between perceived SM and CCB. Regrettably, not much research has taken into account important mediators in a cohesive framework (Fatma et al., 2022).

According to Van Tonder et al. (2023), CCB development can help a company increase sustainability and foster ties with its clients. Little is known about the interactions between CCB and SM, despite the fact that CCB has been well examined in relation to other services. Thus, this study investigates the connections between consumer perceptions of SM, customer engagement, and CCB in the context of eco-hotels. Since SM activities have a significant positive impact on market competition, it is imperative to comprehend how they improve customer engagement and give organizations a competitive edge (Nurunnabi, Alfakhri, and Alfakhri, 2018; Diab and Metwally, 2020). This study aims to investigate the direct and indirect effects of SM on CCB as well as how SM influences customer engagement. This study substantially contributes to the body of knowledge on customer engagement and SM by (1) demonstrating that customer engagement constructs -which are not frequently discussed in the literature on SM- are relevant underlying psychological mechanisms for explaining customer responses to SM and (2) identifying CCB as a critical outcome variable. The study's findings suggest that these efforts may establish a network platform that could coexist with the focus on touch with core value dimensions. They also provide guidance on how to develop their SM initiatives to optimise the impact of perceived SM on CCB. The current study was carried out to gain a better understanding of the relationship between CCB, engagement, and SM activities. The findings of the study would be relevant to potential social media marketing tactics meant to boost interaction with customers in the hospitality industry. Therefore, we expect that this study's theoretical and empirical underpinnings will possess important managerial ramifications for the service sector.

Background Theory and Development of Hypotheses

The impact of sustainable marketing strategies on customer engagement and citizenship behavior was examined in this study. Due to the concept's relative novelty, prior research was reviewed to identify prospective customer citizenship behavior and engagement strategies, as well as sustainable marketing concerns. In Figure 1, the conceptual framework is displayed.

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Note: "SM" is sustainable marketing, "SI" is strategic integrations, "SE" is societal engagement, and "EC" is ethical capabilities." CE" customer engagement; "CCB" customer citizenship behavior; CCBF: Customer Citizenship Behavior Feedback; CCBA: Customer Citizenship Behavior Advocacy; CCBH: Customer Citizenship Behavior Helping; CCBT: Customer Citizenship Behavior Tolerance.

Figure 1. Conceptual Framework.

Sustainable Marketing

Borland, Ambrosini, Lindgreen, and Vanhamme (2016) Sustainable marketing can be defined as the planning process of directing, executing, and monitoring all market interactions. In addition to helping to restore social and environmental health and reduce adverse environmental effects, it guarantees that the demands of current and potential customers are consistently satisfied in order to achieve corporate objectives. Sustainable marketing is the planning, development, and monitoring of the production, pricing, promotion, and distribution of commodities in a way that meets the requirements and desires of customers, achieves organizational objectives, and ensures that activities are environmentally friendly (Rosmarin, 2020).

Sustainability and marketing are now closely intertwined ideas. In this sense, marketing initiatives have evolved due to shifting customer demands and increased environmental consciousness. Instead of concentrating on customer needs, which form the foundation of traditional marketing, sustainable marketing seeks to build a long-term understanding of customer engagement and maximize benefits for the company, society, and the environment (Mittelstaedt, Clifford, Shultz, William, Kilbourne, and Peterson, 2014, Amer, Hasnin, et al,(2025).

The results of a study by Hasnin ,EA., (2024) confirmed that sustainable marketing, through enhanced social media activities, significantly contributes to improving marketing efficiency in Saudi hospitals. To achieve this efficiency, a set of recommendations were developed based on the data obtained.

The resource-advantage theory of competition looks at performance heterogeneity by comparing a firm's competitive advantage in the marketplace with its comparative advantage in resources. Multimarket competition is the term used when referring to competition between the same businesses in many marketplaces (Griffith and Yalcinkaya, 2015). Hunt (2016) argues that R-A theory situates the use of company resources for comparative advantage within the larger social environment, which encompasses social resources and institutions, competitors, consumers, and public policy.

Given that sustainability is a macro-orientated concept, the transformative role of sustainable marketing is based on the notion that society and marketing may persuade people and organizations to embrace this viewpoint (Helfaya and Moussa, 2017). Three pertinent abstracts of published literature demonstrate the increased interest in linking different strategic concepts to sustainable marketing. Simultaneously, literature is noisy, in part because of ambiguous language. According to Huber and Hirsch (2017), Danso, Adomako, Amankwah-Amoah, Owusu-Agyei, and Konadu (2019), Heikkurinen, William, and Morgan (2019), and Peterson (2021), the terms "green marketing," "corporate social responsibility of marketing," "sustainability strategy," "sustainability orientation," and "sustainable marketing" are commonly used interchangeably.

A company's resources can also include specific knowledge or skills, material possessions, human resources, organizational assets, intangible assets, competing abilities, accomplishments, or particular attributes that provide the business with a competitive advantage in the market, according to the resource-based theory (Claudy, Peterson, and Pagell, 2016). Because sustainability creates exciting opportunities and intangible benefits like core values, it is thought that a firm that integrates sustainability into its marketing strategy may have an advantage over competitors (Villena and Dennis, 2020).

According to Hunt (2016), there are clear parallels between the normative nature of sustainable marketing strategy and the positive aspects of RA theory. The approach of focusing on the "sustainability" section, which is backed by self-interested motivation, is consistent with the competitive process of the RA theory. In addition to being self-interested, businesses are also constrained by their own moral standards and are willing to forgo short-term profits in favour of long-term, desired outcomes (Lunde, 2018). The RA theory backs both the approach of developing offerings using "green" techniques and the approach of developing offerings that are inherently "green." As the primary objective, the better financial results of RA theory allow companies to concentrate on other objectives, such as social and environmental ones (Nikolaou, Tsalis, and Evangelinos, 2019; Peterson, 2021).

Sustainable Marketing Dimensions

According to RA theory, Crittenden et al. (2011) proposed an underlying framework for incorporating sustainable growth within market orientation. The paradigm offers the most thorough social and theoretical justification for implementing strategic sustainability. Building on the theoretical foundations presented, the formative multidimensional measure of sustainable marketing consists of three components: strategic integration, societal involvement, and ethical capacities (Griffith & Yalcinkaya, 2015; Hoffman, 2018).

Therefore, strategic integration refers to the real integration of sustainability ethics and principles into the organization's strategy, which includes a mission, shared values, and standards. In contrast to merely selling sustainable goods or employing such endeavours as a means of enhancing one's reputation, it refers to the process of internally developing a sustainability culture and having a plan connected to sustainability. (Nikolaou et al., 2019). The value system must incorporate sustainability and have a sophisticated, integrated system for tracking sustainability KPIs related to the triple bottom line. The extent to which sustainability concepts are integrated into corporate strategy is one of the primary problems of strategic integration since companies usually perceive sustainability-related issues as distinct, stand-alone strategic issues (Vatan & Yilmaz, 2020). The company's set of guiding principles can be used to formally explain the objective of ethical marketing, but corporate culture and decision-making must fully incorporate it (Hult et al., 2018).

Noorman and Uiterkamp (2014) assert that it is crucial to define the sustainability plan outside the scope of unified standards so that the company can monitor its impact on society and the environment in addition to profit generation or customer satisfaction, which are more reliable measures of economic success. Strategic integration is essentially a representation of the core culture of sustainable marketing.

Furthermore, societal involvement or climate is defined as "proactive creation of plans that benefit the company and its stakeholders" by Rodriguez and Bharadwaj (2019). It is based on opportunities and societal concerns that could provide firms with resources.

Furthermore, one element of a sustainable business is the active participation of its stakeholders (Marcelo, 2019). « Bhattacharya (2020) describes relationship marketing as «any marketing activity that are orientated towards the creation, development, and maintenance of successful exchange relations." This method implies that stakeholder engagement is taken into account on a much larger scale than client interests.

As per Chattopadhyay (2019), it is crucial for resource- and labour-intensive companies, but not all of them, to measure how their operations, processes, and products affect the environment and human health.

Consequently, marketing activity patterns that prioritise achieving “the right and the good” within each of the three sustainability pillars (economic, social, and ecological) and have their roots in morality are by definition ethical marketing capabilities. This means that the highest sustainability ethics standards must be followed in every part of the product, pricing, marketing, and sales process.

Sustainable marketing practices strike a balance between businesses and the environment. Consumer behavior and sustainability are the two primary components of sustainable marketing (Meng, 2015). Consumer-orientated marketing -which includes customer value, cost, convenience, and communication- should serve as the foundation for implementing sustainable marketing strategies. Implementing sustainable marketing strategies that meet consumer demands and wants without upsetting the social and environmental balance is crucial in this situation (Szalavetz, 2018). Innovation, market segmentation, target market positioning, and selection are examples of sustainable marketing techniques. A sustainable marketing mix should be created in order to put sustainable marketing ideas into practice (Kramer, 2020).

Customer Engagement (CE)

In addition to being a fresh approach to building consumer value and understanding modern marketing, customer interaction has gained increasing attention in contemporary marketing literature (Islam, Rahman, & Connolly, 2021). Furthermore, scholars concur that consumer interaction boosts productivity and provides companies with a real edge over rivals (Khan, Fatma, Kumar, Amoroso, 2021). Therefore, by their actions, professionals try to build relationships and strengthen ties with clients (Chang, Huang, Wang, Lee, 2021). A crucial element of successful customer-business relationships is engagement. According to them, engaged customers have strong bonds with the businesses that eventually become second nature to them. Khan et al. (2021). Chandni and Rahman (2020) describe consumer involvement as the outward expression of activities that go beyond simple financial exchanges. Nonetheless, the majority of academics have adopted a comprehensive approach, characterizing consumer participation as a psychological state that encompasses cognitive, affective, and behavioral elements.

Customer Citizenship Behavior “CCB”

The idea of organizational citizenship behavior served as the foundation for customer citizenship behavior (CCB) (Deng et al., 2023). In order to describe the extra-role acts taken by employees beyond their designated responsibilities in order to contribute to the general success of the organization, citizenship behavior was first presented in the field of organizational behavior. The results of Hasnin study (2025) demonstrated that customer well-being has both direct and indirect effects on their citizenship behaviors, with customer intimacy playing a partial mediating role. The study also provided valuable guidance to help hotel managers make greater efforts to enhance their relationships with customers, achieve their well-being, achieve their citizenship, and achieve intimate working relationships with them, leveraging its mediating role in this relationship.

According to Hur, Moon, and Kim (2021), CCB is an essential part of the co-creation process between the company and its customers. We see CCB as a positive way to get involved. Initially, CCB was added to the list of roles that employees took on to increase organizational success, known as organization citizenship behavior (OCB). From the customer’s point of view, CCB is a voluntary behavior that supports and enhances organizational performance, independent of the customer’s need for service delivery (Fatma et al., 2022). Consumers’ voluntary support of other consumers and businesses is known as CCB (Chiu, Ortiz, Chih, Pang, Huang, 2019). The CCB encourages consumers to assist businesses by lending a hand to other customers, providing feedback to companies so they may improve their offerings, and putting up with difficult situations. When a company provides favorable support to its customers, it encourages additional customers to take actions that benefit the company (Tsaur, Yang, Tsai, 2021). When customers are aware of a company’s expansion, they are more inclined to support it, maintaining the two parties’ relationship

(Liu, Yang, & Chen, 2020; Fatma et al., 2021). This type of civic engagement can drive the organization's long-term profitability and future value.

SM and CCB

Furthermore, sustainability in marketing is a catalyst for cost reductions and creative thinking in addition to being a weapon for competitive advantage. Only if sustainability can be successfully attained in the commercial environment will this distinction be feasible (Russo, Moretta Tartaglione, and Cavacece, 2019). According to Soelton, Rohman, Asih, Saratian, and Wiguna, (2020), companies that want to add value for their clients, stakeholders, and society at large should broaden their marketing mix to incorporate social, ecological, and physical environmental elements.

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Hypothesis 1: SM directly and favorably affects CCB.

Customer Citizenship Behavior and Customer Engagement

The literature has extensively shown the positive effects of client interaction behavior on client loyalty. Clients that are actively involved in the business will support any actions that benefit the company (Islam et al., 2021). Beyond the behavior of in-role loyalty that solely concentrates on extra-role voluntary and discretionary civic behaviors, they may also fall under this category. The term "CCB" refers to constructive and beneficial client contributions that are not necessary for the business to carry out its essential functions but, when combined, allow the organization to provide efficient services (Hur et al., 2021). Organizational literature indicates that engaged employees have greater levels of CCB towards the company (Hur et al., 2021).

The results of the study (Almurad, 2025) confirmed the significant direct and indirect (via corporate sustainability) effects of organic marketing practices in hotels on enhancing customer engagement. It also indicated a significant partial mediating effect of hotel sustainability on the relationship between organic marketing practices and customer engagement. Furthermore, the study confirmed that hotel sustainability, along with adopting organic marketing practices, contributes significantly to enhancing customer engagement. To improve customer engagement in Egyptian hotels, a set of recommendations was developed based on the data taken into account.

Similarly, we argue that brand loyalty is more likely to be influenced and demonstrated by how customers perceive SM. Engaged consumers are less likely to switch, exhibit advocacy behavior, and have a strong bond with the brand. Strong ties are more important to them than minor changes to the offers. Customers that are actively involved in CCB strive to keep up strong relationships and high levels of contact with the company. This study suggests that both in-role and out-of-role behavior are encouraged by customer engagement. Therefore, the author declares:

Hypothesis 2: CCB directly and favorably benefits from customer engagement.

Sustainable Marketing and Customer Engagement

According to Hollebeek (2011), customer engagement is a psychological process that mimics the fundamental mechanisms by which a service brand's new clients develop their loyalty and how repeat customers can sustain their loyalty. Customers' psychological perceptions are shaped by branding, which encourages interaction. Long-term client engagement and brand ranking are enhanced by the companies'

sustainability policies. For businesses, customer engagement and brand image are extremely valuable. As a result, the resource-based view encourages businesses to improve their sustainable marketing in order to gain a competitive edge. Additionally, sustainable marketing offers a corporate social image that is very beneficial for consumer involvement and brand image.

Growing concerns about the environment are putting pressure on businesses to act sustainably. Using sustainable branding and marketing strategies or putting in place sustainable management systems are two ways to accomplish this (Sun, Kim, and Kim, 2014). Concerns about the environment also encourage consumers to be more proactive and open to green consumption. In a similar vein, the RBV hypothesis supports brand and consumer sustainability in purchase intentions. Businesses are considered to have a comparative advantage if they possess a resource, or a combination of resources, which is unusual among competitors. The researcher thus declares:

Hypothesis 3. Customer engagement is directly and favourably impacted by sustainable marketing.

Customer Engagement's Mediating role

The research has highlighted customer engagement as a crucial element that improves a company's performance and success by fostering the connection between outcome variables, such as CCB, and predictor constructs. On the other hand, a customer's subjective evaluation of their experiences with consumption-related activities greatly determines their level of involvement. The following hypotheses are proposed in light of this premise, which suggests that customer involvement plays a mediating role in the link between SM and CCB:

Hypothesis 4: The relationship between SM and CCB is mediated by customer involvement.

Materials and Methods

Metrics and Instrument Development

The suggested research aims to model the relationship between the impact of implementing sustainable marketing (SM) on customer citizenship behavior (CCB) and customer engagement (CE) as a mediator in a sample of the eco-hotel industry. In order to collect relevant data, an online survey was created and distributed to Eco Hotels clients in the Riyadh eco-hotels industry via an electronic Google form. Due to their many benefits, including cost-effectiveness, time savings, access to a more extensive and varied population, improved accuracy and dependability in managing data security and storage, and the ability to integrate multimedia, online questionnaires have become more and more popular for data collection in recent years. Resources include images or films that aid in elucidating the concepts discussed (Wright, 2005).

We identified reliable and widely used scales by analysing the literature. Using these scales, we created a typical four-section survey. The first sections of the questionnaire ask about demographic factors like age, gender, and educational attainment.

A five-point Likert scale was also created, with 1 denoting "strongly disagree" and 5 denoting "strongly agree."

The responses of the participants to the independent variable "Sustainable Marketing" (SM), which encompasses the following dimensions, constitute an additional factor: the first sub-dimension "Strategic integration" (SI): (SI1); the effectiveness of my department is evaluated using a mix of social, environmental, and financial metrics. (SI2); one of the core principles of our company culture is sustainable development. (SI3); employees at my hotel are driven to meet social and environmental objectives in addition to financial ones. (SI4); we keep an eye on how our goods and services affect the environment. These measures were adapted from Nikolaou et al. (2019), Vatan and Yilmaz (2020), Hult et al. (2018), and Noorman and Uiterkamp (2014). The second sub-dimension, "Societal engagement" (SE) (SE5), is where we collaborate with a range of stakeholders

to comprehend the expectations they have set for us. (SE6); we choose our suppliers using a set of economic, social, and environmental standards. (SE7); through career planning, training, and other initiatives, we support our workers' professional and personal growth. (SE8); purchasing and utilising eco-friendly goods and services is what we prefer. Four items to measure the societal engagement were adopted from Griffith and Yalcinkaya (2015), Hoffman (2018), Rodriguez and Bharadwaj (2019), and Marcelo (2019). The third sub-dimension, "Ethical capabilities" (EC): (EC9), we price our goods and services in an ethical and responsible manner. (EC10); our clients and customers are always fully informed about our offerings. (EC11); customers are given honest, accurate, and clear information about the features of our services. Three items to measure ethical capabilities were adopted from Geiger et al. (2018), Hoffman (2018), and Chattopadhyay (2019).

The third variable relates to the participants' answers to the dependent variable "customer citizenship behavior" (CCB), which includes four sub-dimensions. The first sub-dimension, "Customer Citizenship Behavior Feedback" (CCBF), which included three items as follows: (CCBF1); I let the staff member know if I have a helpful suggestion for enhancing customer service. (CCBF2); I inform the staff member when I encounter an issue. (CCBF3); I make a comment when an employee provides me with excellent service. The second sub-dimension, "Customer Citizenship Behavior Advocacy (CCBA)," included the following items: (CCBA4); I told everyone good things about my accommodation and the staff. (CCBA5); I urged family members and acquaintances to stay at the hotel. (CCBA6); I told everyone about the hotel. The third sub-dimension "Customer Citizenship Behavior Helping" (CCBH), includes the following items: (CCBH7); I help other customers when they ask for assistance. (CCBH8); I offer guidance to other clients. (CCBH9); if other clients appear to be having issues, I assist them. The last sub-dimension, "Customer Citizenship Behavior Tolerance (CCBT)," included the following items: (CCBT10); I'm willing to be patient if the staff member makes a mistake while providing services. (CCBT11); I would be prepared to make accommodation if I had to wait longer than I would have otherwise anticipated to obtain the service. (CCBT12); I would tolerate it if the service did not meet my expectations. Eleven items to measure Customer Citizenship Behavior (CCB" were adopted from Yi, Gong, and Lee (2013).

The fourth variable relates to the participants' answers to the mediating variable "customer engagement" (CE), which includes the following items: (CE1); Using hotel services is something I am very passionate about. (CE2); I'll be able to use the hotel services for a very long time. (CE3); I get excited when I interact with the hotel. (CE4); I am engrossed in my interactions with the hotel. (CE6); interacting with the hotel makes me joyful. This measure was altered and used by Dwivedi (2015) and Carvalho and Fernandes (2018).

Pilot testing is an essential step in the questionnaire development process that involves delivering the questionnaire to a limited number of participants to evaluate its reliability and validity (Artino Jr. et al., 2014). Forty-eight customers of eco-hotels participated in pilot research. In order to evaluate the questionnaire's acceptability and reasonableness as well as its concision, comprehensibility, and consistency, these were eliminated from the study's primary sample. Some changes were made to the questionnaire's wording based on test-taker input. Other reorganizations and adjustments also occurred. The dimension scales used in the study With a Cronbach's alpha of 0.969, the degree of internal consistency was extremely high.

Data Collection and Sampling

Customers who regularly stay at Saudi Arabia's eco-friendly hotels made up the survey sample. Customers of eco-friendly hotels in Riyadh were selected at random, and participants were urged to join the survey by email and WhatsApp. A selected number of research participants consented to take part in this investigation. Second, a direct invitation to participate in the survey was sent to identify clients using their information. Participants in the study received a link to the survey, which they could fill out. They also received a welcome letter and an overview of the objectives of the study. Additionally, they were informed that participation was completely voluntary and encouraged to review and resubmit their responses once the survey was complete. During the roughly three-week data-gathering phase (May 2025), 467 questionnaires in total were gathered. Just 388 surveys, or 85.27% of the total, were selected for study after being filtered.

A number of four- and five-star eco-friendly hotels that have worked hard to adopt sustainable practices were examined in this study (Abdou, Hassan, Dief, Moustafa, 2020). According to information on eco-friendly and sustainable hotels posted on the ETIC hotels website (ETIC hotels, 2022), 403 hotels in Saudi Arabia have earned eco-friendly certification. Saudi Arabia's Kingdom (KSA) is the official name of the Western Asian nation of Saudi Arabia. the second largest country in the Arab world and the largest in the Middle East and Western Asia. With a land expanse of over 2,000,000 km², the Kingdom of Saudi Arabia encompasses the majority of the Arabian Peninsula.

For testing using structural equation modelling (SEM), a sufficient sample size was 388 people. This was because it satisfied Nunnally's (1994) requirements, which stated that the number of items to be studied should be used to determine the sample size for a study. A 10:1 case-to-item ratio is appropriate. Therefore, 280 people were needed in order to analyse the 28 variables in our study. Additionally, it is in line with Hair, Black, Babin, and Anderson's (2014) assertion that 100 to 150 samples are required to provide an adequate maximum likelihood estimation (MLE). It also complies with Boomsma's (1982) suggestion that structural equation modelling should have a sample size of at least 200.

Analysis of Data

In this study, data analysis was conducted using SPSS version 25 and Smart PLS version 4. Frequencies and percentages were computed to give a general picture of the participants' demographic information. Measures like mean, standard deviation, and frequency distribution will be included in statistics to give a clear picture of how the responses to each questionnaire item were distributed. The validity and reliability of the consent items were evaluated using Cronbach's alpha in conjunction with confirmatory factor analysis (CFA). The Harman single-factor test was used to determine the common method variance (CMV). Composite reliability (CR) and average variance extracted (AVE) were computed to evaluate the study's convergent validity. Additionally, the Fornell-Larcker (1981) metric for evaluating discriminant validity was used in conjunction with the Heterotrait-Monotrait Ratio (HTMT) and indicators' cross-loading. To evaluate the structural model's predictive ability, the effect size of the predictors (F²) and the coefficient of determination (R²) were calculated. The variance inflation factor (VIF) value was examined in order to assess multicollinearity. Finally, the bootstrapping approach and partial least squares structural equation modelling (PLS-SEM) were used to analyse the study's hypotheses and determine whether the results were statistically significant.

Research Results

Features of the Research Sample

Based on the data analysis, 27.57% of the 388 participants were female, while 72.42% of them were male (N = 281). The largest percentage was among individuals aged 30 to 45 (48.45%, N = 188). The majority of participants (59.54%, N = 231) had a bachelor's degree, while the second-highest percentage (19.85%, N = 77) had a master's degree. The descriptive statistics provide a thorough summary of the mean scores and standard deviations of the responses for the observed variables. With CCBH and CCBT having the highest mean scores of 4.43 and 4.44, respectively, indicating comparatively higher levels of agreement for these dimensions, the standard deviations, which range from 0.61 to 0.81, indicate persistent variety in responses. The mean values of the SM variables range from 4.19 to 4.33. The mean scores for the societal involvement, CE, and CCB constructs range from 4.09 to 4.28, 4.23 to 4.24, and 4.31 to 4.44, respectively.

Common Variance in Methods

This study implemented a number of procedural procedures both during and after data collection in order to mitigate the possible impacts with relation to CMV. To assess CMV, three statistical techniques were used: the full collinearity test, the marker variable technique, and Harman's single factor test. In an unrotated factor analysis, Harman's single-factor test determines if a single factor explains the bulk of the covariance

between variables (Podsakoff et al., 2003). The findings showed that 32 different factors, the greatest of which only accounted for 25.812% of the variance, explained 100% of the variance. This figure indicates that CMV is unlikely to be a serious hazard because it is well below the generally accepted threshold of 50%.

The Measurement Model Assessment's Findings

To ensure a thorough assessment of the measurement model, the measurement analysis for this study was carried out in accordance with published guidelines in the literature (Henseler & Chin, 2010). Verifying the validity and reliability of each construct contained in the study framework was the main goal of this examination. Internal consistency was used to measure reliability, making sure that each construct's indications were highly connected and consistently measured. Convergent validity, which assesses whether indicators accurately reflect their underlying construct, and discriminant validity, which guarantees that each construct is unique and not unduly associated with others, were the two main facets of validity that were investigated.

The PLS algorithm included in the SmartPLS program was used to conduct the analysis, producing thorough results that could be used to evaluate the measurement model's quality. The measurement model's output, shown in Figure 2, provides important information about how well the constructs perform in terms of validity and reliability. Indicator loadings, Cronbach's alpha, Composite Reliability (CR), and Average Variance Extracted (AVE) were among the important measures examined. The Heterotrait-Monotrait Ratio (HTMT) was computed in order to evaluate discriminant validity. These methodical procedures guaranteed a comprehensive assessment of the measurement model, verifying that every construct satisfied the necessary requirements for validity and reliability. This thorough verification procedure guaranteed the integrity of the relationships examined in the study and served as a strong basis for the structural model analysis that followed.

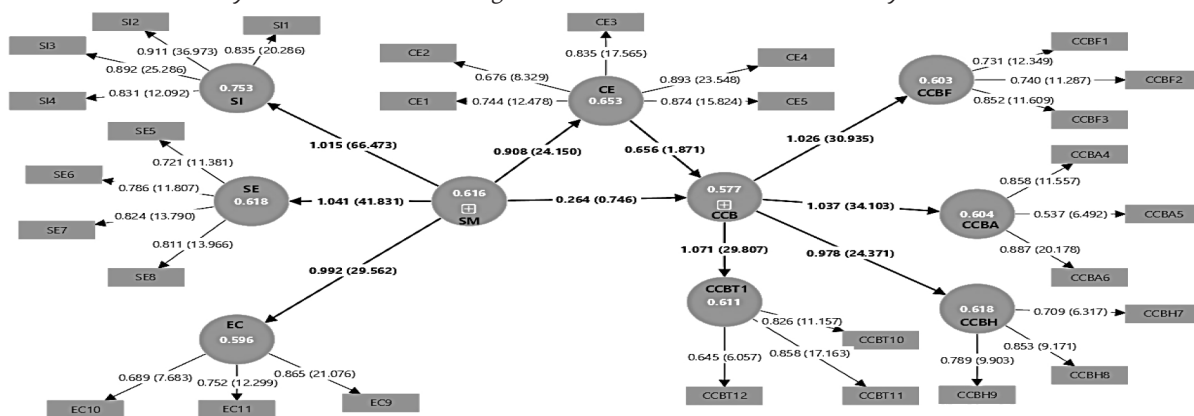


Figure 2: Measurement Model

Construct Reliability

Examining the indicator loadings was the first step in evaluating the measurement model. For the construct to effectively explain more than half of the variability of the indicator, the outer loading should be more than 0.708. All of the factor loadings were statistically significant and more than 0.70, as Table 1 demonstrates. The second step was to evaluate the reliability of internal consistency. Both Cronbach's alpha and CR were used. In Table 1, the CR scores and Cronbach's alphas ranged from 0.824 to 0.949 and 0.798 to 0.945, respectively. Since these values are higher than the 0.70 threshold established by Hair et al. (2019), they ensure strong internal consistency and reliability. The goal of the measurement model's third evaluation step was to look at each concept measure's convergent validity. This was achieved by determining the AVE. Using an AVE greater than or equal to 0.50 is recommended (Hair et al., 2019).

Convergent Validity

Convergent validity, as opposed to other latent variables, assesses the degree to which each indicator is associated with its associated construct (Urbach & Ahlemann, 2010). The average variance extracted (AVE) values generated by the PLS method were examined in this study in order to evaluate convergent validity. When the indicators account for at least 50% of the variance in the construct, the AVE value is considered good if it is more than 0.5. (Hair, Matthews, Matthews, & Sarstedt, 2017). Table 1 shows that all of the study's constructs had AVE values that were over the 0.5 limit, ranging from 0.650 to 0.814. By verifying that every construction accounts for a sizable portion of the variance of its indicators, these AVE values support the measurement model's adequacy. The results demonstrate that the constructs have a respectable level of convergent validity, ensuring that the indicators correspond to the associated latent variables and bolstering the reliability of the model for additional research.

Discriminant Validity

To ensure that each item in this study accurately measures its target construct and does not significantly overlap with other components, discriminant validity was evaluated. By examining the connections between items across many constructs, discriminant validity makes sure that a construct is unique and not just a reflection of other related constructs (Ramayah, Cheah, Chuah, Ting, and Memon, 2018). The HTMT ratio, which contrasts between-trait correlations -correlations between items of different constructs- with within-trait correlations -correlations within the same construct- was used to assess this. Henseler, Ringle, and Sarstedt (2015) state that problems with discriminant validity may be indicated by an HTMT score higher than 0.85.

All constructions have HTMT values below the 0.85 threshold, according to the analysis results, which are produced using the PLS technique and displayed in Table 2. These results validate the constructs' requisite degree of discriminant validity. To sum up, the assessment of the first-order measurement model shows that every construct satisfies the necessary requirements for validity and reliability, confirming its appropriateness for investigating the postulated linkages in the structural model.

Structural Model

After the validity and reliability of the measurement model were determined, the structural model was evaluated in order to examine the proposed relationships. Analysis of the path coefficients, their significance,

Table 1: The study's variables' reliability and validity

Constructs	Items	Indicator Reliability	Internal Consistency	Convergent Validity
		Outer Loadings > 0.5	Cronbach Alpha > 0.7	Composite Reliability > 0.6
SM			0.945	0.650
SI			0.923	0.814
	SI1	0.895		
	SI2	0.934		
	SI3	0.929		
	SI4	0.848		
SE			0.865	0.713
	SE5	0.796		
	SE6	0.843		
	SE7	0.865		
	SE8	0.870		
EC			0.818	0.732
	EC9	0.834		
	EC10	0.846		
	EC11	0.886		
CE			0.903	0.722
	CE1	0.869		
	CE2	0.785		
	CE3	0.816		
	CE4	0.900		
	CE5	0.873		
CCB			0.939	0.610
CCBF			0.825	0.741
	CCBF1	0.875		
	CCBF2	0.902		
	CCBF3	0.803		
CCBA			0.798	0.714
	CCBA4	0.894		
	CCBA5	0.698		
	CCBA6	0.929		
CCBH			0.831	0.748
	CCBH7	0.856		
	CCBH8	0.821		
	CCBH9	0.914		
CCBT			0.814	0.732
	CCBT10	0.904		
	CCBT11	0.901		
	CCBT12	0.753		

Note: SM: Sustainable Marketing, SI: Strategic Integrations, SE: Societal Engagement, EC: Ethical Capabilities, CE: Customer Engagement, CCBF: Customer Citizenship Behavior Feedback, CCBA: Customer Citizenship Behavior Advocacy, CCBH: Customer Citizenship Behavior Helping, CCBT: Customer Citizenship Behavior Tolerance.

effect sizes, and the coefficient of determination were all part of this assessment. In order to obtain a thorough grasp of the connections between the constructs, the study additionally investigated the possible mediating effects inside the model. Using t-statistics obtained from the bootstrapping procedure, the significance of the connections was ascertained. In accordance with standard practices in structural equation modelling, the bootstrapping parameters were set up for a one-tailed test at a 0.05 significant level. According to Ramayah et al. (2018), For a one-tailed test, the significant t-values are 1.645 at a 5% significance level ($p < 0.05$), 2.33 at a 1% significance level ($p < 0.01$), and 1.28 at a 10% significance level ($p < 0.1$). In accordance with accepted practices in PLS-SEM research, this study used a 5% significance level as the typical threshold for hypothesis testing.

Table 2 HTMT Results

	CCB	CCBA	CCBF	CCBH	CCBT	CE	EC	SE	SI	SM
CCB	0.781									
CCBA	0.832	0.845								
CCBF	0.707	0.810	0.861							
CCBH	0.849	0.737	0.673	0.845						
CCBT	0.754	0.831	0.824	0.790	0.835					
CE	0.832	0.685	0.820	0.668	0.795	0.810				
EC	0.686	0.517	0.759	0.571	0.649	0.782	0.815			
SE	0.751	0.645	0.761	0.568	0.757	0.727	0.760	0.844		
SI	0.806	0.689	0.792	0.620	0.832	0.835	0.747	0.849	0.702	
SM	0.815	0.679	0.832	0.635	0.818	0.844	0.817	0.844	0.851	0.806

Note 1: The HTMT Values are Lower than 0.85.

Note: SM: Sustainable Marketing, SI: Strategic Integrations, SE: Societal Engagement, EC: Ethical Capabilities, CE: Customer Engagement; CCBF: Customer Citizenship Behaviour Feedback; CCBA: Customer Citizenship Behaviour Advocacy; CCBH: Customer Citizenship Behaviour Helping; CCBT: Customer Citizenship Behaviour Tolerance.

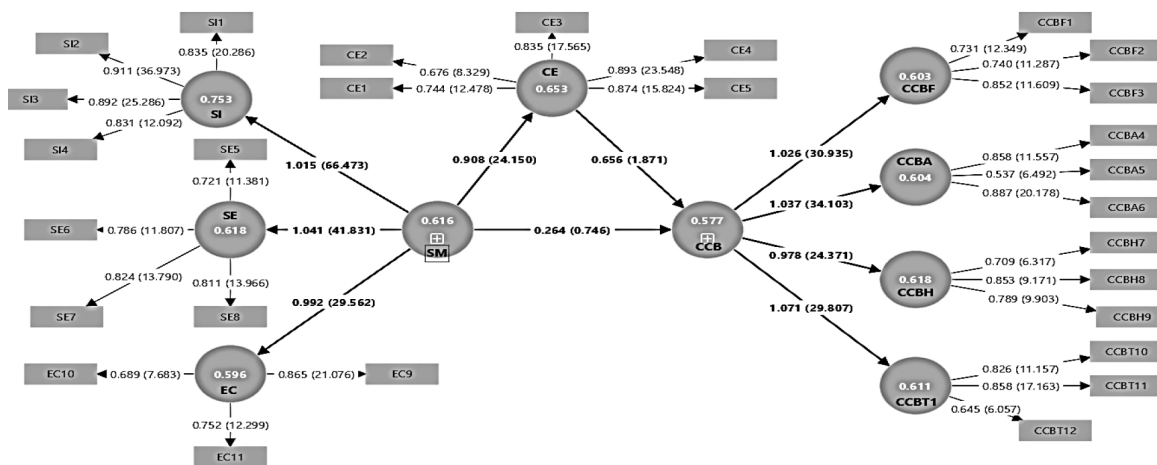


Figure 3: Structural Model Output

Evaluation of the Structural Model's Predictive Power

PLS-Predict, a technique used in SmartPLS to evaluate the predictive significance of models within the sample, was used in this study to completely examine the predictive accuracy among the models. Even though they are useful, traditional metrics like the blindfolding technique (Q2) and the coefficient of determination (R2) are not always sufficient to evaluate predictive performance. For instance, Q² derived from blindfolding provides limited insights into the relative predictive power of models, and R² only measures the model's explanatory power for the sample data without forecasting its performance on unseen data. To address these shortcomings, PLS-Predict was utilized as a more robust approach to evaluating predictive relevance. According to the suggestions made by Sledi et al. (2019), this study evaluated prediction errors using the 10-fold cross-validation technique in combination with the root mean squared error (RMSE). Table 4 demonstrates that all constructs have positive Q²Predict values, indicating a satisfactory degree of predictive relevance. Additionally, the predictive potential of the model was assessed by comparing the PLS-RMSE and LM-RMSE values (Shmuel et al., 2019).

Testing the Study Hypotheses

A thorough summary of the direct path coefficients for the structural models is given in Table 4, which further clarifies the connections between the constructs. The strength of this relationship is indicated by the standardized coefficients, which range from 0.656 to 0.908; greater coefficients indicate stronger relationships between variables (Hair et al., 2017). The study also assumed that SM has a significant positive impact on CCB H.1. The results of the analysis demonstrated a direct relationship between the independent variable SM and the dependent variable CCB ($\beta=0.860, p<0.01$). This result indicates that the strength of the relationship and the direct effect are strong, which requires testing the strength of the effect through mediation of the mediating variable CE; the result showed acceptance of the first hypothesis. The study also assumed that CE has a significant impact on CCB H.2. The results showed that the variable SM has a strong direct effect on the variable CCB ($\beta=0.656, p<0.01$). This result showed the great impact of CE on CCB; the result showed acceptance of the second hypothesis. The study assumed that SM has a significant positive impact on CE H.3. The results showed that SM has a significant positive impact on CE at $\beta=0.908, p<0.01$; the result shows that the hypothesis is accepted.

The structural model's particular indirect effects are highlighted in Table 4, with particular attention paid to CE's mediating function in the interactions between SM and CCB. The results confirm that CE significantly mediates the impact of all predictors on CCB, with positive and statistically significant path coefficients and confidence intervals that exclude zero. The analysis reveals that SM has a significant indirect effect on CCB through CE ($\beta=0.596, p<0.01$). The results indicate that commitment to implementing sustainable marketing affects the customer citizenship behavior in the eco-hotel sector through customer engagement.

Discussion

The purpose of this study is to investigate the possible mediating role of Customer Engagement (CE) in the relationship between Customer Citizenship Behavior (CCB) and Sustainable Marketing (SM). We used bootstrapping in the study to examine the indirect effect of SM on CCB using CE. The results of the analysis show that SM significantly enhances CCB, which is consistent with what Soelton et al. (2020) indicated. The findings demonstrated that CE substantially enhances CCB, which is in line with what was said by Hur et al. (2021), who stated that, according to organizational literature, engaged employees have higher levels of CCB towards the company.

Similarly, we contend that consumer opinions of SM have a greater chance of influencing and proving brand loyalty. The hypothesis's outcome demonstrated that H.3 SM positively impacts CE; this finding is in line with Hollebeek's (2011) findings. Who mentioned that a company's sustainable practices enhance its

Table 3 Predictive Relevance

	PLS-RMSE	LM-RMSE	PLS-LM	Q ² predict
CCBF1	1.112	1.222	-0.11	0.475
CCBF2	1.183	1.357	-0.174	0.395
CCBF3	1.187	1.367	-0.178	0.391
CCBA4	1.266	1.435	-0.169	0.334
CCBA5	1.255	1.424	-0.169	0.352
CCBA6	1.211	1.373	-0.162	0.401
CCBH7	1.218	1.385	-0.167	0.353
CCBH8	1.199	1.359	-0.16	0.354
CCBH9	1.179	1.271	-0.092	0.403
CCBT10	1.189	1.357	-0.168	0.364
CCBT11	1.147	1.321	-0.174	0.415
CCBT12	1.178	1.313	-0.135	0.385
CE1	1.187	1.351	-0.164	0.323
CE2	1.228	1.338	-0.11	0.359
CE3	1.241	1.373	-0.132	0.441
CE4	1.187	1.284	-0.097	0.354
CE5	1.298	1.445	-0.147	0.364

Note: CE: Customer Engagement; CCBF: Customer Citizenship Behavior Feedback; CCBA: Customer Citizenship Behavior Advocacy; CCBH: Customer Citizenship Behavior Helping; CCBT: Customer Citizenship Behavior Tolerance.

Table 4 Structural Model Results

Relationship	BETA	LL	UL	S.E	T-Stat	P-value	F-Sq	Result	Hyp.
Specific Direct Effect									
SM -> CCB	0.860	0.852	0.826	0.053	16.096	0.000	0.066	Accepted	H.1
CE -> CCB	0.656	0.718	0.785	0.351	1.871	0.061	0.406	Accepted	H.2
SM -> CE	0.908	0.907	0.684	0.038	24.150	0.000	4.717	Accepted	H.3
Specific Indirect Effect									
SM -> CE -> CCB	0.596	0.656	0.523	0.340	1.752	0.080	0.023	Accepted	H.4

Note: SM: Sustainable Marketing, CE: Customer Engagement; CCB: Customer Citizenship Behavior.

brand ranking and keep customers interested over time, and that branding builds a psychological image for consumers that encourages their engagement. For businesses, customer engagement and brand image are extremely valuable. As a result, the resource-based view encourages businesses to improve their sustainable marketing in order to gain an advantage over competitors. Additionally, sustainable marketing offers a corporate social image that is very beneficial for consumer engagement and brand image. It became evident from discussing the effect of the mediating variable CE on the dependent variable CCB that there is a strong effect. This finding supports the notion that, by promoting the association between predictor constructs and outcome variables, such as CCB, customer engagement has been highlighted in the literature as a crucial element that enhances a company's performance and success.

In contrast, consumer engagement largely reflects a customer's emotional state or condition as a result of their subjective assessment of their encounters with activities associated with consumption. Based on this hypothesis, we propose that customer engagement plays a mediating role in the relationship between SM and CCB. By examining the indirect effects, we found that, when the mediating variable CE is present, the independent variable SM has a significant impact on the dependent variable CCB, confirming the partial mediation of the mediating variable in the effect between the two variables.

Implications for Theory and Practice

Theoretical Implications

Significant theoretical contributions are made by the current study on how using sustainable marketing affects customer citizenship behavior in the eco-hotel industry, with customer engagement playing a mediating function inside a sampling of Saudi Arabia's eco-hotel sector. The study adds to the body of knowledge about sustainable marketing and how it affects customer citizenship behavior.

Businesses have come to understand the significance of incorporating sustainability into their marketing strategy as environmental concerns and the demand for more sustainable practices have grown. Examines how using sustainable marketing affects the civic engagement of a sample of eco-friendly hotels in the Saudi hospitality industry. By offering empirical proof of the impact of sustainable marketing strategies on customer citizenship behavior, this study will contribute to the collection of literature.

Examines the role of consumer engagement as a mediator in the relationship between customer citizenship behavior and sustainable marketing. By doing this, this study will add to the body of knowledge by shedding light on how crucial customer engagement is to the successful application of sustainable marketing strategies. Businesses are self-interested, but they are also constrained by their own moral convictions and are willing to forgo short-term earnings in favor of long-term, desired benefits, according to Lunde (2018), Nikolaou et al. (2019), and Peterson (2021).

Practical Implications

The current research's practical significance is apparent in a number of ways. First, the study focused on eco-friendly hotels because of the significance of the Saudi eco-hotel industry, which is demonstrated in the significance of the Saudi hotel industry, which is demonstrated by the fact that, in line with the Kingdom's Vision 2030, hotel services are regarded as necessary services offered to both locals and tourists. «Sustainability» in Saudi Hotels: A Path to Exceptional Hospitality and Guest Contentment. In the Kingdom of Saudi Arabia, using sustainable practices has proven essential to improving hotel services and increasing visitor happiness. Saudi hotels are adapting their strategy to meet the demands of their visitors, who are becoming more conscious of social and environmental responsibility, in line with the global trend towards sustainability.

The Ministry of Tourism's implementation of these practices strengthens Saudi Arabia's standing as a sustainable travel destination and demonstrates the hospitality industry's dedication to Vision 2030, which seeks to accomplish sustainable development in a number of areas. The study's analysis of how using sustainable marketing affects consumer citizenship behavior can help.

Second, the study emphasises how crucial customer engagement is to boosting marketing effectiveness in the Saudi eco-hotel industry. Modern marketing relies heavily on customer interaction, which offers interactive platforms that let hotels speak with their target customers directly. This supports the points made by Cheung et al. (2021) and Bazrkar et al. (2021). Long-term success is facilitated by direct communication with customers across a variety of channels, which fosters loyalty and trust. Lastly, by using sustainable marketing strategies in the study sample of eco-friendly hotels, this study will more realistically increase customer engagement in the hotel industry, which will have a big impact on the organizations' short- and long-term objectives. This is consistent with what Abdelmoety, Aboul-Dahab, and Agag (2022) indicated. Who said that the positive impact of social media on a company's reputation could increase customer citizenship behavior (CCB) and the relationship between the company and its customers.

Research Limitations and Future Directions

There were various restrictions on this investigation. Only 388 members of the study population were included. A sample of eco-hotels in the Riyadh area of Saudi Arabia, which has 403 eco-certified hotels according to ETIC Hotels (2022), was also used in the study. Thus, eco-hotels in the hotel industry outside of Riyadh may be chosen for future research. The following variables were also used in the study: CE, SM, SI, SE, EC, CCBT, CCBH, CCBA, and CCBF. It's likely that different factors were used than those in earlier studies.

The results of this investigation might not apply to other nations, businesses, cultures, or work environments. Reviewing and validating the study's findings in various hotel industry scenarios outside of the study area is essential for a deeper understanding and to ensure that the findings can be more broadly applied. Second, the study only looked at how well customer involvement may mediate the link between sustainable marketing and customer citizenship behavior.

It is advised that more study be done on various possible mechanisms (mediators), including customer perceptions of value, social media marketing, value co-creation, and attitudes towards sustainable products. The demographics of the survey respondents, such as age, gender, and level of education, may change the relationship between sustainable marketing and customer citizenship behavior in ways that are not examined in this research.

Future studies could look at these factors' possible moderating effects on these correlations. Lastly, our study employed sustainable marketing as a one-dimensional notion. Other dimensions should be included in future research to determine which component best predicts this connection. This could offer vital information on the ways in which each element contributes to these associations.

Data Availability Statement: The Corresponding Authors Will Make the Study's Data Available Upon Request.

Appendix A

Table 5. Scale items

Sustainable Marketing "SM"			
SI	SI1	The effectiveness of my department is evaluated using a mix of social, environmental, and financial metrics.	(Noorman & Uiterkamp, 2014; Hult et al., 2018; Nikolaou et al., 2019; Vatan & Yilmaz, 2020)
	SI2	One of the core principles of our company culture is sustainable development.	
	SI3	Employees at my hotel are driven to meet social and environmental objectives in addition to financial ones.	
	SI4	We keep an eye on how our goods and services affect the environment.	
SE	SE5	We collaborate with a range of stakeholders to comprehend the expectations they have set for us.	(Griffith & Yalcinkaya, 2015; Hoffman, 2018; Rodriguez & Bharadwaj, 2019; Marcelo, 2019)
	SE6	We choose our suppliers using a set of economic, social, and environmental standards.	
	SE7	Through career planning, training, and other initiatives, we support our workers' professional and personal growth.	
	SE8	Purchasing and utilising eco-friendly goods and services is what we prefer.	
EC	EC9	We price our goods and services in an ethical and responsible manner.	(Geiger et al., 2018; Hoffman, 2018; Chattopadhyay, 2019).
	EC10	Our clients and customers are always fully informed about our offerings.	
	EC11	Customers are given honest, accurate, and clear information about the features of our services.	
Customer Engagement "CE"			
CE	CE1	Using hotel services is something I am very passionate about.	(Dwivedi, 2015; Carvalho, Fernandes, 2018).
	CE2	I'll be able to use the hotel services for a very long time.	
	CE3	I get excited when I interact with the hotel.	
	CE4	I am engrossed in my interactions with the hotel.	
	CE5	Interacting with the hotel makes me joyful.	
Customer Citizenship Behavior "CCB"			
Customer Citizenship Behavior Feedback "CCBF"			
CCBF	CCBF1	I let the staff member know if I have a helpful suggestion for enhancing customer service.	Yi, Gong, Lee (2013)
	CCBF2	I inform the staff member when I encounter an issue.	
	CCBF3	I make a comment when an employee provides me with excellent service.	
Customer Citizenship Behavior Advocacy "CCBA"			
CCBA	CCBA4	I told everyone good things about my accommodation and the staff.	Yi, Gong, Lee (2013)
	CCBA5	I urged family members and acquaintances to stay at the hotel.	
	CCBA6	I told everyone about the hotel.	
Customer Citizenship Behavior Helping "CCBH"			
CCBH	CCBH7	I help other customers when they ask for assistance."	Yi, Gong, Lee (2013)
	CCBH8	I offer guidance to other clients.	
	CCBH9	If other clients appear to be having issues, I assist them.	
Customer Citizenship Behavior Tolerance "CCBT"			
CCBT	CCBT10	I'm willing to be patient if the staff member makes a mistake while providing services.	Yi, Gong, Lee (2013)
	CCBT11	I would be prepared to make accommodations if I had to wait longer than I would have otherwise anticipated to obtain the service.	
	CCBT12	I would tolerate it if the service did not meet my expectations.	

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