The perception of ESG management and its Relationship with Customer Satisfaction & Loyalty in green consumerism

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Abstract

The rampant consumption prevalent in contemporary society has resulted in significant environmental problems such as global warming and pollution. As a result, there's a growing shift towards green consumerism, where people prefer environmentally-friendly products. This study examines how perceptions of Environmental, Social, and Governance (ESG) management influence customer satisfaction and loyalty toward carbon-neutral packaging. Using surveys and regression analysis, we found that environmental and social concerns significantly enhance customer satisfaction and loyalty. Interestingly, while company transparency boosts satisfaction, it has a lesser impact on loyalty. Our findings suggest that businesses should prioritize environmental and social initiatives to meet consumer expectations and foster loyalty. Integrating social engagement with environmental efforts and using storytelling in marketing can further enhance these outcomes. This research contributes to a deeper understanding of how ESG factors drive consumer behavior, offering practical insights for companies aiming to succeed in the sustainable packaging market Furthermore, fostering collaboration between companies and consumers can lead to innovative solutions in sustainable packaging, while leveraging digital innovation can enhance transparency and engagement, ultimately driving more effective ESG initiatives.

Keywords: Green Consumerism, Carbon-Neutral Packaging, Customer Satisfaction, Customer Loyalty, ESG Management

1. Introduction

The world's unreasonable utilization levels are leading to serious natural issues like an unnatural weather change, contamination of water, air, and land and producing a ton of waste. This has incited society to change how they purchase things, moving towards all the more harmless to the ecosystem choices. This shift has led to what we call "green customer conduct," which has turned into a significant area of study for advertisers and specialists (Ottman, 1998; Sanction et al., 2002; Peattie and Belz, 2010; Lai and Cheng, 2016). While many examinations in created nations center around this way of behaving (Ottman, 1998; Kalafatis et al., 1999; Peattie and Contract, 2003; Zhao et al., 2014; Yadav and Pathak, 2016), there's not as much exploration in agricultural Asian nations like India and China (Chan, 2001; Mostafa, 2006; Chen and Chai, 2010; Yadav and Pathak, 2016; Kumar et al., 2017).

In recent years, there has been a noticeable shift in global conversations towards environmental responsibility. People are increasingly recognizing the impact of their actions on the planet and the urgency to address environmental challenges. One significant area of focus is packaging—the materials used to contain products. With mounting concerns about climate change, companies are actively seeking ways to minimize the environmental footprint of packaging. One approach gaining momentum is the adoption of carbon-neutral packaging products, designed to reduce carbon emissions associated with their production and disposal.

However, the success of these eco-friendly packaging solutions hinges not only on technological advancements but also on consumer attitudes and behaviors. People's perceptions of the environment, society, and corporate transparency play a pivotal role in shaping their decisions regarding the adoption of carbon-neutral packaging. This research endeavors to explore the intricate relationship between these consumer perception and their satisfaction and the loyalty towards carbon-neutral packaging.

By employing a comprehensive methodology combining surveys and regression analysis, this study aims to unravel the underlying drivers behind consumers' choices. Through surveys, participants will be invited to express their environmental, social, and transparency concerns, as well as their usage

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habits concerning carbon-neutral packaging. By leveraging statistical techniques, such as regression analysis, we seek to elucidate the extent to which these concerns influence consumers' after purchase behavior.

A central focus of this inquiry is to ascertain the impact of consumer satisfaction and loyalty towards carbon-neutral packaging. We hypothesize that consumers' satisfaction with the usage of these products is intricately linked to their consumption behavior. Furthermore, we anticipate that satisfied consumers are more likely to exhibit repeat purchase behavior and brand loyalty over time.

By synthesizing these findings, this study aims to provide actionable insights for businesses navigating the landscape of sustainable packaging. Understanding the interplay between consumer concerns, consumption behavior, and satisfaction is paramount for companies seeking to resonate with environmentally-conscious consumers. By aligning product offerings with consumer values and preferences, businesses can not only foster satisfaction and loyalty but also contribute to the broader goal of environmental sustainability.

2. Literature Review

2.1 Environment Concern

In examinations about how individuals act towards the climate, natural concern implies how much people care about environmental issues (Hines et al., 1987). It's no joking matter in green showcasing research since it predicts assuming somebody will act in eco-accommodating ways. Ecological concern shows how mindful individuals are of natural issues and that they are so prepared to assist with fixing them (Van Liere and Dunlap, 1981; Roberts and Bacon, 1997; Straughan and Roberts, 1999; Kim and Choi, 2005; Prakash and Pathak 2017). It additionally shows their awareness of others' expectations to safeguard the climate, which can incorporate feelings like mindful and feeling answerable for making a move (Lee, 2008; Dagher and Itani, 2014; Prakash and Pathak, 2017).

At the point when we discuss ecological concern, we're taking a gander at how people need to tackle natural issues, not really how gatherings or social orders all in all make it happen. This can go from basic things like reusing to greater activities like purchasing eco-accommodating items (Kim and Choi 2005; Zhao et al., 2014; Ottman, 1993; Straughan and Roberts, 1999; Chen, 2001; Mostafa, 2006; Paul et al. 2016; Prakash and Pathak, 2017). Fundamentally, it's about how people think and act in regard to ecological issues, not what society all in all does (Kim and Choi, 2005).

Researchers have found that ecological concern immensely affects how individuals feel about green items. Individuals who care very much about the climate will more often than not have inspirational perspectives towards eco-friendly items (Mostafa, 2007). Furthermore, when individuals have an inspirational perspective towards these items, they're bound to need to get them (Yadav and Pathak, 2016; Paul et al., 2016). Thus, high natural concern prompts loving green items and buying them, which then prompts their fulfillment and keep them faithful to the item. Based on this, our study proposes the following hypothesis:

H1: Environmental concern has a positive impact on carbon-neutral packaging product's satisfaction.

H2: Environmental concern has a positive impact on carbon-neutral packaging product's loyalty.

2.2 Social Concern

Social concern refers to how much individuals care about societal issues and the well-being of others including their communities and broader society. When it comes to environmental sustainability, social concern plays a crucial role in influencing consumer behavior towards carbon-neutral packaging products.

Past studies have featured the significance of social worry in molding purchaser mentalities and ways of behaving towards harmless to the ecosystem items. Analysts have observed that people who are socially concerned will quite often focus on items and practices that emphatically affect society and the climate (Rana and Paul, 2017; Prakash and Pathak, 2017). This implies that shoppers who care about friendly issues are bound to show interest in and support items like carbon-neutral packaging, which plan to diminish natural damage and advance manageability.

In addition, social concern can straightforwardly affect purchaser real utilization of carbon-nonpartisan packaging. People who are socially cognizant are bound to settle on buying choices that line up with their qualities and convictions (Mostafa, 2007). This implies that shoppers who are worried about friendly issues are more disposed to pick carbon-neutral packaging over conventional packaging choices, as they see them to be all the more socially capable and harmless to the environment.

Ultimately, consumer actual consumption of carbon-neutral packaging products is closely linked to their level of satisfaction. Studies have shown that consumers who choose eco-friendly products often experience a sense of fulfillment and well-being,

knowing that their actions contribute to positive environmental outcomes (Yadav and Pathak, 2016). Therefore, as consumers become more socially concerned and actively engage in the consumption of carbon-neutral packaging, their satisfaction levels are likely to increase.

Research has previously settled that shopper social concern altogether impacts the reception and utilization of carbon-neutral packaging items. As individuals become more aware of social and natural issues, they are progressively disposed to help reasonable practices and items. Consequently, this increased mindfulness prompts more noteworthy degrees of purchaser fulfillment and dependability as people adjust their buying choices to their qualities and add to positive cultural and natural results. Building on this foundation, our study proposes the following hypotheses:

H3: Consumer social concern has a positive impact on their satisfaction with carbon-neutral packaging.

H4: Consumer social concern has a positive impact on their loyalty to carbon-neutral packaging.

2.3 Company Transparency Concern

Company transparency concern refers to individuals' awareness and interest in how companies operate and communicate information, both internally within the organization and externally with the public. This includes how transparent companies are about their practices, policies, and environmental initiatives related to carbon-neutral packaging products.

Scholars have emphasized the importance of company transparency in influencing consumer perceptions and behaviors. Internal transparency relates to how openly companies communicate with their employees about their sustainability efforts and environmental practices (Prakash and Pathak, 2017). External transparency, on the other hand, pertains to how transparent companies are in disclosing information to consumers and the public about their environmental commitments and actions (Mostafa, 2007).

Research indicates that consumers place high importance on transparency from businesses, particularly concerning environmental sustainability endeavors. When companies openly communicate their actions to diminish their environmental impact and endorse sustainable practices, consumers tend to trust and endorse them (Mostafa, 2007; Prakash and Pathak, 2017). This trust in transparent companies can have a positive impact on consumer perceptions and intentions toward their offerings, such as carbon-neutral packaging options.

Consumer concern about company transparency can have a direct impact on consumer behavior of green packaging. When consumers perceive companies to be transparent about their environmental practices and commitments, they are more likely to feel confident and comfortable purchasing carbon-neutral packaging products from these companies (Mostafa, 2007; Prakash and Pathak, 2017). On the other hand, lack of transparency may lead to skepticism and reluctance among consumers to engage with products from companies perceived as less transparent.

Consumer purchase experience of carbon-neutral packaging is closely tied to their level of satisfaction and loyalty with the company's transparency practices. Studies have found that consumers who perceive companies to be transparent and trustworthy in their sustainability efforts are more satisfied with their purchases and keep them loyal to the brand, and feel good about supporting environmentally responsible companies (Mostafa, 2007; Prakash and Pathak, 2017). This satisfaction stems from the alignment of consumer values with the company's transparency and sustainability initiatives, reinforcing positive consumer-company relationships.

Additionally, consumer concern about company transparency, both internally and externally, significantly influences consumer attitudes and behaviors towards carbon-neutral packaging. Transparent companies that openly communicate their environmental efforts are more likely to gain consumer trust and support, leading to increased consumption, satisfaction, and loyalty with eco-friendly packaging options. Based on these observations, the following hypothesis is proposed.

H5: Company’s transparency concern of a consumer has a positive impact on carbon neutral packaging satisfaction.

H6: Company’s transparency concern of a consumer has a positive impact on carbon neutral packaging loyalty.

2.4 Consumer satisfaction, and Consumer Loyalty

Consumer satisfaction alludes to how satisfied a client is with their general experience utilizing an item or administration. It resembles a rundown of whether the item or administration measured up to their assumptions and requirements. At the point when clients are fulfilled, they're bound to purchase once more and spread positive verbal exchange about their experience (Anderson et al., 2004; Fornell et al., 1996; Oliver, 1980, 1981, and 1993). This fulfillment likewise assumes a major part in keeping clients

faithful to a brand or organization. Client steadfastness happens when clients reliably decide to buy from similar organization or brand after some time, in any event, when different choices are free. Faithfulness is based on trust and fulfillment with the item or administration. For instance, assuming somebody generally purchases a specific brand of shoes and prescribes them to companions that is unwaveringness (Javalgi and Moberg, 1997; Oliver, 1997).

Previous research exhibits serious areas of strength between consumer loyalty and satisfaction. At the point when clients are happy with an item or administration, they're bound to stay faithful and keep purchasing from a similar brand. This loyalty brings about recurrent buys, positive verbal, and decreased interest in different brands (Zeithaml et al., 1996; Fitzell, 1998; Reynolds and Beatty, 1999; Reynolds and Arnold, 2000; Consumes and Neisner, 2006; He and Melody, 2008; Chang and Fong, 2010; Mensah, 2010; Tee et al., 2012; Norazah, 2013a). In regard to natural manageability, consumer loyalty likewise assumes a basic part. At the point when clients feel better about utilizing eco-friendly items and accept they're contributing emphatically to the climate, they're bound to be happy with their buys. This satisfaction with green item utilization can reinforce their loyalty to the brand or organization (Chen and Chang, 2012; Norazah, 2013a). Organizations perceive the significance of keeping their clients satisfied and loyal in light of the fact that it's more practical to hold existing clients than to get new ones (Athanasopoulou, 2009).

We viewed that as, consumer loyalty and reliability are firmly associated. Fulfilled clients are bound to remain faithful to a brand or organization, prompting rehash buys and positive suggestions. This association has been demonstrated by various examinations in different settings, including environmental sustainability. So we hypothesize as follows,

H7: Consumer satisfaction has a positive impact of consumer loyalty.

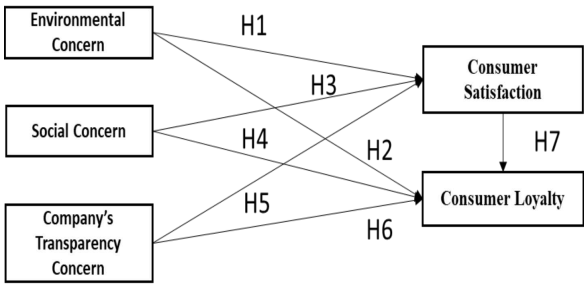

FIGURE 1 < > Research Framework

3. Research Methodology

Basic research aims to create broad knowledge and develop theories, whereas applied research uses this knowledge and these theories to address specific problems in particular areas (Mahabat Baimyrzaeva, 2018). This study seeks to understand what influences consumer behavior towards carbon-neutral packaging, focusing on how consumers view ESG (Environmental, Social, and Governance) or corporate sustainability practices. To achieve this, we used a survey-based study design to collect data from participants.

The participants are the full-time undergraduate studer[illegible]osen univer[illegible]osen based on its location, accessibility, and diverse student population. The questionnaire was distributed both online and physically to the participants, and it contains closed and open-ended questions that focus on the research variables. Despite distributing 300 questionnaires, the data are gathered from 210 participants, ensuring a diverse sample. Prior to the main survey, a pretest was conducted to refine the questionnaire. To ensure the validity and reliability, identifying and rectifying any ambiguities or errors of the questionnaire, a pretest was conducted with a small sample of participants who are not part of the main study. The substantial return rate is 70%. The study framework is exhibited as follows.

The collected data were analyzed using SPSS software. Regression analysis is the main statistical method used to examine the hypothesized relationships between independent variables (like environmental concern, social concern, and transparency concern) and dependent variables (such as satisfaction, retention, and customer loyalty). Descriptive statistics is described the sample and variables, while correlation analysis looks at the relationships between two variables.

All factors are estimated utilizing multi-points Liker-type scales. A 5-point Likert scale, going from "strongly agree" to " strongly disagree," are utilized. The scales for the review are as per the following: Environmental concern is surveyed utilizing Ellen's, Schlegelmilch, Bohlen, and Diamantopoulos' (1994, 1996) 5-points scale. Social concern is estimated utilizing Thøgersen's (2006) 5-points scale. Satisfaction and loyalty, used to assess customer maintenance, likewise be estimated with Slopes and Argyle's (2002) 5-point scale.

4. Sample profile

In view of the 300 substantial surveys from our example, the foundation measurements of the review members are as per the following. Among the respondents, 58.1% are male and 41.9% are female. The example profile shows that 44.8% are matured somewhere in the range of 21 and 30 years of age, and 64% have a Graduate degree or higher. Moreover 61.4% of members revealed making buys or visiting the shop not exactly one time per week. Additionally, 57.1% of members procure under $25,000 every year. Table 1 gives a nitty-gritty breakdown of the participant's profile.

Table 1: Sample Profile

Respondent Profile		Frequency	Percent
Gender	Male	122	58.1
	Female	88	41.9
Age	21-30	94	44.8
	31-40	77	36.7
	41-50	18	8.6
	50 or older	21	10.0
Purchase Frequency	Less than a week	129	61.4
	Twice a week	42	20.0
	Thrice a week	32	15.2
	More than 3 times	6	2.9
Income	Less than $25,000	120	57.1
	$25,000-$49,999	53	25.2
	$50,000-$74,999	17	8.1
	$75,000-$99,999	6	2.9
	$100,000 or more	13	6.2

4.1 Correlation analysis

The correlation analysis reveals significant relationships between environmental concern, social concern, company transparency concern, customer satisfaction, and customer loyalty. The findings indicate strong positive correlations between environmental concern and social concern ($r = 0.694$, $p < 0.01$), environmental concern and company transparency concern ($r = 0.791$, $p < 0.01$), and social concern and company transparency concern ($r = 0.752$, $p < 0.01$). Additionally, there are positive correlations between customer satisfaction and environmental concern ($r = 0.652$, $p < 0.01$), social concern ($r = 0.654$, $p < 0.01$), and company transparency concern ($r = 0.653$, $p < 0.01$). Similarly, customer loyalty exhibits positive correlations with environmental concern ($r = 0.678$, $p < 0.01$), social concern ($r = 0.769$, $p < 0.01$), company transparency concern ($r = 0.693$, $p < 0.01$), and customer satisfaction ($r = 0.661$, $p < 0.01$). These results suggest that consumers who express higher levels of environmental and social concern, perceive greater transparency from companies, and report higher satisfaction tend to exhibit stronger loyalty towards carbon-neutral packaging products. Table 2 shows the result of correlation analysis result.

Table 2: Correlation Matrix

Variables	Environmental Concern	Social Concern	Company Transparency	Customer Satisfaction	Customer Loyalty
Environmental Concern	1	0.694**	0.791**	0.652**	0.678**
Social Concern	0.694**	1	0.752**	0.654**	0.769**
Company Transparency	0.791**	0.752**	1	0.653**	0.693**
Customer Satisfaction	0.652**	0.654**	0.653**	1	0.661**
Customer Loyalty	0.678**	0.769**	0.693**	0.661**	1

4.2 Regression analysis

The multiple regression analysis examined the relationship between Environmental Concern, Social Concern, Company Transparency, Customer Satisfaction, and Customer Loyalty. The model significantly predicted both customer satisfaction ($R = .717$, R-squared = .515, Adjusted R-squared = .508, $p < .001$) and customer loyalty ($R = .661$, R-squared = .437, Adjusted R-squared = .434, $p < .001$). For customer satisfaction, Environmental Concern (Beta = .280, $p = .001$), Social Concern (Beta = .311, $p < .001$), and Company Transparency (Beta = .197, $p = .029$) were significant predictors. Similarly, for customer loyalty, Customer Satisfaction was a significant predictor (Beta = .661, $p < .001$). These findings underscore the importance of environmental and social concerns, as well as company transparency in influencing both customer satisfaction and loyalty. Businesses should prioritize addressing these factors to enhance customer satisfaction and foster loyalty.

Table 3: Hypotheses Result:

Hypotheses	Path	B	t	p-Value	Result
H1	EC-CS	0.28	3.419	0.001	Supported

H2	SC-CS	0.311	4.094	0.000	Supported
H3	CTC-CS	0.197	2.204	0.029	Supported
H4	EC-CL	0.209	2.954	0.003	Supported
H5	SC-CL	0.528	7.932	0.000	Supported
H6	CTC-CL	0.136	1.751	0.081	Rejected
H7	CS-CL	0.661	12.694	0.000	Supported
R^2	0.515				
	0.637				

Table 4: Hierarchical Regression

Models	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
Dependent Variable	Customer Satisfaction	Customer Loyalty	Customer Satisfaction	Customer Loyalty	Customer Satisfaction	Customer Loyalty
R Square (R^2)	0.425	0.46	0.503	0.631	0.515	0.637
R Square Change (ΔR^2)	-	-	0.078	0.171	0.012	0.006
Beta Coefficient (Environmental Concern, b)	0.652**	0.678**	0.383**	0.280**	0.280**	0.209**
Beta Coefficient (Social Concern, b)	-	-	0.388**	0.574**	0.311**	0.521**
Beta Coefficient (Transparency Concern, b)	-	-	-	-	0.197*	0.136*
F Change (ΔF)	153.790**	177.419**	155.231**	300.240**	154.372**	192.472**
β (EC × SC)	0.150**	0.120**	0.110**	0.100**		
β (EC × TC)	-	-	-	-	0.070**	-
β (SC × TC)	-	-	-	-	-	0.070**

β: Beta Coefficient
ΔR^2: Change in R Square; ΔF: Change in F Statistic
**p < 0.005, * p < 0.05
CS= Customer Satisfaction; CL= Customer Loyalty, EC=Environmental Concern; SC=Social Concern; TC=Transparency Concern.
Model1: $Y = \beta 0 + \beta X1$
Model 2: $Y = \beta 0 + \beta 1X1 + \beta 2X2$
Model 3: $Y = \beta 0+\beta 1X1+\beta 2X2+\beta 4(X1\times X2)$
Model 4: $Y = \beta 0+\beta 1X1+\beta 2X2+\beta 4(X1\times X2)$
Model 5: $Y = \beta 0+\beta 1X1+\beta 2X2+\beta 3X3+\beta 4(X1\times X2)+\beta 5(X1\times X3)$
Model 6: $Y = \beta 0+\beta 1X1+\beta 2X2+\beta 3X3+\beta 4(X1\times X2)+\beta 6(X2\times X3)$

5. Results

Table 1 shows that most respondents were female (58.1%), with 64.3% holding a master's degree or higher, and 44.8% aged between 21 to 30 years. In terms of purchase frequency, 61.4% of respondents reported making purchases less than once a week. Additionally, 57.1% of participants had an annual income of less than $25,000. Table 2 reveals significant positive relationships between Environmental Concern, Social Concern, Company Transparency, Customer Satisfaction, and Customer Loyalty, with moderate to strong positive correlations ranging from 0.652 to 0.791 ($p < 0.01$).

The indicators, including Environmental Concern, Social Concern, and Company Transparency, fundamentally anticipated Customer Satisfaction ($R^2 = 0.515$, $p < 0.001$), making sense of 51.5% of the change. Essentially, the model foreseeing Customer Loyalty was huge ($R^2 = 0.637$, $p < 0.001$), with Consumer loyalty as the indicator. ANOVA tests in affirmed the meaning of the relapse models for both Consumer loyalty ($F = 72.802$, $p < 0.001$) and Client Dependability ($F = 161.144$, $p < 0.001$), showing that the indicators all in all added to the difference in the reliant factors. Multicollinearity tests uncovered satisfactory degrees of multicollinearity, with all indicator factors having resistances above 0.1 and VIF values under 10.

Support for the hypotheses in table 3 was found in the relapse loads examination, with most estimated connections among indicator and result factors being upheld. Environmental concern (EC) fundamentally anticipated consumer satisfaction (CS) (B = 0.28, p = .001) and customer loyalty (CL) (B = 0.209, p = .003). Social concern (SC) fundamentally anticipated both CS (B = 0.311, p < .001) and CL (B = 0.528, p < .001). Company transparency (CTC) essentially anticipated CS (B = 0.197, p = .029) however not CL (B = 0.136, p = .081). Also, CS fundamentally anticipated CL (B = 0.661, p < .001). The models made sense of 51.5% of the difference in CS (R^2 = .515) and 63.7% of the change in CL (R^2 = .637). These outcomes highlight the significance of environmental and social concerns and transparency in upgrading customer satisfaction and fostering loyalty.

Although, 6 hypotheses among 7 hypotheses are supported with strong value, but, hypothesis number 6 was rejected because, consumer believe company transparency helps build trust and satisfaction, but it doesn't play a major role in driving long-term in-terms of their loyalty. Consumers might appreciate transparency, but their loyalty is more influenced by how much the company actively supports environmental and social causes, which they see as having a bigger impact on the world.

In the last stage we conducted hierarchical regression analysis shown in table 4 to identify which combination of variables best predicts the outcome of interest. In the stepwise multiple regression analysis conducted in SPSS, three models were sequentially developed to predict customer satisfaction and customer loyalty. For customer satisfaction, Model 1 showed that environmental concern significantly predicted satisfaction, explaining 42.5% of the variance. Model 2 indicated that adding social concern increased the predictive power to 50.3%, with both environmental and social concerns significantly contributing. Model 3 further improved prediction to 51.5% by including company transparency, with all three predictors significantly contributing, though transparency marginally. For customer loyalty, Model 4 demonstrated that environmental concern significantly predicted loyalty explaining 46.0% of the variance. Model 5 added social concern, increasing predictive power to 63.1%, with both predictors significantly contributing. Model 6, incorporating company transparency, achieved 63.7% prediction, with environmental and social concerns significant, and transparency marginally so. Overall, environmental and social concerns consistently emerged as strong predictors of both satisfaction and loyalty, with company transparency offering a marginal but incremental predictive value for both outcomes.

6. Discussion and Implications

The findings of this study shed light on the factors influencing customer satisfaction and loyalty towards carbon-neutral packaging products. Environmental and social concerns, along with company transparency, are revealed as significant influencers of consumer perceptions and behaviors.

Through correlation analysis, it was evident that environmental concern, social concern, and company transparency were strongly positively correlated with both customer satisfaction and loyalty. This suggests a close association between these factors in the minds of consumers.

Further analysis via multiple regression showed that environmental concern, social concern, and company transparency collectively explained a substantial portion of the variance in customer satisfaction. Interestingly, while company transparency played a significant role, its impact was comparatively smaller than that of environmental and social concerns.

Regarding customer loyalty, customer satisfaction emerged as a powerful predictor, indicating its pivotal role in fostering loyalty. Social concern was identified as the strongest direct predictor, followed by environmental concern, with company transparency showing a smaller, yet marginally significant, impact. These results emphasize the importance of addressing environmental and social concerns to boost loyalty, with social concern being particularly influential.

Hypotheses testing confirmed the significant predictive roles of environmental concern, social concern, and company transparency in customer satisfaction. Similarly, environmental and social concerns significantly predicted customer loyalty, whereas the impact of company transparency on loyalty was negligible. This underscores the importance of environmental and social issues in driving satisfaction and loyalty, while also suggesting a lesser role for company transparency in fostering loyalty.

Hierarchical regression analysis further clarified the incremental value of adding predictors, highlighting the substantial benefits of integrating social concern into business practices. While environmental concern serves as a foundational factor, integrating social concern offers additional advantages. The marginal improvement brought by company transparency suggests its nuanced impact, dependent on context and communication strategies.

These findings underscore the complexity of consumer decision-making regarding carbon-neutral packaging products. Businesses are encouraged to prioritize environmental and social concerns to enhance customer satisfaction and loyalty. Transparency, while important, has a lesser impact on loyalty but can still contribute to satisfaction and trust-building.

Practically, integrating social engagement initiatives with environmental programs can lead to higher customer satisfaction and loyalty. For example community projects involving local communities in sustainability efforts can strengthen social bonds and support environmental initiatives. Additionally, leveraging storytelling in marketing can make environmental and social efforts more tangible and relatable for consumers. Besides, the understanding

of local consumer behavior in e-commerce or in social media, which aligns with how environmental and social concerns influence customer satisfaction and loyalty towards carbon-neutral packaging is crucial (MS Kabir, Ko, and Mondol, 2023, & MS Kabir, Ko, and Devi, 2023). Additionally, Psychological Perceptions, digital capabilities, ESG management are proved as an important parameter that keep Relationship with Customer Satisfaction & Loyalty in green consumerism (MS Kabir, Ko, , 2024 MS Kabir, and, 2023).

This study emphasizes the critical role of environmental and social concerns in shaping customer satisfaction and loyalty. Theoretical implications include the introduction of the concept of the "combined impact" of environmental and social concerns on satisfaction and loyalty, suggesting a need for further exploration and the development of integrated models. Future research should delve deeper into the nuanced effects of transparency on consumer behavior, considering different contexts and industries. Furthermore, the study also accentuates that, the strategic use of technology like AI or block chain can offers companies a competitive edge in building long-term customer loyalty through trusted sustainability initiatives.

7. Limitations and Future Research

While this study offers significant experiences into the connections between environmental concern, social concern, company transparency, customer satisfaction, and customer loyalty, it has a few constraints that ought to be recognized, alongside possible roads for future examination.

One limit is the dependence on self-revealed information, which can be dependent upon reaction inclinations and social allure impacts. Future examination could utilize more goal measures, as observational information or social markers, to approve the discoveries and give a more far-reaching comprehension of the connections between these factors.

Furthermore, this study zeroed in on a particular segment or geographic locale, which could restrict the generalizability of the discoveries to different populaces or settings. Future exploration could take a diverse or worldwide way to deal with investigate how social contrasts impact customer view of environmental and social responsibility, transparency, satisfaction, and loyalty.

Moreover, the correlational exploration plan of this study blocks laying out causality between the factors. Future exploration could utilize trial or longitudinal plans to examine causal connections and better grasp the transient elements of these factors after some time.

Another limitation is the exclusion of other potentially relevant factors that might influence customer satisfaction and loyalty, such as product quality, price, and brand reputation. Future research could examine the interactive effects of these variables with environmental concern, social concern, and company transparency to provide a more comprehensive understanding of consumer behavior.

Moreover, this study primarily focused on consumer perceptions and behaviors, neglecting the perspectives of other stakeholders, such as employees investors, and communities. Future collaboration in Environmental, Social, and Governance (ESG) management can take various forms, particularly focusing on partnerships between companies and their customers in the realm of carbon-neutral packaging. One potential area for collaboration is the co-creation of sustainable packaging solutions, where companies actively involve consumers in the design and development process. This collaboration not only empowers customers but also ensures that the packaging meets their expectations for environmental and social responsibility. However, challenges may arise, such as differing priorities between companies and consumers, or skepticism regarding corporate motives. To address these issues, companies should prioritize transparency and open communication, actively seeking customer feedback and involving them in decision-making processes related to carbon-neutral packaging. The findings of this research highlight the importance of collaboration in enhancing customer satisfaction and loyalty in green consumerism, suggesting that collaborative efforts in developing eco-friendly packaging can significantly improve these outcomes. Additionally, companies can engage in collaboration with non-profit organizations and community groups to amplify their ESG initiatives, particularly in promoting sustainable packaging practices, thereby creating a more significant impact on social and environmental issues By fostering a sense of shared responsibility and mutual benefit through collaboration, companies can build stronger relationships with their customers, ultimately driving better outcomes for both parties.

At last, while this study enlightens the connections between environmental concern, social concern, company transparency, customer satisfaction and customer loyalty, it isn't without its impediments. Future research could explore how digital innovation like artificial intelligence, block chain, and big data analytics can be utilized to track and report on the

sustainability performance of carbon-neutral packaging more effectively and to cope effectively its impediments. For instance, block chain technology can offer transparent and verifiable information about the lifecycle of sustainable packaging materials, helping consumers make informed choices and fostering trust in the brand. The paper identifies gaps in the current understanding of consumer behavior regarding eco-friendly packaging and the need for objective measures of sustainability performance. Digital tools can help bridge these gaps by providing real-time data and insights into consumer preferences for carbon-neutral packaging, allowing companies to adapt their ESG strategies accordingly. Furthermore, addressing the gap between companies and consumers can be achieved through digital platforms that facilitate communication and engagement around sustainable packaging initiatives. By leveraging social media and digital marketing, companies can create interactive campaigns that encourage customer participation in sustainability efforts related to carbon-neutral packaging. This approach not only enhances customer satisfaction but also strengthens brand loyalty, aligning corporate actions with consumer expectations for environmentally responsible packaging solutions, and address these restrictions and investigate new roads to develop how we might interpret the mind-boggling exchange between corporate responsibility, transparency, and consumer behavior in different settings.

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