

Article

Social and Personal Norms in Shaping Customers' Environmentally Sustainable Behavior in Restaurants' Social Media Communities

Yoon-Jung Jang ^{1,*}  and Eojina Kim ² ¹ School of Hotel, Food Service & Culinary Arts, Woosong University, Daejeon 34606, Republic of Korea² Howard Feiertag Department of Hospitality and Tourism Management, Virginia Tech, Blacksburg, VA 24061, USA

* Correspondence: yjang@wsu.ac.kr; Tel.: +82-42-630-9253

Abstract: This study aimed to investigate how personal and social norms affect customer engagement with social media that promote environmentally sustainable behaviors. A self-administered survey of potential participants was conducted. Hypothesized relationships were tested using structural equation modeling and multigroup analysis. The findings confirmed the strong positive effect of social norms on customer engagement; this engagement had a significant influence on brand commitment and sustainable behavior. The moderating roles of social rewards were indicated by significantly greater effects of social norms on customer engagement in the high social reward group.

Keywords: restaurant; environmentally sustainable behavior; social media; personal norm; social norm



Citation: Jang, Y.-J.; Kim, E. Social and Personal Norms in Shaping Customers' Environmentally Sustainable Behavior in Restaurants' Social Media Communities. *Sustainability* **2023**, *15*, 6410. <https://doi.org/10.3390/su15086410>

Academic Editor: Ting Chi

Received: 14 February 2023

Revised: 3 April 2023

Accepted: 4 April 2023

Published: 9 April 2023



Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Social and environmental responsibility have become critical components of any business's sustainable growth [1], and a company's ability to perform environmental activities can lead to greater brand loyalty [2]. Restaurants' environmentally sustainable activities include recycling, waste reduction, local sourcing, and water and energy conservation [1]. A survey by the American National Restaurant Association (2018) [3] found that restaurants' sustainable initiatives significantly affect customers' choice of where to dine. The importance of sustainability management in influencing customers' decision-making has prompted restaurant operators to advertise their sustainability efforts and utilize social media as a vital communication channel for enhancing customers' positive experiences and behaviors.

Most scholars hoping to understand customer environmental behavior have adopted personal and social norms as core constructs [4]. A social (or subjective) norm is "the perceived social pressure to perform or not to perform the behavior" [5]. Social norms reflect beliefs about how to behave based upon social pressures or expectations, such as the approval or disapproval of others. Perceived social pressures influence individuals' behavior in certain ways, for instance, encouraging actual prosocial behavior [6]. Researchers have demonstrated the appropriateness of social norms in comprehending environmental behavior through the application of the theory of planned behavior (TPB) [7–9].

While social norms are externally imposed [10], personal norms are internalized, reflecting a person's sense of moral obligation [11]. Individuals are guided by self-evaluations about what is right or wrong in making decisions about sustainable behaviors [12]. Irrespective of social expectations, people with a strong sense of moral obligation take pride in acting in line with their personal norms and are more likely to intend to adopt pro-environmental behavior [13]. Personal norms have been highlighted in several socio-psychological theories, such as the norm activation model (NAM) [11] and value-belief-

norm model (VBN) [14], and some empirical evidence has demonstrated that personal norms are significant antecedents of environmentally sustainable behavior [6].

Although evidence suggests that both personal and social norms can motivate behavior [8,15], it remains unclear whether the two have an equal effect on outcome behavior when they are integrated into a single model, particularly in social media. Little empirical research has been undertaken to test the impact of the two types of norm constructs in explaining behavioral intentions in social media. In addition, the usefulness of two constructs in understanding environmentally sustainable behavior in social media communities is still being questioned [6,16]. Including both critical constructs can facilitate comprehension of customers' intention formation for sustainable behaviors rather than simply introducing only one normative construct.

Furthermore, customers' environmentally sustainable practices in social media may depend on the situational context; however, little research [15,16] has compared the effects of both norms when social rewards are believed to regulate subsequent sustainable behavior in social media [17,18]. Sustainable practices in social media could consist of sharing ideas or information on sustainability issues suggested or promoted by restaurant brand communities. Social rewards, viewed as social recognition, can incentivize customers longing for self-expression to act in socially desirable ways in public communities [17,19]. Customers who expect their goodwill to be shown to the public will be encouraged to engage in and support sustainable initiatives supported by social media communities [18,20]. Investigation of the moderating role of social rewards may thus clarify the psychological mechanism of sustainable behavior of community members.

This study illuminates the role of customer engagement in supporting sustainable initiatives within social media communities. In the context of social media, customer engagement refers to voluntary actions undertaken by members, often stemming from shared values and emotional affiliation among community members [21,22]. While previous studies have identified various external motivational factors that influence customer engagement behavior, such as prior knowledge, perceived benefits, and experiences [23–25], few have explored the role of internal and psychological motivational factors such as norm variables, particularly within social media contexts. To address this gap, the present study examines the influence of personal and social norm variables as antecedents of engagement behavior among members of social media communities.

This study incorporated brand commitment as one of the customers' subsequent behaviors. Brand commitment refers to customers' psychological attachment to a brand and is closely associated with a long-term relationship with or loyalty to the brand [26]. In the social media context, several studies have exemplified the significance of customer participation in enhancing customers' intention to maintain a long-term relationship with the brand and to strengthen their brand loyalty [27,28]. Those studies showed that customers' active participation or involvement, and their interactions in online brand communities strengthened their commitment and loyalty to the brand [27–29]. Although brand commitment has been covered in such studies, there have been few investigations of the constructs of customer engagement and environmental sustainability. In this respect, the inclusion of the customer engagement construct in this study aims to shed light on the customer decision-making process leading to brand commitment in online communities that support environmental sustainability.

To fill the aforementioned research gaps, the objectives of this study are: (1) to investigate the importance of personal and social norms in determining customer engagement in social media supporting environmental sustainability; (2) to evaluate the importance of customer engagement in predicting brand commitment and sustainable behavior; and (3) to examine how social rewards serve as a moderator in the proposed theoretical framework. To achieve these objectives, the data focus on restaurant customers. Restaurants have begun promoting their sustainability initiatives in their social media communities to share the value of sustainability and build long-term relationships with their environmentally conscious customers [18].

The theoretical contribution of this study lies in the inclusion of both norms which are critical in understanding sustainable behavior in the social media context. This study also considers the involvement of a moderator (social rewards) that may reinforce the role of both norms in the social media context. Applicability of both norms in a social media context would thus be worthwhile in helping design communication strategies that reinforce personal or social norms which may increase the likelihood of customer participation in sustainable behavior.

2. Literature Review

2.1. Social and Personal Norms

Social norms are externally imposed norms that reflect the source of an individual's motivations [6]. TPB is a conceptual framework that encompasses critical components for explaining individuals' intentions and actions [5]. According to the theory, individuals' behavioral intention is determined by their attitude and subjective norm, and their capability regarding that behavior. An individual's subjective norms, often called social norms, about a certain behavior are associated with the beliefs of important people. Individuals who have greater accordance with those beliefs are more likely to display greater intention to practice that behavior [5].

The significance of social norms in explicating pro-environmental behavior has been recognized in the hospitality context [8,9,30]. Teng et al. (2015) [9] contended that subjective norms were the most influential factor among all TPB constructs, implying that it should be considered critical in guests' intentions to visit an environmentally friendly hotel. In the restaurant context, customers' subjective norms were found to be significant in influencing their intention to patronize environmentally friendly restaurants serving organic food [8]. Moon (2021) [30] also confirmed the significance of social norms in explicating customers' intention to dine in environmentally friendly restaurants.

A personal norm is a sense of personal obligation or responsibility to perform socially desirable actions [14,31]. Norm activation theory [11] suggests that personal norms stimulated by both awareness of consequences (the outcomes of not engaging in) and ascription of responsibility are a core concept in explaining altruistic behavior [32,33]. In their VBN model, Stern et al. (1999) [31] broaden Schwartz's view to better understand pro-environmental behavior and emphasized the criticality of a personal norm construct in predicting environmentally responsible actions [1,34]. They confirmed that individuals' pro-environmental personal norms reflected from strong environmental values influenced their support for pro-environmental actions.

Empirical evidence has demonstrated that individuals with a stronger sense of moral obligation are more likely to engage in climate change mitigation behaviors such as the use of energy-efficient products [35]; they have also shown the intention to purchase eco-friendly products made of recycled materials [36]. In some hospitality studies, hotel guests' personal norms (sense of pro-environmental obligation) were demonstrated to be a significant factor in guests' environmental actions such as water conservation intention and intention to reuse towels in their hotel room [7,34]. Despite its significance, the role of personal norms has been neglected in sustainability studies in the hospitality context. A better understanding of social and perceived moral norms will advance the knowledge of customer sustainable behavior in restaurants' social media communities.

Based on the aforementioned discussion, it is expected that both norms are positively related to an individual's involvement or engagement in restaurants' social media communities that promote members' environmentally sustainable behaviors. The following hypotheses are therefore developed.

Hypothesis 1 (H₁). *Customers' social norms will positively influence their engagement in social media communities that support environmentally sustainable initiatives.*

Hypothesis 2 (H₂). *Customers' personal norms will positively influence their engagement in social media communities that support environmentally sustainable initiatives.*

2.2. Customer Engagement in Social Media, Brand Commitment, and Sustainable Behavior

Customer engagement is instrumental in building a relationship between customers and a brand. In the social media context, customer engagement consists of voluntary actions that arise from shared values and emotional affiliation among members of a brand community [21,22] and such actions include providing information and sharing ideas, concerns, or feedback. Several investigations have concluded that customers' participation in social media communities influenced their attitudes toward the brand. In tourism social media, Li, Teng, and Chen (2020) [37] showed that customers engaged in social media became loyal to the brand by building emotional attachment and trust. A sense of connectedness through community engagement is also likely to encourage members to adopt prosocial behaviors [21]. Sung et al. (2020) [38] asserted that, while sharing information and receiving messages from trusted ones, people tended to adopt more environmentally friendly behaviors. Customers highly engaged in social media are, therefore, easily influenced by other community members and are likely to change their consumption decisions or behaviors and demonstrate pro-environmental behaviors [39]. Therefore, the following hypotheses are proposed:

Hypothesis 3 (H₃). *Customers' engagement in social media communities will positively influence their brand commitment.*

Hypothesis 4 (H₄). *Customers' engagement in social media communities will positively influence their sustainable behavior.*

2.3. Moderating Role of Social Rewards

Positive reinforcement can influence consumer behaviors [40], for instance, status recognition, which can be an essential motivation for individual behavior [41]. Social rewards, in this study, indicate social recognition from other members of social media communities, for example, personalized attention for participation in sustainability-relevant actions [18]. Milinski et al. (2006) [42] argued that people were likely to sacrifice their personal benefit (e.g., comfort) for societal benefit (e.g., climate protection) and their altruistic behavior substantially increased with social reputation and status.

In a hotel study, guests who want public recognition showed a stronger intention to visit hotels that displayed socially responsible images [43]. In a study of the restaurant context, Shin and Mattila (2019) [44] demonstrated the importance of perceived social recognition in understanding customer behavior in environmentally friendly restaurants offering healthy menu options. Offering rewards may help encourage customers to support companies' sustainable initiatives and engage them in designing sustainable service processes in social media [20]. It is therefore expected that social rewards may also offer an incentive to people with pro-environmental personal and social norms [17]. Therefore, the following hypotheses are formulated:

Hypothesis 5a (H_{5a}). *Social rewards will moderate relationships between social norms and customer engagement.*

Hypothesis 5b (H_{5b}). *Social rewards will moderate relationships between personal norms and customer engagement.*

Hypothesis 5c (H_{5c}). *Social rewards will moderate relationships between customer engagement and brand commitment.*

Hypothesis 5d (H_{5d}). *Social rewards will moderate relationships between customer engagement and sustainable behavior.*

The proposed research model is presented in Figure 1.

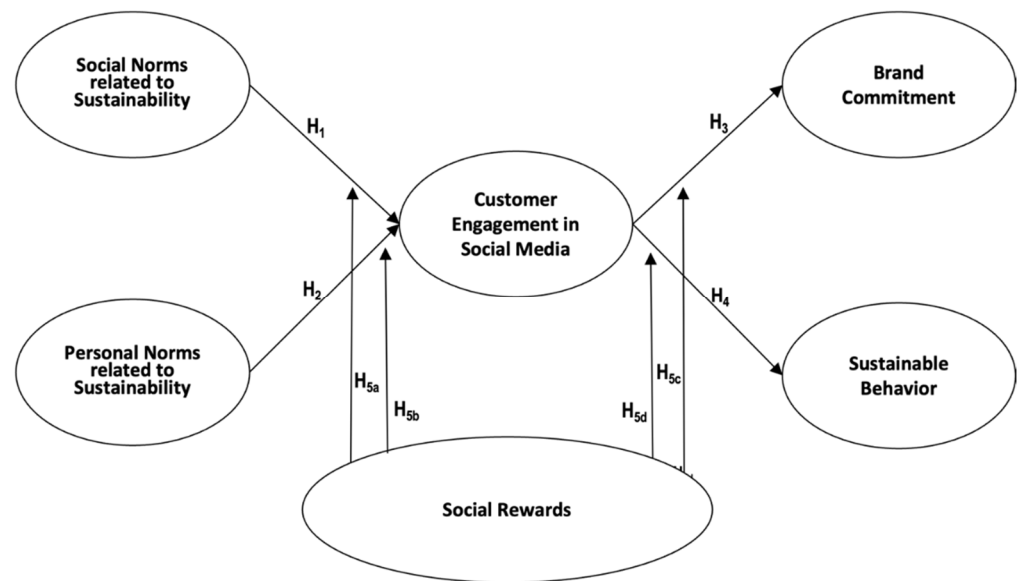


Figure 1. The proposed model.

3. Method

3.1. Data Collection and Sampling

In the United States, a cross-sectional empirical survey was conducted where the self-administered online questionnaire was used in Amazon Mechanical Turk to collect data from potential participants. A link to the survey on Qualtrics was included in the survey. The data were gathered between 13 and 16 April 2021. In order to choose study participants from the panelists kept by MTurk, a purposive sampling method was employed. The sample was restricted to members having a HIT (Human Intelligence Tasks) approval percentage of at least 90%. It is an important metric as it serves as an indicator of the worker's reliability and the quality of their work. Participants received explanations and illustrations of environmentally sustainable restaurant brands, as well as their sustainable initiatives. Additionally, participants were required to disclose which sustainable restaurant brand communities they follow or hold a membership with. The survey did not include respondents who are neither members nor individuals who follow restaurants' brand communities.

The following four criteria were used to screen participants: (1) being over 18 years of age; (2) living in the United States; (3) having participated in a sustainable restaurant's social media community that supports environmentally sustainable initiatives within the six months of the survey date; and (4) being a current follower or member of a sustainable restaurant brand's social media community.

To ensure data quality, the questionnaire contained attention-check questions and social desirability indicators. Careless respondents were filtered out through the attention-check questions within the survey. Four approaches have been recommended by Podsakoff, MacKenzie, Lee, and Podsakoff (2003) [45] to test common method variance. To reduce the likelihood of common method variance, the study employed various methods such as utilizing data from different time periods, randomizing questionnaire items, and conducting ex-post statistical analyses.

A pilot test with 50 participants was conducted prior to the main survey using the same approach. The questionnaire's reliability and clarity were found to be sufficient based on the results of the pilot test. Out of the 558 surveys that were collected for the main study, 488 valid responses were left after screening for additional analysis. The study was authorized by the Institutional Review Board of a U.S. research university.

3.2. Research Instrument

The first component of the survey asked participants about their experiences with online communities and the restaurant's brand or social media community. Questions pertaining to the conceptual model with six constructs were included in the second portion. Three social norms relating to sustainability were modified from Shin et al. (2018) [8], such as "Most people who are important to me think I should engage in environmental actions". Three items of personal norms related to sustainability followed Han and Hyun (2018) [7], such as "I feel an obligation to practice eco-friendly activities (e.g., recycling, waste reduction)". Three items were utilized to measure customer engagement in social media, which were adopted from Kang et al. (2014) [28] and Tussyadiah et al. (2018) [39]; for example, "I frequently provide useful information to other members in general". Four items adopted from Kang et al. (2014) [28] assessed brand commitment, for instance, "I will stay in the sustainable restaurant brand next time". Sustainable behavior was examined using three items adapted from Qu and Lee (2011) [46] including "Where I purchase products or services has changed as a result of my being in the brand community of the sustainable restaurant". Social rewards were measured using four items adopted from Choi and Seo (2017) [17] and Lee et al. (2015) [47] as moderating variables including "My participation is recognized by others in the brand community of the restaurant". A 7-point Likert scale was used to measure all the items (1 = strongly disagree to 7 = strongly agree). Demographic information, including those on age, gender, ethnicity, marital status, education, occupation, and income, made up the questionnaire's final section.

3.3. Data Analysis

The Statistical Package for the Social Sciences (IBM SPSS 26.0 for Windows software) and the Analysis of Moment Structures (IBM AMOS 26.0 software) were used to examine the data. To test the measurement and structural models, the study utilized the two-step approach proposed by Anderson and Gerbing (1988) [48]. Confirmatory factor analysis (CFA) was first utilized to ensure the constructs' unidimensionality using a maximum likelihood estimation. Secondly, to examine the hypothesized relationships among the constructs, structural equation modeling (SEM) was examined. The study also examined the common variance bias and investigated the moderating effect of social rewards.

4. Results

4.1. Sample Profile

Out of 488 respondents, 53.3% were male and 44.1% were female. The majority (42.8%) of the sample's participants were in the 25–34 age bracket, followed by people aged 35 to 44 (30.1%), 45 to 54 (14.8%), and 5.7% were between the ages of 18 and 24. Among the respondents, 77.5% were Caucasians (including Hispanics), followed by African Americans (10.2%) and Asians (6.6%). Less than USD 50,000 annual household income before taxes was reported by 37.9% of the respondents, followed by 29.9% by households earning between USD 50,000 and USD 74,999, and 16.2% by households earning between USD 75,000 and USD 99,999. Overall, 49.4% of respondents had a bachelor's degree, compared to 26.8% who had an associate's degree or another type of college degree and 9.4% who had just completed high school, and 8.8% who had postgraduate degrees. Moreover, 50.2% of the people in the sample were married while 47.8% were single. When variables and demographics (age and gender) were correlated, the results revealed that the correlation coefficient value was not high, indicating that control variables are not required for the model.

4.2. Reliability and Validity Assessments and Confirmatory Factor Analysis

Before testing the structural model, the CFA evaluated the measurement model by verifying the underlying structure of the constructs and assessing unidimensionality, reliability, and validity. An assessment using Cronbach's alpha, to test the internal consistency of the measurement items, demonstrated acceptable reliability, with values ranging from 0.84 to 0.92 ($\alpha = 0.70$), as recommended by Nunnally (1978) [49]. The study employed

the three criteria proposed by Anderson and Gerbing (1988) [48] and Fornell and Larcker (1981) [50] were applied to assess convergent validity. First, the constructs' standardized loadings were found to be significant, ranging from 0.74 to 0.95 (Bagozzi and Yi, 1988) [51]. Second, the composite reliability (CR), which ranged from 0.85 to 0.92, was higher than the suggested 0.70 criterion [49]. Third, by showing that each construct was unidimensional and exceeding the minimum acceptable criterion of 0.50 [50], the average variance extracted (AVE) estimates ranged from 0.66 to 0.80, indicating convergent validity of the constructs. Table 1 provides a summary of the measures, loadings, and reliability. To establish discriminant validity, the AVE of each construct was compared to the squared correlation coefficients between the constructs, following the approach recommended by Fornell and Larcker (1981) [50] and is shown in Table 1. In summary, the measures of the measurement model exhibited acceptable reliability and demonstrated convergent and discriminant validity of the constructs. We used the statistical techniques of Podsakoff et al. (2003) [45] to assess potential artificial inflation due to a common variance bias.

Table 1. Measures, loadings, reliability, and squared correlations matrix among latent constructs.

Measure	SN	PN	CE	BC	SB
SN: Social Norms related to Sustainability Variables ^a : Loading ^b SN01: 0.88, SN02: 0.89, SN03: 0.91	1.00				
PN: Personal Norms related to Sustainability PN01: 0.81, PN02: 0.83, PN03: 0.84	0.38	1.00			
CE: Customer Engagement in Social Media CE01: 0.78, CE02: 0.85, CE03: 0.86, CE04: 0.79	0.18	0.07	1.00		
BC: Brand Commitment BC01: 0.88, BC02: 0.82, BC03: 0.90 BC04: 0.83	0.18	0.16	0.28	1.00	
SB: Sustainable Behavior SB01: 0.82, SB02: 0.83, SB03: 0.78	0.26	0.19	0.45	0.23	1.00
AVE	0.80	0.68	0.67	0.73	0.66
CR	0.92	0.87	0.89	0.92	0.85
Cronbach' α	0.92	0.86	0.89	0.92	0.85

Note: Correlation coefficients were estimated from AMOS 28.0. All were significant at 0.001 levels. ^a All items were measured on a 7-point Likert scale; ^b loading = standardized regression weights, all were significant at 0.001 levels; α = Cronbach's alpha; AVE = average variance extracted; CR = composite reliability. Model measurement fit: $\chi^2 = 285.58$ ($df = 109$, $p < 0.001$, $\chi^2/df = 2.62$), RMSEA = 0.058, CFI = 0.97, TLI = 0.96, IFI = 0.97.

4.3. Research Hypotheses Testing and Structural Equation Modeling

The proposed model's validity as well as the relationships between the hypothesized paths were examined using SEM. The entire group underwent testing before analyzing the moderating effect of social reward. Evaluation of the overall model fit of the structural model and goodness-of-fit indices indicated that the estimation produced an appropriate model fit: $\chi^2 = 373.85$, $df = 114$, $p < 0.001$, $\chi^2/df = 3.28$, RMSEA = 0.068, CFI = 0.96, TLI = 0.95, IFI = 0.96. The model's fit appeared satisfactory and thus remained for hypothesis testing.

The hypotheses were tested by examining the t values associated with the path coefficients. Hypothesis 1, the relationship between social norms related to sustainability and customer engagement, remained statistically supported ($\beta = 0.44$; $t = 7.00$, $p < 0.001$). Hypothesis 2, which examined the effect of personal norms related to sustainability on customer engagement was not supported ($\beta = 0.06$; $t = 0.90$; $p > 0.05$). These findings suggested that social norms related to sustainability were a better predictor than personal norms in understanding customer engagement for brand commitment. The data supported Hypothesis 3 by showing customer engagement significantly affected brand commitment ($\beta = 0.57$; $t = 11.87$; $p < 0.001$). Lastly, customer engagement significantly affected sustainable behavior ($\beta = 0.70$; $t = 13.28$; $p < 0.001$), supporting Hypothesis 4. The results showed how important consumer interaction is for increasing brand loyalty and sustainable behavior. Table 2 gives a summary of the findings, and Figure 2 shows the estimated model.

Table 2. The results of the structural model and hypotheses testing.

Hypothesized Paths	Standardized Path Coefficient	t-Value	Results
H ₁ : SN → CE	0.44 ***	7.00	Supported
H ₂ : PN → CE	0.06	0.90	Not Supported
H ₃ : CE → BC	0.57 ***	11.87	Supported
H ₄ : CE → SB	0.70 ***	13.28	Supported

Structural Model: $\chi^2 = 373.85$, $df = 114$, $p < 0.001$, $\chi^2/df = 3.28$, RMSEA = 0.068, CFI = 0.96, TLI = 0.95, IFI = 0.96

Note: Critical coefficient (t value) < 1.96 indicates non-significant relationship; *** $p < 0.001$.

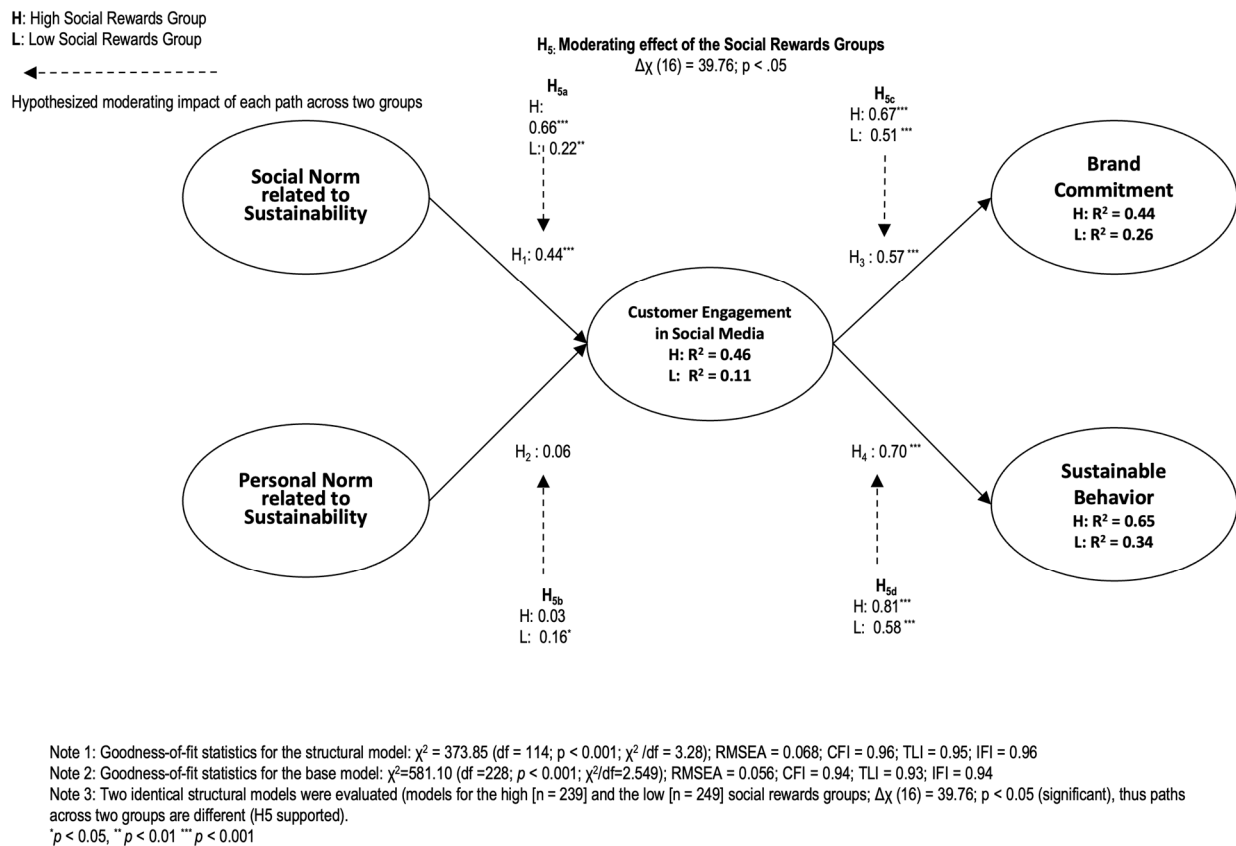


Figure 2. Structural path model with parameter estimates.

4.4. Assessment of Moderation Hypotheses and Test for Metric Invariance

To test the moderation effect of social rewards proposed in the conceptual model, a multigroup SEM analysis was performed. Four questions were used to measure the moderating variable, social rewards (Cronbach’s α 0.84). The high social reward (HSR) and low social reward (LSR) categories were identified from the sample. In this grouping procedure, a K-means cluster analysis was carried out and two clusters were determined by the authors. The high group and low group were produced as HSR (239 cases, 49.0%) and LSR (249 cases, 51.0%), respectively.

An invariance test was also performed between the two subsample groups to ensure that the scales measured identical traits in both groups before examining the moderating effects. The measurement invariance test was necessary to determine whether the measurement model was equivalent between the two groups. The non-restricted and full-metric invariance models across the two groups are summarized in Table 3. The chi-square difference supported measurement invariance for the two groups between the

non-restricted model and the full-metric invariance model and was statistically insignificant ($\Delta\chi(12) = 18.93; p = 0.090$). This result showed that the proposed measurement model was invariant across the two groups, indicating that the two groups did not perceive measurement items differently. Additionally, the measurement model also indicated appropriate goodness-of-fit indices.

Table 3. Results of measurement invariance.

Model	χ^2	df	χ^2/df	RMSEA	CFI	TLI	IFI
Non-restricted model	484.09	218	2.22	0.050	0.95	0.94	0.95
Full-metric invariance of CFA model	503.02	230	2.19	0.049	95	0.94	0.95

Chi-square difference test $\Delta\chi(12) = 18.93, p = 0.090$ (insignificant), thus full metric invariance is supported.

The structural invariance test was tested to identify whether the proposed structural model was significantly different between the two groups as a second step. Subsequently, a baseline model was constructed to test the proposed relationships among the constructs. The comparison between the baseline model (freely estimated) and the nested model (fully constrained) showed a significant difference ($\Delta\chi(16) = 39.76; p < 0.05$). Therefore, it revealed that the HSR and LSR groups perceived the hypothesized paths differently, supporting the moderating effect of social rewards. The structural model also met the criteria for a good fit with the data (Table 4).

Table 4. Structural invariance model assessment.

Model	χ^2	df	χ^2/df	RMSEA	CFI	TLI	IFI
Baseline Model (freely estimated)	581.10	228	2.549	0.056	0.938	0.925	0.938
Nested Model (fully constrained)	620.86	244	2.544	0.056	0.933	0.926	0.934
Chi-square difference test $\Delta\chi(16) = 39.76$ (significant), thus paths across two groups are different.							
Hypothesized Paths	High Social Group		Low Social Group		Baseline Model (Freely Estimated)	Nested Model (Constrained to be Equal)	
	Coefficient	t-value	Coefficient	t-value		$\chi^2(228) = 581.10$	
H _{5a} : SN → CE	0.66 ***	5.06	0.22 **	2.72	$\chi^2(228) = 581.10$	$\chi^2(229) = 586.40$	
H _{5b} : PN → CE	0.03	0.22	0.16 *	1.99		$\chi^2(229) = 582.40$	
H _{5c} : CE → BC	0.67 ***	8.34	0.51 ***	7.81		$\chi^2(229) = 587.57$	
H _{5d} : CE → SB	0.81 ***	8.80	0.58 ***	7.95		$\chi^2(229) = 590.57$	
Chi-square difference test				Test results			
H _{5a} : $\Delta\chi^2(1) = 5.37, p < 0.05$				H _{5a} : SN → CE Supported			
H _{5b} : $\Delta\chi^2(1) = 1.30, p = 0.255$				H _{5b} : PN → CE Not Supported			
H _{5c} : $\Delta\chi^2(1) = 6.48, p < 0.05$				H _{5c} : CE → BC Supported			
H _{5d} : $\Delta\chi^2(1) = 9.47, p < 0.05$				H _{5d} : CE → SB Supported			

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Additional tests were conducted to evaluate the influence of social reward on the hypothesized relationship in Hypotheses 5a–d (Table 4). The study compared a baseline model with a series of nested models using the chi-square difference test, with each nested model constraining a particular path between the two groups to be equivalent. This helped to minimize the effect of possible variations across the two groups. In the HSR group, customer engagement was significantly impacted by social norms ($\beta = 0.66; t = 5.06; p < 0.001$). Similarly, the relationship in the LSR group was statistically significant with a p -value of 0.01 ($\beta = 0.22; t = 2.72$). However, the impact was significantly greater in the HSR group than in the LSR group, hence supporting H5a ($\Delta\chi(1) = 5.37; p < 0.05$). In testing H5b, the relationship between personal norms and customer engagement was found to be statistically insignificant for the HSR group ($\beta = 0.03; t = 0.22; p < 0.001$) while it was significant for LSR group ($\beta = 0.16; t = 1.99; p < 0.05$); however, the difference in the effect

between the two groups was not statistically significant ($\Delta\chi(1) = 1.30; p = 0.255$). For H5c, both groups showed a significant effect of CE on brand commitment (HSR: $\beta = 0.67; t = 8.34; p < 0.001$; LSR: $\beta = 0.51; t = 7.81; p < 0.001$), while indicating a significant difference across the two groups ($p < 0.05$). In terms of H5d, customer engagement had a statistically significant impact on sustainable behavior in both groups (HSR: $\beta = 0.81; t = 8.80; p < 0.001$; LSR: $\beta = 0.58; t = 7.95; p < 0.001$). However, the HSR impact was significantly greater than the LSR effect, indicating a group difference ($\Delta\chi(1) = 9.47; p < 0.05$).

5. Discussion and Conclusions

To arrive at a clearer understanding of environmentally sustainable behaviors, researchers have often called for a model involving a combination of personal and social norms [6,16]. The purpose of this study was to broaden existing knowledge by exploring the effect of social and personal norm constructs which are crucial for a better understanding of customer sustainable behavior in social media.

The findings showed that social norms had a positive impact on customer engagement within a social media community. The strong effect of social norms demonstrates that individuals with strong social norms become highly engaged in social media communities that support environmental sustainability. This role of social norms is consistent with previous environmental studies [8,9,30,52]. Fielding et al. (2008) [52] identified the role of social norms as a significant predictor of individuals' attitudes toward environmental actions and indicated that individuals with a higher sense of social pressure associated with environmental problems had greater intentions to take pro-environmental actions. Consistent with their findings, Moon (2021) [30] confirmed that restaurant customers were concerned about the opinions of their close friends or relatives when making decisions about patronizing an environmentally friendly restaurant.

However, unlike our expectations, personal norms were not closely associated with customer engagement with social media communities supporting environmental sustainability. This result is not in line with other studies [6–8,53], which supported its positive and direct influence on individuals' prosocial and pro-environmental behavior. According to Han and Hyun (2018) [7], the moral or personal norm was considered to be the most crucial variable influencing hotel guests' environmental behavior such as water conservation or intention to reuse towels. In the restaurant context, Shin et al. (2018) [8] noted that personal norms were an important determinant of customer intention to choose organic menu items, influencing their intentions to dine in environmentally friendly restaurants. This inconsistent finding might be related to the context, which is social media, where personal norms may not be a critical factor in inducing participative behavior in environmental issues. The effect of social norms over personal norms is a noteworthy phenomenon, particularly in the context of community members on social media. This is because individuals on social media are prone to social influences, which can increase the likelihood of adopting the behaviors of other community members. The decision to join a community, for example, may be influenced by the behavior of one's friends. This may explain why the social norms identified in this study hold greater explanatory power than personal norms in the context of online behavior.

The significant impact of customer engagement on both brand commitment and sustainable behavior highlights the importance of customer engagement in social media communities. The result supports earlier research that reflected the significance of engagement in enabling committed behavior to the brand [28,37,54]. The role of customer engagement is emphasized in the study of Touni et al. (2019) [54], which indicated that customers' active participation in social media-based brand communities could accelerate emotional attachment to the hotel brand and enhance brand relationship quality. Kang et al. (2014) [28] also contended that members' psychological attachment through their active participation in social media produced a strong and enduring commitment to restaurant brands.

The testing of moderation effects indicated that the effect of social norms can be reinforced through greater levels of social rewards, which is in line with the findings of several prior studies [17,18]. Social rewards, as socially oriented motivators, were powerful in encouraging customers to follow and act in socially desirable ways in public situations [17]. In food service domains, customers with a high need for status or social recognition displayed favorable attitudes toward positive cues (e.g., health cues of a menu item) while recognizing that their responsiveness to such cues was indicative of their high social status [44]. However, the study did not find any differences between the two groups regarding the impact of social rewards on the relationship between personal norms and customer engagement.

5.1. Theoretical and Practical Implications

The academic originality of this study is in understanding restaurant customers' environmentally sustainable behavior in social media communities by applying both personal and social norms. This study also contributes to the literature by highlighting the moderating role of social rewards in reinforcing the effects of social norms in social media communities.

While both personal and social norms have been considered significant indicators of individuals' environmentally sustainable behaviors in prior environmental studies, unlike the significant influence of social norms, the effect of personal norms was not supported in our study. Given that personal norms have been recognized to be a stronger predictor of environmental behavior in psychology studies [6], this study exemplified the need for the test of the precise role of personal norms in understanding customer sustainable behavior in a social media context. Moderating or mediating variables to activate sustainability-related personal norms should likewise be further investigated. To our knowledge, this study is the first to integrate personal and social norms into a sustainable behavior model in the social media context. For this reason, it paves the way for future studies.

In terms of practical implications, restaurant operators and marketers should identify customers whose social norms are related to sustainability and then find ways for those norms to be displayed as engagement activities in social media. Effective communication strategies could be designed to elicit engagement behavior among social media members. For example, delivering a normative message would be more likely to result in actual pro-environmental behavior while reminding customers of the value of their sustainable behavior and also while highlighting other members' proactive sustainable behavior [55,56]. A strategy for public recognition could also reinforce customers' inclination to conform to social norms and thereby strengthen their engagement behavior and display their changed behavior.

5.2. Limitations and Future Research

Due to sampling drawn from panel members retained by an online platform, these findings should be interpreted with caution. Future studies of other cultures or with different samples will add more critical information about the precise role of personal norms in comprehending sustainable behaviors in the social media context. This study was also conducted with samples who showed a wide range of participation in social media communities. Future studies may need to select participants based on the extent of their participation; this will elicit more meaningful insights into the sustainable behavior of members of social media communities.

Author Contributions: Conceptualization, Y.-J.J.; methodology, E.K.; formal analysis, E.K.; data collection, Y.-J.J. and E.K.; writing—original draft preparation, Y.-J.J. and E.K.; writing—review and editing, Y.-J.J. and E.K.; supervision and project administration, Y.-J.J. and E.K. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Review Board of Virginia Tech (19-618).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to ethical.

Conflicts of Interest: The authors declare no conflict of interest.

References

- Jang, Y.J.; Zheng, T.; Bosselman, R.H. Top managers' environmental values, leadership, and stakeholder engagement in promoting environmental sustainability in the restaurant industry. *Int. J. Hosp. Manag.* **2017**, *63*, 101–111. [CrossRef]
- Jang, Y.J.; Kim, W.G.; Lee, H.Y. Coffee shop consumers' emotional attachment and loyalty to green stores: The moderating role of green consciousness. *Int. J. Hosp. Manag.* **2015**, *44*, 146–156. [CrossRef]
- National Restaurant Association. The State of Restaurant Sustainability. Available online: <https://restaurant.org/research/reports/state-of-restaurant-sustainability> (accessed on 17 June 2022).
- Conner, M.; Armitage, C.J. Extending the theory of planned behavior: A review and avenues for further research. *J. Appl. Soc. Psychol.* **2006**, *28*, 1429–1464. [CrossRef]
- Ajzen, I. The theory of planned behavior. *Organ. Behav. Hum. Decis. Process.* **1991**, *50*, 179–211. [CrossRef]
- Doran, R.; Larsen, S. The relative importance of social and personal norms in explaining intentions to choose eco-friendly travel options. *Int. J. Tour. Res.* **2016**, *18*, 159–166. [CrossRef]
- Han, H.; Hyun, S. What influences water conservation and towel reuse practices of hotel guests? *Tour. Manag.* **2018**, *64*, 87–97. [CrossRef]
- Shin, Y.H.; Im, J.; Jung, S.E.; Severt, K. The theory of planned behavior and the norm activation model approach to consumer behavior regarding organic menus. *Int. J. Hosp. Manag.* **2018**, *69*, 21–29. [CrossRef]
- Teng, Y.; Wu, K.; Liu, H. Integrating altruism and the theory of planned behavior to predict patronage intention of a green hotel. *J. Hosp. Tour. Res.* **2015**, *39*, 299–315. [CrossRef]
- Kallgren, C.A.; Reno, R.R.; Cialdini, R.B. A focus theory of normative conduct: When norms do and do not affect behavior. *Personal. Soc. Psychol. Bull.* **2000**, *26*, 1002–1012. [CrossRef]
- Schwartz, S.H. Normative influences on Altruism. *Adv. Exp. Soc. Psychol.* **1977**, *10*, 221–279.
- Lindenberg, S.; Steg, L. Normative, gain and hedonic goal frames guiding environmental behavior. *J. Soc. Issues* **2007**, *63*, 117–137. [CrossRef]
- Nordlund, A.M.; Garvill, J. Effects of Values, Problem Awareness, and Personal Norm on Willingness to Reduce Personal Car Use. *J. Environ. Psychol.* **2003**, *23*, 339–347. [CrossRef]
- Stern, P.C. New environmental theories: Toward a coherent theory of environmentally significant behavior. *J. Soc. Issues* **2000**, *56*, 407–424. [CrossRef]
- Han, H.; Hwang, J.; Kim, J.; Jung, H. Guests' pro-environmental decision-making process: Broadening the norm activation framework in a lodging context. *Int. J. Hosp. Manag.* **2015**, *47*, 96–107. [CrossRef]
- Kim, S.H.; Seock, Y.K. The roles of values and social norm on personal norms and pro-environmentally friendly apparel product purchasing behavior: The mediating role of personal norms. *J. Retail. Consum. Serv.* **2019**, *51*, 83–90. [CrossRef]
- Choi, J.; Seo, S. Goodwill intended for whom? Examining factors influencing conspicuous prosocial behavior on social media. *Int. J. Hosp. Manag.* **2017**, *60*, 23–32. [CrossRef]
- Jang, Y.J.; Kim, E. How self-identity and social identity grow environmentally sustainable restaurants' brand communities via social rewards. *J. Hosp. Tour. Res.* **2022**. [CrossRef]
- Tajfel, H.; Turner, J.C. An Integrative Theory of Intergroup Conflict. In *The Social Psychology of Intergroup Relations*; Austin, W.G., Worchel, S., Eds.; Brooks/Cole: Monterey, CA, USA, 1979; pp. 33–47.
- Sigala, M. Customer involvement in sustainable supply chain management: A research framework and implications in tourism. *Cornell Hosp. Q.* **2014**, *55*, 76–88. [CrossRef]
- Gruss, R.; Kim, E.; Abrahams, A. Engaging restaurant customers on Facebook: The power of belongingness appeals on social media. *J. Hosp. Tour. Res.* **2020**, *44*, 201–228. [CrossRef]
- Hollebeek, L.D.; Glynn, M.S.; Brodie, R.J. Consumer brand engagement in social media: Conceptualization, scale development and validation. *J. Interact. Mark.* **2014**, *28*, 149–165. [CrossRef]
- So, K.K.F.; Li, X.; Kim, H. A decade of customer engagement research in hospitality and tourism: A systematic review and research agenda. *J. Hosp. Tour. Res.* **2020**, *44*, 178–200. [CrossRef]
- Kang, J.W.; Lee, H.; Namkung, Y. The impact of restaurant patrons' flow experience on SNS satisfaction and offline purchase intentions. *Int. J. Contemp. Hosp. Manag.* **2018**, *30*, 797–816. [CrossRef]
- Kim, B.; Yoo, M.; Yang, W. Online Engagement Among Restaurant Customers: The Importance of Enhancing Flow for Social Media Users. *J. Hosp. Tour. Res.* **2020**, *44*, 252–277. [CrossRef]

26. Gruen, T.W.; Summers, J.O.; Acito, F. Relationship marketing activities, commitment, and membership behaviors in professional associations. *J. Mark.* **2000**, *64*, 34–49. [[CrossRef](#)]
27. Hajli, N.; Shanmugam, M.; Papagiannidis, S.; Zahay, D.; Richard, M.O. Branding co-creation with members of online brand communities. *J. Bus. Res.* **2017**, *70*, 136–144. [[CrossRef](#)]
28. Kang, J.; Tang, L.; Fiore, A.M. Enhancing consumer–brand relationships on restaurant Facebook fan pages: Maximizing consumer benefits and increasing active participation. *Int. J. Hosp. Manag.* **2014**, *36*, 145–155. [[CrossRef](#)]
29. Kaur, P.; Dhir, A.; Rajala, R. Assessing flow experience in social networking site based brand communities. *Comput. Hum. Behavior.* **2016**, *64*, 217–225. [[CrossRef](#)]
30. Moon, S. Investigating beliefs, attitudes, and intentions regarding green restaurant patronage: An application of the extended theory of planned behavior with moderating effects of gender and age. *Int. J. Hosp. Manag.* **2021**, *92*, 102727. [[CrossRef](#)]
31. Stern, P.C.; Dietz, T.; Abel, T.; Guagnano, G.A.; Kalof, L. A value-belief-norm theory of support for social movements: The case of environmentalism. *Res. Hum. Ecol.* **1999**, *6*, 81–97.
32. Klockner, C.A. A comprehensive model of the psychology of environmental behavior—A meta-analysis. *Glob. Environ. Change* **2013**, *23*, 1028–1038. [[CrossRef](#)]
33. Shi, H.; Fan, J.; Zhao, D. Predicting household PM2.5-reduction behavior in Chinese urban areas: An integrative model of theory of planned behavior and norm activation theory. *J. Clean. Prod.* **2017**, *145*, 64–73. [[CrossRef](#)]
34. Han, H. Travelers’ pro-environmental behavior in a green lodging context: Converging value-belief-norm theory and the theory of planned behavior. *Tour. Manag.* **2015**, *47*, 164–177. [[CrossRef](#)]
35. Wynveen, C.J.; Sutton, S.G. Engaging the public in climate change-related pro-environmental behaviors to protect coral reefs: The role of public trust in the management agency. *Mar. Policy* **2015**, *53*, 131–140. [[CrossRef](#)]
36. Hwang, C.G.; Lee, Y.A.; Diddi, S. Generation Y’s moral obligation and purchase intentions for organic, fair-trade, and recycled apparel products. *Int. J. Fash. Des. Technol. Educ.* **2015**, *8*, 97–107. [[CrossRef](#)]
37. Li, M.-W.; Teng, H.-Y.; Chen, C.-Y. Unlocking the customer engagement-brand loyalty relationship in tourism social media: The roles of brand attachment and customer trust. *J. Hosp. Tour. Manag.* **2020**, *44*, 184–192. [[CrossRef](#)]
38. Sung, K.; Tao, C.; Slevitch, L. Restaurant chain’s corporate social responsibility messages on social networking sites: The role of social distance. *Int. J. Hosp. Manag.* **2020**, *85*, 102429. [[CrossRef](#)]
39. Tussyadiah, S.P.; Kausar, D.R.; Soesilo, P.K. The effect of engagement in online social network on susceptibility to influence. *J. Hosp. Tour. Res.* **2018**, *42*, 201–223. [[CrossRef](#)]
40. Trudel, R. Sustainable consumer behavior. *Consum. Psychol. Rev.* **2018**, *2*, 85–96. [[CrossRef](#)]
41. Veblen, T. *The Theory of the Leisure Class*; Penguin: New York, NY, USA, 1899.
42. Milinski, M.; Semmann, D.; Krambeck, H.; Marotzke, J. Stabilizing the Earth’s climate is not a losing game: Supporting evidence from public goods experiments. *Proc. Natl. Acad. Sci. USA* **2006**, *103*, 3994–3998. [[CrossRef](#)]
43. Zhang, L.; Yang, W.; Zheng, X. Corporate social responsibility: The effect of need for status and fluency on consumers’ attitudes. *Int. J. Contemp. Hosp. Manag.* **2018**, *30*, 1492–1507. [[CrossRef](#)]
44. Shin, J.; Mattila, A.S. In search of diners responsive to health cues: Insights from US consumers. *Int. J. Hosp. Manag.* **2019**, *82*, 260–269. [[CrossRef](#)]
45. Podsakoff, P.M.; MacKenzie, S.B.; Lee, J.Y.; Podsakoff, N.P. Common method biases in behavioral research: A critical review of the literature and recommended remedies. *J. Appl. Psychol.* **2003**, *88*, 879–903. [[CrossRef](#)] [[PubMed](#)]
46. Qu, H.; Lee, H. Travelers’ social identification and membership behaviors in online travel community. *Tour. Manag.* **2011**, *32*, 1262–1270. [[CrossRef](#)]
47. Lee, J.S.; Tsang, N.; Pan, S. Examining the differential effects of social and economic rewards in a hotel loyalty program. *Int. J. Hosp. Manag.* **2015**, *49*, 17–27. [[CrossRef](#)]
48. Anderson, J.C.; Gerbing, D.W. Structural equation modeling in practice: A review and recommended two-step approach. *Psychol. Bull.* **1988**, *103*, 411. [[CrossRef](#)]
49. Nunnally, J.C. *Psychometric Theory*; McGraw-Hill: New York, NY, USA, 1978.
50. Fornell, C.; Larcker, D.F. Evaluating structural equation models with unobservable variables and measurement error. *J. Mark. Res.* **1981**, *18*, 39–50. [[CrossRef](#)]
51. Bagozzi, R.P.; Yi, Y. On the evaluation of structural equation models. *J. Acad. Mark. Sci.* **1988**, *16*, 74–94. [[CrossRef](#)]
52. Fielding, K.S.; McDonald, R.; Louis, W.R. Theory of planned behaviour, identity and intentions to engage in environmental activism. *J. Environ. Psychol.* **2008**, *28*, 318–326. [[CrossRef](#)]
53. Han, H.; Hwang, J. Norm-based loyalty model (NLM): Investigating delegates’ loyalty formation for environmentally responsible conventions. *Int. J. Hosp. Manag.* **2015**, *46*, 1–14. [[CrossRef](#)]
54. Touni, R.; Kim, W.G.; Choi, H.; Ali, M.A. Antecedents and an outcome of customer engagement with hotel brand community on facebook. *J. Hosp. Tour. Res.* **2019**, *44*, 278–299. [[CrossRef](#)]

55. Goldstein, N.J.; Cialdini, R.B.; Griskevicius, V. A room with a viewpoint: Using social norms to motivate environmental conservation in Hotels. *J. Consum. Res.* **2008**, *35*, 472–482. [[CrossRef](#)]
56. Terrier, L.; Marfaing, B. Using social norms and commitment to promote pro-environmental behavior among hotel guests. *J. Environ. Psychol.* **2015**, *44*, 10–15. [[CrossRef](#)]

Disclaimer/Publisher’s Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.