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Article

The Impact of Social Media Marketing on Chinese Consumers' Willingness to Pay Green Premiums: The Mediating Effect of Green Marketing

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Abstract: With the proliferation of internet and social media platforms, the exponential growth of users across various social networks has prompted brands to recognize the critical importance of leveraging these platforms for marketing purposes. Concurrently, the philosophy of sustainable development has catalyzed innovations in products, services, and business models. Consequently, consumers' environmental consciousness has intensified, with green products gaining prominence due to their eco-friendly and low-carbon attributes. The influence of social media marketing on consumers' willingness to pay a green premium has thus emerged as a focal point of scholarly inquiry. Empirical findings demonstrate that: First, the entertainment value, precision targeting, and interactivity of social media marketing exert significant positive effects on green marketing, whereas novelty exhibits no statistically meaningful impact. Second, the entertainment value, precision targeting, and novelty of social media marketing significantly enhance consumers' willingness to pay a green premium, while interactivity shows no substantial correlation. Finally, green marketing partially mediates the effects of entertainment value, interactivity, and precision targeting on green premium payment willingness.

Keywords: social media marketing; green premium payment willingness; green marketing

1. Introduction

The advent of social media has unlocked novel possibilities for marketers to forge connections with consumers [1]. As a transformative marketing tool, social media marketing has redefined the paradigm of brand-consumer interactions, revolutionizing how businesses communicate and disseminate brand-related information [2]. Concurrently, it has precipitated the evolution of promotional mix dynamics within marketing communications [3]. While marketing strategies are increasingly shaped by social media, these platforms are simultaneously reshaping consumer communication patterns and exerting profound influences on purchasing behaviors [4]. Consumers engage with social media for multifaceted purposes [5]: some utilize it to seek product-specific information, while others leverage it to compare features, attributes, and pricing across brands [6]. The inherent capacity of social media to enable both access to and generation of user-driven content ensures real-time information dissemination and peer-to-peer visibility [7]. In contrast to the unidirectional communication and exorbitant costs associated with traditional media campaigns (e.g., print and broadcast channels), social media distinguishes itself through bidirectional information exchange and collaborative content sharing [8]. Consequently, an expanding array of brands now strategically harness these platforms for marketing endeavors.

In recent years, rapid economic expansion has precipitated the excessive exploitation and depletion of natural resources, exacerbating global crises such as climate change, environmental degradation, ozone depletion, and other health-compromising ecological challenges [9]. Against this backdrop, green consumption has emerged as a pragmatic imperative to mitigate resource

constraints and environmental pressures, driven by escalating energy consumption and carbon emissions at the consumer level, thereby fostering sustainable socioeconomic development to a certain extent [10]. Governments worldwide have intensified advocacy for green lifestyles, catalyzing a marked elevation in public green consumption awareness. Green products, characterized by their eco-friendliness, energy efficiency, and health benefits, have consequently gained traction among consumers [11]. However, extant research reveals a persistent gap between consumers' professed positive attitudes toward green products and their actual purchasing behaviors [12][13]. When selecting green products, consumers typically undergo a value-based trade-off process, favoring items that deliver superior value propositions. This necessitates corporate emphasis on social responsibility to enhance green product offerings, coupled with consumer education to strengthen green consumption ethics and prioritize eco-conscious purchasing decisions [14]. Green marketing, defined as the promotion of environmentally safe products through strategies that reshape consumer perceptions of brands, has thus gained strategic relevance [15].

2. Literature Review

2.1. Social Media Marketing

The conceptualization of social media marketing was first articulated by Mayfield, who defined social media as an online medium providing platforms for individuals to articulate and share perspectives, experiences, and opinions [16]. Social media marketing has since evolved into a cornerstone for corporate green communication. Through meta-analytic synthesis, Kim et al. (2021) demonstrated that entertainment-oriented content enhances green advertisement recall, a phenomenon neurologically linked to dopamine reward mechanisms in the prefrontal cortex (Chen et al., 2022) [17]. Breakthroughs in precision targeting technologies have overcome traditional mass communication limitations. Leveraging a natural experiment involving 2 million Twitter datapoints, Laroche et al. (2023) validated that location-based service (LBS) targeting tripled conversion rates for green product inquiries [18]. The interactivity dimension exhibits bidirectional empowerment characteristics, with user-generated content (UGC) amplifying green brand trust through social identification mechanisms (Wang & Zhang, 2022) [19].

The precision targeting dimension achieves communication optimization via big data profiling. Laroche et al. (2023), utilizing geo-tagged Twitter data, further demonstrated that LBS-driven campaigns significantly elevate green product consultation conversion rates [18]. Machine learning algorithms have augmented predictive capabilities for user needs; Wang et al. (2022) empirically confirmed that personalized recommendations based on consumption histories boost green product click-through rates by 2.8-fold [19]. Brands increasingly employ tailored social media messaging to engage niche audiences, as precision targeting enables the delivery of hyper-personalized information and products aligned with individual preferences [20], thereby enhancing user experience and platform utility [21]. Operationally, precision targeting quantifies the extent to which services are customized to meet consumer idiosyncrasies [22].

Social media platforms serve as real-time conduits for trending information and topical discourse [23]. By disseminating cutting-edge trend analyses, these platforms effectively capture consumer attention [22]. The novelty dimension of social media marketing empowers marketers to deliver timely insights on emerging trends, creating consumer value through reduced information search costs [24].

The entertainment dimension profoundly influences consumer attitudes via emotional arousal mechanisms. Kim et al. (2021) meta-analytically established that humor-infused green advertisements enhance memory retention [25], a process neurologically mediated by dopamine reward circuit activation in the prefrontal cortex (Chen et al., 2022) [17]. Neuroimaging studies further reveal that entertaining content reduces price sensitivity toward green premiums, thereby elevating payment willingness (Lee et al., 2021) [26]. Conceptually, social media entertainment refers to marketers' strategic creation of enjoyable and playful user experiences during platform

engagement (Ashley & Tuten, 2015) [27]. Such entertainment-driven strategies foster brand affinity and strengthen purchase intentions (Gallaugh & Ransbotham, 2010) [28]. Marketers effectively capture attention by sharing product visuals and narratives that fulfill hedonic needs, thereby achieving superior engagement (Merrilees, 2016) [29].

Regarding interactivity, this dimension quantifies a platform's capacity to facilitate bidirectional opinion exchange and collaborative information sharing [28]. As a catalyst for UGC creation, interactivity reinforces brand attitudes and purchase motivations [30]. Experimental evidence from Zhang and Benoit (2023) illustrates that UGC elevates green brand trust through social validation mechanisms, particularly among Generation Z cohorts, where real-time comment interactions account for 19% variance in payment willingness [31].

2.2. *Green Premium*

The economic essence of the green premium lies in the price internalization of environmental externalities. Porter and Kramer (2019) posit that green premiums should internalize lifecycle environmental costs, requiring pricing strategies that balance consumer affordability with ecological benefits [32]. Empirical studies identify an inverted U-curve in premium acceptance: willingness plummets when premiums exceed 15% of benchmark prices [33].

2.3. *Willingness to Pay Green Premium (WTPGP)*

WTPGP denotes the maximum monetary amount consumers are prepared to expend for environmentally advantageous products/services [34]. This metric reflects consumers' proactive commitment to absorbing additional costs for ecological benefits. However, when green premiums surpass psychological accounting thresholds, even environmentally conscious consumers may defer purchases [35]. Social media "green influencers" amplify WTPGP by 1.8-fold among followers through demonstration effects [36]. Experimental data indicate that carbon footprint labeling increases premium payment likelihood by 37% [37].

2.4. *Green Marketing (GM)*

GM fundamentally achieves synergy between environmental stewardship and market performance through value reconstruction. Hart and Dowell (2023), applying resource-based theory, identify GM's competitive advantage as deriving from dynamic integration of green knowledge repositories, exemplified by supply chain traceability technologies enhancing transparency [38]. Green experiential marketing leverages embodied cognition mechanisms to intensify value perception; for instance, carbon-neutral travel programs utilizing immersive environmental education boost WTP by 22% [39].

2.5. *Research Model*

Proposed by Mehrabian and Russell in 1974, the Stimulus-Organism-Response (SOR) theory has been widely applied in consumer behavior research [40]. This theoretical framework posits that external environmental stimuli (S) such as brand or marketing initiatives can activate individuals' internal organismic variables (O), including perceptions or trust mechanisms, thereby eliciting behavioral responses (R) like purchasing decisions or product adoption.

Originating from communication studies, the Uses and Gratifications Theory was initially employed in traditional platforms and technological media as an analytical tool for understanding consumer emotions, cognitive processes, and emerging needs. It has been particularly utilized to examine specific cases where media successfully engage consumer audiences [41]. With the advent of internet technologies and novel interactive platforms - including email, instant messaging, blogs, chat rooms, and other digital communication formats - this theoretical framework has been extensively applied to social media research as well.

3. Research Methodology

This study formulates hypotheses drawing upon the Uses and Gratifications (U&G) theory and Stimulus-Organism-Response (SOR) framework. The U&G theory stands as one of the most prevalent frameworks for examining media usage motivations. It posits that individuals proactively select specific media and content to achieve predetermined objectives or effects [42]. Human behaviors are fundamentally driven by the pursuit of gratifications, with behavioral outcomes manifesting as attained satisfactions. The core impetus behind such behaviors resides in gratification-seeking motivations, wherein social media activities serve as instrumental means to obtain targeted satisfactions, while motivations activate goal-oriented actions [43]. Grounded in U&G theory, consumers derive satisfaction from green products by fulfilling their ecological demands through social media marketing-enabled green premium payments.

The SOR paradigm contends that human information processing originates from external stimuli [44]. Individuals exposed to environmental stimuli undergo psychological processes that culminate in behavioral responses. Within this theoretical context, social media marketing constitutes the "stimulus" triggering consumers' willingness to pay green premiums. Consumers' cognitive perceptions regarding green premium payments represent the "organism" component, whereas their final payment intentions correspond to the "response" element in the SOR model.

3.1. Hypotheses Development

3.1.1. Relationship Between Social Media Marketing and Green Marketing

Existing scholarship recognizes that brand communications incorporating entertainment elements are perceived as enjoyable and playful [27], motivating consumers to invest greater effort in brand exploration [45]. Entertainment-oriented social media marketing content serves dual functions: providing engaging information while reinforcing affective brand attachments [46]. As a potent motivator for social media engagement, entertainment value stimulates user interactions with corporate brands [47]. Consumers demonstrate willingness to like, comment on, and share platform content, collaboratively constructing shared experiences with like-minded peers [48]. Hedonic motivations significantly drive content creation intentions, with pleasure-seeking users exhibiting heightened propensity for content uploads [49]. These findings substantiate entertainment's pivotal role in advancing green marketing initiatives.

Social media marketing enables customized brand communication tailored to consumer needs [50]. Through platform-based dissemination of product information aligned with consumer preferences - encompassing pricing, attributes, and functionalities - marketers enhance perceived brand value and cultivate brand trust [51]. Precision-targeted marketing optimizes cognitive experiences and emotional connections, stimulating consumer engagement [28] and predisposing brands to become primary choices during decision-making processes [52].

Interactive social media features facilitate bidirectional brand-consumer communication, fostering positive brand perceptions [51]. Branded platforms encourage user-generated content sharing to amplify interactivity [53], while marketers incentivize participation through storytelling initiatives, brand advocacy campaigns, and subscription solicitations [28]. Such participatory activities strengthen consumer-brand interactions [54], ultimately enhancing comprehension of product attributes and brand advantages [55]. Consumers actively consume and disseminate brand-related information to expand knowledge networks [56], simultaneously fulfilling needs for social validation [57].

Novelty-driven content consumption enables consumers to track brand innovations and industry trends [58]. Social media information demonstrating temporal relevance proves particularly effective in consumer engagement [28]. Fresh informational inputs capture attention, evoke positive affect, and reinforce loyalty intentions [59]. As consumers increasingly rely on social media recommendations during decision-making processes, motivation to explore brand-related content intensifies accordingly [60].

Synthesizing these theoretical perspectives, this study proposes the following hypotheses concerning social media marketing's impact on green marketing:

- H1: Social media marketing exerts a positive influence on green marketing.
- H1-1: The entertainment dimension of social media marketing positively affects green marketing.
- H1-2: The precision dimension of social media marketing positively affects green marketing.
- H1-3: The interactivity dimension of social media marketing positively affects green marketing.
- H1-4: The novelty dimension of social media marketing positively affects green marketing.

3.1.2. Relationship Between Social Media Marketing and Consumers' Green Premium Payment Willingness

Given consumers' growing reliance on social networks for decision-making, purchase intentions are profoundly shaped by brand-consumer interactions [61]. Purchase intention—the psychological stage where consumers develop behavioral willingness toward a product or brand—is recognized as a primary objective of brand-driven social media campaigns [62]. Empirical evidence indicates that heightened social media engagement correlates with increased likelihood of future brand purchases, thereby cementing critical consumer-brand relationships.

The entertainment dimension directly influences WTP through emotional transference mechanisms. Exposure to green information in pleasurable states triggers emotional generalization effects, enhancing premium acceptance [33]. Precision targeting elevates WTP by reducing decision-making friction; personalized recommendations based on consumption histories amplify green premium payment willingness by 2.3-fold [19]. Interactivity drives premium payments via social proof mechanisms: Zhang and Benoit's (2023) experiment revealed that real-time comment interactions boost WTP by 33%, particularly among "green-hesitant" consumers [31]. Novelty enhances WTP through cognitive scarcity perceptions, as evidenced by limited-edition green products paired with AR launch ceremonies significantly elevating payment willingness [39]. Neuroscientific findings further demonstrate that novel marketing stimuli activate the dorsolateral prefrontal cortex, accelerating decision-making by amplifying symbolic value attribution to green premiums [17].

Building on this evidence, the study proposes hypotheses regarding social media marketing's impact on green premium payment willingness:

- H2: Social media marketing positively influences consumers' green premium payment willingness.
- H2-1: The entertainment dimension of social media marketing positively affects green premium payment willingness.
- H2-2: The precision dimension of social media marketing positively affects green premium payment willingness.
- H2-3: The interactivity dimension of social media marketing positively affects green premium payment willingness.
- H2-4: The novelty dimension of social media marketing positively affects green premium payment willingness.

3.1.3. Mediating Role of Green Marketing

Green marketing effectively strengthens green purchase intentions by enhancing consumers' ecological product knowledge [63]. As sustainable consumption norms gain societal traction, green brand images are more readily embraced, elevating consumer satisfaction, brand loyalty, and green purchase intentions [64].

The entertainment dimension indirectly impacts WTP through green marketing's affective reinforcement pathway. Green marketing mediates 52% of the relationship between entertainment and WTP, indicating that consumers first associate entertaining content with brands' environmental stewardship before accepting premiums [26]. Precision exerts full mediation via green marketing's

informational optimization pathway. When recommendations align with consumers' eco-values, green marketing credibility scores rise, resulting in a 1.7-fold WTP increase [19].

These findings suggest green marketing's significant impact on green purchase intentions, potentially extending to green premium payment willingness. Consequently, the study posits green marketing as a mediator:

H3: Green marketing positively influences consumers' green premium payment willingness.

H4-1: Green marketing mediates the relationship between social media marketing entertainment and green premium payment willingness.

H4-2: Green marketing mediates the relationship between social media marketing precision and green premium payment willingness.

H4-3: Green marketing mediates the relationship between social media marketing interactivity and green premium payment willingness.

H4-4: Green marketing mediates the relationship between social media marketing novelty and green premium payment willingness.

3.2. Research Model

Building upon the aforementioned theoretical foundation, this study constructs a conceptual research model (as illustrated in the diagrammatic framework). The model positions social media marketing as the independent variable, consumers' green premium payment willingness as the dependent variable, and green marketing as the mediating variable.

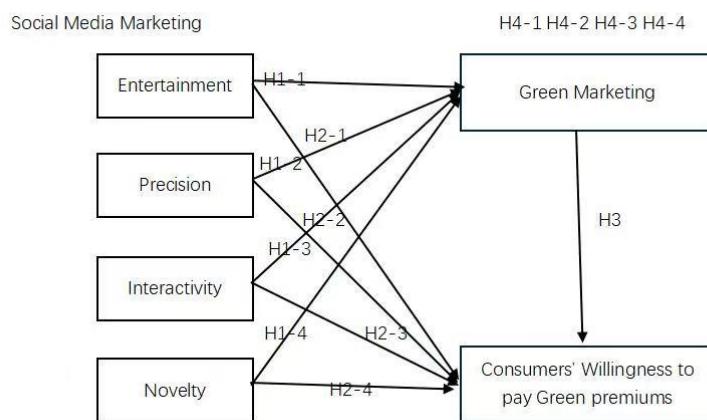


Figure 1.

3.3. Measurement Instruments

To empirically examine the relationships among social media marketing, green premium payment willingness, and green marketing, this study employs SPSS 26.0 for demographic profiling, reliability testing, and exploratory factor analysis (EFA), alongside AMOS 23.0 for confirmatory factor analysis (CFA), path analysis, and mediation effect testing. Drawing from validated measurement scales in prior literature, a structured questionnaire was developed using Likert-type scales for all constructs. The instrument's operationalization is summarized in the appended Table1.

Table 1.

Variable	Question	Code	Survey Count
Entertainment	Social media marketing content is enjoyable	YYX1	4
	Social media marketing content is exciting	YYX2	
	Social media activities easily pass the time	YYX3	
	Social media activities easily pass the time	YYX4	
	Recommends products I am interested in	JZX1	
Precision	Recommends products based on my preferences	JZX2	4
	Recommends products I want	JZX3	
	Captures my attention effectively	JZX4	
	Shares up-to-date information	XYX1	
	Shares trendy content	XYX2	
Novelty	Publishes creative video content	XYX3	4
	Publishes novel video content	XYX4	
	Enables information sharing	HDX 1	
	Facilitates discussions and exchanges of opinions	HDX 2	
	Makes it easy to express opinions	HDX 3	
Interactivity	Actively engages with audiences	HDX 4	4
	Enhances understanding of green environmental knowledge	LSY1	
	Promotes awareness of green consumption concepts	LSY2	
	Educes about green production technologies	LSY3	
	Educes about green product craftsmanship	LSY4	
Green Marketing	Provides access to green product information	LSY5	10
	Adopts high-standard green production technologies	LSY6	
	Uses low-energy, pollution-free production processes	LSY7	
	Commits to high environmental standards	LSY8	
	Eco-friendly practices	LSY9	
Green Premium Payment Willingness	Healthy and environmentally conscious	LSY10	4
	Willing to pay extra for green products	YJZ1	
	Worth purchasing despite higher prices	YJZ2	
	Plans to purchase in the future	YJZ3	
	Will recommend to friends	YJZ4	

The research targets active social media platform users as the study population. An online survey distributed via Wenjuanxing (a leading Chinese survey platform) yielded 345 initial responses, with 313 valid questionnaires retained after data cleansing, achieving a 90.7% validity rate.

4. Research Findings

4.1 Demographic Analysis

Table 2 presents the demographic profile of the 313 valid samples. The majority of respondents were female, with most participants aged between 23 and 40. Consumers reported an average daily social media usage duration of 3–4 hours. Detailed demographic characteristics are summarized in Table 2.

Table 2.

		Demographics		
Variable	Group	Frequency	Ratio(%)	
Gender	Male	158	45.8	
	Female	187	54.2	
Age	≤ 22 years old	39	11.3	
	23-30 years old	145	42.03	
Occupation	31-40 years old	106	30.72	
	≥ 41 years old	55	15.94	
Daily Social Media Usage	Student	37	10.72	
	Teacher	78	22.61	
Occupation	Freelancer	122	35.36	
	Corporate	108	31.3	
Daily Social Media Usage	≤ 2 hours	86	24.93	
	3-4 hours	151	43.77	
Daily Social Media Usage	5-6 hours	72	20.87	
	≥ 7 hours	36	10.43	

4.2. Reliability Analysis

Reliability testing was conducted to assess the consistency, stability, and dependability of measurements. Using SPSS 26.0, Cronbach's alpha values were calculated for each item and construct. As shown in Table 3, all constructs exhibited Cronbach's alpha values exceeding 0.7 ($\alpha > 0.7$), confirming strong internal consistency and satisfactory questionnaire reliability.

Table 3.

Cronbach's Alpha by Item			
Variable	Code	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
Social Media Marketing	YYX1	0.899	0.916
	YYX2	0.883	
	YYX3	0.895	
	YYX4	0.889	
	JZX1	0.865	
	JZX2	0.867	0.899
	JZX3	0.871	
	JZX4	0.876	
	XYX1	0.891	
Novelty	XYX2	0.887	0.913
	XYX3	0.872	
	XYX4	0.899	
	HDX1	0.888	
	HDX2	0.893	0.919
Interactivity			

	HDX	0.901	
	3		
	HDX	0.897	
	4		
	LSY1	0.931	
	LSY2	0.929	
	LSY3	0.933	
	LSY4	0.927	
	LSY5	0.932	
Green Marketing	LSY6	0.931	0.937
	LSY7	0.929	
	LSY8	0.928	
	LSY9	0.929	
	LSY1	0.932	
	0		
	YJZ1	0.869	
Green Premium	YJZ2	0.862	
Payment Willingness	YJZ3	0.858	0.869
	YJZ4	0.877	

4.3. Validity Analysis

Kaiser-Meyer-Olkin (KMO) and Bartlett's tests were performed via SPSS 26.0 to evaluate the suitability of the model for factor analysis. Results (Table 4) revealed a KMO value of 0.930 (> 0.7) and statistically significant Bartlett's test results ($p < 0.001$), confirming robust validity and appropriateness for factor analysis.

Table 4.

KMO and Bartlett's Tes		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO)		0.930
Bartlett's Test of Sphericity	Approx. Chi-Square	6780.060
	Degrees of Freedom	435.000
	Significance	0.000

4.4. Exploratory Factor Analysis (EFA)

EFA was conducted using SPSS 26.0 with principal component analysis (PCA) for factor extraction. The scree plot (Table 5) identified six factors with eigenvalues >1 , collectively explaining 74.077% of the total variance, indicating reasonable factor extraction.

Table 5.

Component	Total Variance Explained									
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings (Varimax)			
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	
1	11.071	36.903	36.903	11.071	36.903	36.903	6.500	21.665	21.665	
2	3.735	12.449	49.352	3.735	12.449	49.352	3.211	10.703	32.368	
3	2.182	7.274	56.625	2.182	7.274	56.625	3.200	10.665	43.034	
4	1.872	6.239	62.864	1.872	6.239	62.864	3.132	10.441	53.475	
5	1.756	5.853	68.717	1.756	5.853	68.717	3.119	10.396	63.871	
6	1.608	5.360	74.077	1.608	5.360	74.077	3.062	10.206	74.077	
7	0.549	1.831	75.908							
8	0.545	1.816	77.724							
9	0.518	1.725	79.450							
10	0.469	1.562	81.012							
11	0.425	1.415	82.427							
12	0.420	1.401	83.828							
13	0.401	1.337	85.165							
14	0.372	1.241	86.406							
15	0.358	1.193	87.599							
16	0.350	1.168	88.767							
17	0.337	1.124	89.891							
18	0.316	1.053	90.944							
19	0.307	1.023	91.968							
20	0.295	0.985	92.953							
21	0.289	0.962	93.914							
22	0.262	0.873	94.787							
23	0.233	0.776	95.563							
24	0.225	0.749	96.313							
25	0.213	0.711	97.024							
26	0.209	0.697	97.721							
27	0.183	0.611	98.331							
28	0.180	0.601	98.932							
29	0.162	0.540	99.472							
30	0.158	0.528	100.000							

Post-rotation via Varimax orthogonal rotation (Table 6) demonstrated all measurement items exhibiting factor loadings >0.5, confirming strong construct validity.

Table 6.

	Rotated Component Matrix					
	Component					
	1	2	3	4	5	6
YYX1					0.789	
YYX2					0.828	
YYX3					0.793	
YYX4					0.814	
JZX1				0.851		
JZX2				0.840		
JZX3				0.825		
JZX4				0.805		
XYX1		0.827				
XYX2		0.836				
XYX3		0.879				
XYX4		0.806				
HDX1			0.845			
HDX2			0.824			
HDX3			0.790			
HDX4			0.813			
LSY1	0.769					
LSY2	0.780					
LSY3	0.766					
LSY4	0.767					
LSY5	0.785					
LSY6	0.746					
LSY7	0.755					
LSY8	0.785					
LSY9	0.782					
LSY10	0.777					
YJZ1					0.797	
YJZ2					0.830	
YJZ3					0.814	
YJZ4					0.784	

Extraction Method:Principal Component Analysis.

Rotation Method:Varimax with Kaiser Normalization.

The rotation converged in 6 iterations.

4.5. Path Analysis

Following Hair et al.'s (2017) guidelines [65], a covariance-based structural equation modeling (SEM) approach was adopted. Model fit indices (Table 7) met established thresholds: $\chi^2/df = 1.206$, $GFI = 0.913$, $AGFI = 0.896$, $CFI = 0.988$, $NFI = 0.933$, $TLI = 0.986$, $RMSEA = 0.026$.

The entertainment, precision, and interactivity dimensions of social media marketing exhibited statistically significant positive effects on green marketing, while novelty demonstrated no significant influence. Hypotheses H1-1, H1-2, and H1-3 were empirically supported, whereas H1-4 was rejected. Concurrently, the entertainment, precision, and novelty dimensions significantly enhanced green premium payment willingness, though interactivity failed to exert a direct impact on green marketing. This pattern corroborated hypotheses H2-1, H2-2, and H2-4, while invalidating H2-3. Furthermore, green marketing demonstrated a robust positive correlation with consumers' willingness to pay green premiums, thereby confirming Hypothesis H3.

Table 7.

Path Analysis Results					
Path	Estimate	S.E.	C.R.	P	Results
Entertainment → Green Marketing	0.216	0.064	3.402	**	Supported
Precision → Green Marketing	0.133	0.630	2.112	0.035	Supported
Interactivity → Green Marketing	0.188	0.610	3.098	0.002	Supported
Novelty → Green Marketing	0.049	0.070	0.700	0.484	Not Supported
Entertainment → Green Premium Payment	0.186	0.063	2.944	0.003	Supported
Precision → Green Premium Payment	0.176	0.062	2.834	0.005	Supported
Interactivity → Green Premium Payment	0.095	0.060	1.586	0.113	Not Supported
Novelty → Green Premium Payment	0.212	0.069	3.055	0.002	Supported
Green Marketing → Green Premium Payment	0.141	0.062	2.281	0.023	Supported

DF=390, X/DF=1.206, GFI=0.913, AGFI=0.896, CFI=0.988, NFI=0.933, RMSEA=0.026

4.6. Mediation Effect Analysis

The predominant method for testing mediation effects follows a three-step causal pathway approach: 1. Initial Correlation Testing: Verify significant correlations between (a) independent and mediating variables, (b) independent and dependent variables, and (c) mediating and dependent variables. 2. Mediation Model Integration: If all three correlations prove significant, incorporate the mediator into the relationship between independent and dependent variables. 3. Mediation Type Determination: Partial Mediation: Observed when the independent-dependent relationship attenuates yet remains statistically significant post-mediation inclusion. Full Mediation: Established if the independent-dependent relationship becomes non-significant after mediator introduction. No Mediation: Concluded when the independent-dependent relationship remains unchanged despite mediator integration.

Table 8.

Path Relationships	Path	Estimate	Lower	Upper	P
Direct Effects	Entertainment → Green Premium Payment	0.186	0.069	0.316	0.002
	Novelty → Green Premium Payment	0.212	0.073	0.360	0.007
	Interactivity → Green Premium Payment	0.095	-0.031	0.213	0.133
	Precision → Green Premium Payment	0.176	0.046	0.306	0.010
Indirect Effects	Entertainment → Green Marketing → Green Premium Payment	0.030	0.005	0.075	0.021
	Novelty → Green Marketing → Green Premium Payment	0.007	-0.011	0.043	0.375
	Interactivity → Green Marketing → Green Premium Payment	0.026	0.004	0.062	0.025
	Precision → Green Marketing → Green Premium Payment	0.019	0.001	0.055	0.034
Total Effects	Entertainment → Green Premium Payment	0.216	0.101	0.353	0.001
	Novelty → Green Premium Payment	0.218	0.078	0.364	0.007
	Interactivity → Green Premium Payment	0.121	0.004	0.231	0.040
	Precision → Green Premium Payment	0.194	0.068	0.325	0.004

4.6.1. Direct Effects

Entertainment → Green Premium Payment: The 95% confidence interval excludes zero (95% CI: 0.069–0.316), thereby confirming the existence of a significant direct effect pathway.

Novelty → Green Premium Payment: The 95% confidence interval excludes zero (95% CI: 0.073–0.36), thus validating the presence of a direct effect.

Interactivity → Green Premium Payment: The 95% confidence interval includes zero (95% CI: -0.031–0.213), indicating no statistically significant direct effect.

Precision → Green Premium Payment: The 95% confidence interval excludes zero (95% CI: 0.046–0.306), confirming a significant direct effect pathway.

4.6.2. Indirect Effects

Entertainment → Green Marketing → Green Premium Payment: The 95% confidence interval excludes zero (95% CI: 0.005–0.075), establishing the presence of a significant indirect mediation pathway.

Novelty → Green Marketing → Green Premium Payment: The 95% confidence interval includes zero (95% CI: -0.011–0.043), demonstrating no statistically meaningful mediation effect.

Interactivity → Green Marketing → Green Premium Payment: The 95% confidence interval excludes zero (95% CI: 0.004–0.062), confirming a significant indirect mediation effect.

Precision → Green Marketing → Green Premium Payment: The 95% confidence interval excludes zero (95% CI: 0.001–0.055), supporting the existence of an indirect mediation pathway.

4.6.3. Total Effects

Entertainment → Green Premium Payment: The 95% confidence interval excludes zero (95% CI: 0.101–0.353), affirming a significant total effect.

Novelty → Green Premium Payment: The 95% confidence interval excludes zero (95% CI: 0.078–0.364), validating the presence of a total effect.

Interactivity → Green Premium Payment: The 95% confidence interval excludes zero (95% CI: 0.004–0.231), confirming a statistically significant total effect.

Precision → Green Premium Payment: The 95% confidence interval excludes zero (95% CI: 0.068–0.325), establishing a robust total effect pathway.

5. Research Conclusions

5.1. Research Conclusions

The hypotheses proposed in this study draw on the Uses and Gratifications theory (U&G) and the Stimulus-Organism-Response (SOR) model. With green marketing as the mediating variable, this study analyzes the influence and mechanism of social media marketing on consumers' willingness to pay a green premium. The research findings are as follows: (1) In the process of social media marketing, entertainment, precision, and interactivity all have significant positive impacts on green marketing. The main reason lies in that social media marketing conducts promotion, investment, and publicity in green marketing through the entertainment of its content, precise information push to consumers, as well as interactive participation and emotional resonance with consumers, which affects consumers' cognition of green brand images and acquisition of green knowledge. (2) Entertainment, precision, and novelty in social media marketing have significant positive impacts on consumers' willingness to pay a green premium. When consumers perceive that social media marketing is more entertaining, they are more likely to engage in information search and reading on social media, and learn more green knowledge, thus increasing their willingness to pay a green premium. When consumers see information that is more relevant to their interests and needs, it can better promote their behaviors related to the willingness to pay a green premium. (3) Regarding the mediating effect of green marketing, green marketing has a certain mediating effect in the process of how entertainment, interactivity, and precision influence the willingness to pay a green premium. Among them, green marketing plays a partial mediating role in the influence of entertainment and precision on the willingness to pay a green premium; green marketing plays a full mediating role in the influence of interactivity on the willingness to pay a green premium. In the process of information transmission, by accurately disseminating information such as green product certification, production process transparency, production technology, and environmental friendliness, consumers' cognition of green value is strengthened. At the same time, with the help of the pleasant and interesting content of social media marketing, the environmental image of the brand is constructed, stimulating consumers' sense of environmental responsibility and identity.

This study makes contributions both theoretically and practically. Firstly, through empirical analysis of the influence of green marketing on the relationship between social media marketing and consumers' willingness to pay a green premium, this study provides some theoretical references for future research. Secondly, by combining and applying the SOR model and the Uses and Gratifications theory (U&G) to the study of how social media marketing affects consumers' willingness to pay a green premium, and through this model and theory, it is possible to understand how social media marketing influences consumers' willingness to pay a green premium through green marketing. The combination of these two theories provides a new perspective for this study, which is more conducive to a deeper understanding of the mechanism by which social media marketing affects consumers' willingness to pay a green premium. Finally, as various brands enter social media platforms, they attach more and more importance to social media marketing, and the competition is becoming increasingly fierce. The costs of advertising on various social media platforms are also rising. This study can help various brands understand which marketing methods are more effective in increasing consumers' willingness to pay a green premium.

5.2. Limitations and Future Research

Although this study has certain contributions both theoretically and practically, there are still some limitations. Firstly, consumers can be divided into corporate consumers and individual consumers. The survey respondents are limited to individual consumers, which has certain limitations and geographical biases. If the respondents are expanded to include corporate consumers, it may be more persuasive. Secondly, this study takes green marketing as the mediating variable, which has certain limitations in its selection. If future research can consider incorporating mediating variables from other dimensions for analysis, such as green satisfaction, green trust, green perceived

value, consumer loyalty, etc., it will be possible to have a more comprehensive understanding of the influence of social media marketing on consumers' willingness to pay a green premium.

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