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RESEARCH ARTICLE

Consideration of Direct and Indirect Factors Affect Electronic Word-of-Mouth: the Change of Green Product Consumption in the Capital of Vietnam

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ABSTRACT

The study explored the impact of several factors on customers' electronic Word-of-Mouth (eWoM) concerning green products in the capital of Vietnam. A conceptual model was built based on combining The Unified Theory of Acceptance and Use of Technology and the Attitude-Behavior-Context Theory. STATA software was used to analyze the data of valid responses from 412 surveys. The study demonstrated that eWoM is significantly affected by altruistic values, perceived quality, and brand equity. Perceived quality exerts both direct and indirect effects on eWoM through brand equity as a partial mediator. Additionally, brand equity plays the role of a full mediator of the influence of relationship quality on eWoM. Practical solutions can be tailored to support organizations in cultivating robust factors that affect eWoM and drive revenue growth. This research also provides practical value for businesses and marketing policymakers seeking to boost eWoM among general consumers and those with environmental awareness.

INTRODUCTION

In the trend of global advancement, over the past thirty years, there has been a steady rise in consumer awareness regarding environmental issues, signifying a shift from the periphery to the forefront of mainstream concerns [1]. This shift is propelled by various factors, including heightened media attention, increased environmental issues awareness, the proliferation of pressure group activities, rigorous national and international regulations, as well as the influence of significant industrial disasters on public opinion [2]. Accordingly, consumers are more concerned about their daily habits and the impacts can have on the environment [3]. Marketers perceive this trend as presenting lucrative business prospects, prompting several organizations to devise and execute proactive, enduring environmental strategies. In order to attract and retain customers, sustainable business strategies, operational programs, and implementation guidelines have been developed and formulated as integral components of overarching business strategies. These initiatives aim to bolster awareness and foster environmentally conscious behaviors among customers [4]. In Vietnam, while distinct regulations specifically addressing green consumption may be absent, numerous provisions pertaining to green and sustainable consumption have been promptly incorporated into policy frameworks. The Vietnamese Government has integrated and codified such measures across various documents issued by the Party and State.

Organizations must adopt an effective and customized marketing approach to gain a competitive advantage and pursue business objectives such as revenue growth, market share expansion, and operational efficiency [5]. Word-of-Mouth (WoM) stands as one of the earliest advertising methods in the annals of marketing history, and with the development of the Internet, electronic Word-of-Mouth (eWoM) was created. Its enduring significance and influence persist to this day, particularly evident in the overall promotion of products and, notably, in the case of green products. WoM can be up to 7 times more effective than printing advertising and social psychologists have directed considerable attention toward the influence of interpersonal communication, noting a correlation between personal discourse and decision-making across diverse contexts, including the shopping process [6]. The advent of the internet has further empowered WoM, enabling its dissemination and facilitating connections among individuals within communities in an exceedingly efficient and rapid manner [7]. In reality, discussions on social media platforms often revolve around brands and this phenomenon influences consumers' purchasing intentions [8, 9].

The literature review indicates a current absence of studies in Vietnam aimed at evaluating the factors influencing eWOM, particularly regarding eWOM for green products. Therefore, this research seeks to validate and assess the impact of these factors on eWOM for green products. To achieve the aforementioned objective, this study constructs and validates a model integrating The Unified Theory of Acceptance and Use of Technology (UTAUT) and the Attitude-Behavior-Context Theory (ABC). The anticipated results of the research are expected to further contribute to understanding the topic of electronic Word-of-Mouth (eWOM) and provide the necessary scientific evidence, aiding marketers in utilizing eWOM effectively in internet marketing activities.

LITERATURE REVIEW

Research Background and Theoretical Framework

The Unified Theory of Acceptance and Use of Technology (UTAUT)

Venkatesh et al. [10] synthesized eight prominent models in information technology (IT) acceptance research to propose a comprehensive framework known as the Unified Theory of Acceptance and Use of Technology (UTAUT). The UTAUT model is widely recognized in IT and its related fields and acceptance research for its comprehensive approach, integrating elements from various theories and models to provide a unified view [11]. This endeavor aimed to streamline and eliminate redundancy across these theories by identifying common constructs [12]. This model posits that four key factors (performance expectancy, effort expectancy, social influence, and facilitating conditions) directly influence behavioral intention and subsequent behavior.

In the context of this study, the UTAUT model is applied to explain how customers' attitudes and perceptions influence their propensity to engage in eWoM behavior. The performance expectancy involves using technology platforms to spread information and encourage others, including friends and family, to adopt environmentally friendly products. By leveraging the UTAUT model, this research aims to identify the key drivers that shape customers' intentions and behaviors related to eWoM.

Consequently, the research highlighted the extensive development of antecedents within Information Systems (IS) research, particularly concerning the intention to utilize specific systems within organizational contexts. Within this domain, three key constructs encompass the concept of social influence: subjective norm, social factors, and image. Among these, the Subjective Norm stands out as a fundamental construct explaining the intention to use an IS, originating from the Theory of Reasoned Action (TRA) by Fishbein and Ajzen [13]. Subjective norms pertain to the perceived social pressure exerted on individuals to either engage or refrain from engaging in a particular behavior [14]. Building upon the original conceptualization by Fishbein and Ajzen, Venkatesh and Brown

(2001) further refined the construct of the Subjective Norm, categorizing social influences into two distinct groups: those stemming from friends and family, and those from secondary sources [15].

In this study, subjective norms include Altruism value, Perceived value, and Relationship quality. These factors act as internal motivators in the Motivational Model (MM) [16] to stimulate consumers' eWoM behavior.

The Attitude-Behavior-Context Theory (ABC)

Guagnano et al. [17] introduced the Attitude-Behavior-Condition (A-B-C) theory as a framework for forecasting environmental conduct. According to this theory, environmental actions are influenced by both internal attitudes and external circumstances. The original Attitude-Behavior-Context (ABC) theory, as proposed by Stern [18], suggests that engaging in pro-environmental behaviors is the result of a mixed interaction between various internal and external factors. In the research, the authors elaborated on this by emphasizing the role of internal environmental attitudes (A) and external contextual conditions (C) as well as their interactions in shaping pro-environmental behavior [17]. The ABC theory has found wide application in researching pro-environmental actions, spanning areas such as climate change awareness, sustainable consumption, and recycling efforts [19, 20].

In light of ABC theory, the research model was proposed, in which consumers' environmental behavior of eWoM is influenced not only by their attitudes towards environmental issues but also by the interplay of internal and external factors within their environment. These factors are encapsulated by the ABC theory of behavior. Within this framework, consumers' attitudes towards environmental issues, represented by variables of Altruism value, play a significant role in shaping their eWoM behavior. Additionally, external contextual factors, such as Brand equity, exert influence on eWoM behavior. However, it's crucial to recognize that these external factors do not act in isolation; rather, they interact with internal environmental factors, such as Relationship quality (RQ) and Perceived quality (PQ), within the consumer's environment, further shaping their propensity for eWoM behavior.

Electronic Word-of-Mouth and its Influencing Factors

Electronic Word-of-Mouth (eWoM)

WoM denotes informal discussions between individuals regarding a brand, product, entity, or service, and is commonly recognized as a crucial factor shaping consumer choices [21]. In the marketing context, WoM communications encompass informal exchanges aimed at various types of customer concerning the ownership, usage, or features of specific goods and services, along with the sellers [22].

In recent years, researchers have increasingly focused on the evolving nature and impact of WoM occurring within online environments, commonly referred to as eWoM, as new media technologies continue to develop [23, 24]. Traditional WoM involves direct interpersonal communication [25, 26], whereas eWoM takes place on online platforms, allowing for information exchange among a broad audience [27]. Essentially, eWoM facilitates information sharing without the need for face-to-face interaction and is not constrained by geographical boundaries [27]. eWoM is commonly perceived as credible information within the domain of electronic commerce [28]. The research also highlighted that online consumer reviews serve as significant resources through which customers find information about the quality of products or services before purchasing products or services [28]. Nowaday, buyers can seek eWoM from various platforms, such as blogs, search engines, virtual communities, and consumer review systems [29, 30]. Moreover, social media websites, which are recently added to eWoM platforms, have introduced a new aspect to eWoM by allowing users to interact with their established networks. This enables individuals to share their viewpoints and

experiences regarding products or services with their friends and others on social media [31, 32]. The decreased anonymity associated with social media has the potential to enhance the trustworthiness and reliability of eWOM information [33, 34].

Green Products

The notion of "green products" encompasses various ways, with different definitions highlighting distinct aspects of environmental friendliness and sustainability. Green products may be delineated as items that are environmentally safe, devoid of pollutants, do not deplete natural resources, and are recyclable; they are manufactured using materials for components and packaging that pose no environmental hazards [35, 36]. Green products commonly referred to as organic and eco-friendly, typically contain minimal non-recyclable elements. The objective of Green products is to mitigate environmental impacts concerning water, air, and soil while being designed to prevent, mitigate, reduce, and rectify detrimental environmental effects [37, 38].

These definitions underscore the multifaceted character of green products, incorporating elements such as safety, sustainability, recyclability, and their wider environmental implications. Depending on the context and sector, particular facets of green products may be emphasized to fulfill specific environmental and consumer requirements.

Vietnam is a developing country with over 98 million in population [39], boasting over 3,200 kilometers of coastline along with numerous low-lying urban areas and river delta regions, stands as one of the most susceptible nations globally to the effects of climate change [40]. The repercussions of climate change, predominantly characterized by elevated temperatures and sea level rise, are already disrupting economic endeavors and eroding growth. Preliminary estimations indicate that Vietnam incurred losses of $10 billion in 2020, about 3.2 % of its GDP, because of climate change's impacts [41]. In the absence of adequate adaptation and mitigation efforts, projections suggest that climate change could impose a substantial economic toll on Vietnam, amounting to approximately 12 to 14.5 percent of GDP annually by 2050. Furthermore, it is anticipated that up to one million individuals could be pushed into extreme poverty by 2030 due to the exacerbating effects of climate change [41].

Meanwhile, green products play a crucial role in mitigating the effects on the environment and society, which are pivotal in combatting climate change [42]. Moreover, following a string of environmental pollution incidents and apprehensions regarding food in recent years, green products are progressively emerging as a new consumption tendency among Vietnamese consumers. Consequently, a substantial momentum for green product consumption is anticipated in the years to come [43].

Brand Equity (BE)

Since the 1980s, the concept of "brand equity" (BE) has evolved into one of the most pivotal marketing principles. It is represented as a collection of brand assets and related-to-a brand, including the name and symbol, which provide to or detract from the value delivered by a product/service to a business and/or its customer [44, 45]. Solomon and Stuart (2002) articulated BE as the value attributed to a brand by a specific organization or company. They elucidated that BE confers a competitive edge by endowing the brand with the capability to secure and retain a larger market share, as well as to command higher profit margins through pricing strategies. According to Aaker [44], BE encompasses a collection of five aspects of brand assets tied to a brand's name or symbol, which contribute to (or detract from) the value given by a product/service. These constructs include brand awareness, brand perceived quality, brand associations, brand loyalty, and other proprietary brand assets such as patents, trademarks, and channel relationships. Alternatively, Keller [46] and Krishnan [47] have conceptualized BE as the unique influence of brand knowledge on

customer responses to brand marketing. It encompasses a network of associations that consumers establish between brand attributes and perceived benefits.

In this study, the following definition of BE, which is deemed suitable for both the research context and the prevailing consumer landscape in Vietnam, is adopted: Brand Equity (BE) is a marketing concept that signifies the value a company can derive from possessing a reputable brand. It is grounded in the notion that consumers are willing to spend a premium for a comparable product in the market due to its brand association [44, 45]. BE is widely regarded as a driver of a company's sustained profitability over the long term [48]. Therefore, investigating the relationship between BE and eWoM will aid stakeholders in devising pertinent marketing strategies in the short term, thereby contributing to the establishment of enduring perceptions in consumers' minds and enhancing the efficacy of business strategies in the future [46].

Relationship Quality (RQ)

Researchers generally concur that the quality of the relationship between customers and businesses is established through three core components: (1) satisfaction, (2) trust, and (3) commitment [49-52]. Several studies have shown that customer satisfaction frequently results in commitments to green brand products, which can be evidenced by actions such as repurchasing products from the brand or engaging in positive behaviors like WoM [53, 54], and especially eWoM.

Perceived Quality (PQ)

Perceived quality (PQ) refers to the subjective assessment provided by customers regarding product quality [55]. The study emphasizes that perceived quality (1) differs from objective or actual quality, (2) encompasses a more abstract level than specific product attributes, (3) entails a comprehensive evaluation, sometimes aligning with attitudes, and (4) is an assessment often influenced by consumer cues. Essentially, PQ mirrors the consumer's perception of a product's ability to meet their expectations. Thus, high PQ suggests that consumers recognize the brand's distinctiveness and superiority based on their extensive experiences associated with the brand [56].

Furthermore, PQ can lead to consumer satisfaction, which is determined by the perceived performance relative to expectations [57]. While various scholars have offered different definitions, they all share a common characteristic: perceived product quality represents the consumer's perception of the holistic aspects of the product, encompassing both tangible and intangible attributes. Crucially, PQ differs from the actual quality of the products.

Altruistic Value (AV)

Altruism is linked with selflessness and benevolence. It implies a readiness to offer assistance voluntarily and without prompting, regardless of potential financial benefits or losses. Recycling has frequently been regarded as an example of altruism, symbolizing individuals' willingness to contribute to environmental preservation without expecting direct personal gain [58-60].

Altruistic individuals typically weigh the benefits and costs of a situation before deciding to offer assistance. When this concept is applied to environmental issues, it becomes apparent that the potential benefits are often difficult to quantify and evaluate. However, despite the uncertainty surrounding the outcomes and the time lag between action and potential results, highly altruistic individuals are still inclined to contribute efforts to environmental causes. Their motivation stems from personal satisfaction rather than monetary rewards [58].

Altruistic value (AV), within the context of green and sustainable products, represents the perceived worth that consumers assign to items or services that demonstrate environmental friendliness and contribute positively to societal and environmental well-being. It encapsulates the extent to which consumers perceive their purchasing choices as reflective of their personal values and a sense of duty

towards the planet and broader society [61]. This concept underscores consumers' willingness to prioritize environmentally responsible options, often driven by a desire to make ethical and sustainable choices that resonate with their intrinsic beliefs and aspirations for a better world.

Hypothesis and Proposed Model

The relationship between Altruistic Value (AV) and Electronic Word-of-Mouth

Altruism is a motivational drive aimed at enhancing the well-being of individuals other than oneself [62]. Altruistic consumers engage in online sharing of information and opinions without anticipating any form of reward [63]. Altruism, although acknowledged as a motivation for eWoM in scholarly literature, has often been overlooked in its significance by researchers and marketers [64]. While many online interactions are driven by self-interest, some individuals exhibit altruistic tendencies by offering advice, knowledge, and expertise to aid others. Additionally, altruistic consumers freely share information and opinions without expecting any form of reward, establishing them as trustworthy sources of unbiased information for consumers seeking recommendations and as valuable advocates for marketers in brand communication efforts.

Within the context of the study, consumers who experience altruistic value are more inclined to engage in positive eWoM marketing. They may share their experiences online with friends and family, advocating for the brand and its eco-friendly products, thereby amplifying the brand's reach and reputation. Using these analyses, the hypothesis is proposed as follows:

H1: Altruistic value has a positive impact on electronic Word-of-Mouth.

The relationship between Perceived Quality (PQ) and Electronic Word-of-Mouth, Brand Equity

When customers have outstanding perceptions of a product or a brand, they are more inclined to share their positive experiences with others through WoM [65]. In this context, customers voluntarily discuss the product or brand with their friends, family, or acquaintances through online platforms. eWoM is a powerful form of advertisement because it relies on personal recommendations and experiences, which can significantly influence others' purchasing decisions.

Similarly, when customers perceive a product or brand to possess superior quality, it elevates their overall impression of the brand. This favorable perception can result in heightened brand loyalty, trust, and a greater willingness to pay a premium for products associated with that brand. BE encompasses multiple dimensions, with PQ serving as a foundational element that shapes customers' evaluations of the brand [66]. Hence, the following hypotheses are proposed:

H2: Perceived quality has a positive impact on electronic Word-of-Mouth.

H3: Perceived quality has a positive impact on Brand equity.

The relationship between Relationship Quality (RQ) and Electronic Word-of-Mouth, Brand Equity

When customers develop a forceful affinity towards a brand or company, they often hold favorable attitudes toward it [37, 67, 68]. This positive sentiment can increase the likelihood of engaging in positive eWoM, such as recommending the brand or its products/services to others. Similarly, when a brand is trusted, the customers are more inclined to share positive feedback about it with others. Positive RQ can contribute to the establishment and reinforcement of BE [44, 69]. When customers maintain a strong and positive relationship with a brand, it can enhance their perceptions of the brand's overall value and reputation. Then, the following hypotheses are proposed:

H4: Relationship quality has a positive impact on electronic Word-of-Mouth.

H5: Relationship quality has a positive impact on Brand equity.

The relationship between Brand Equity (BE) and Electronic Word-of-Mouth

Positive BE refers to the overall positive perceptions, attitudes, and associations that customers hold toward a brand. It includes different dimensions, including brand awareness, brand loyalty, brand associations, and perceived quality. When a brand possesses a strong and positive BE, customers are more likely to engage in positive eWoM [70]. This implies that they are more inclined to speak favorably about the brand, recommend it to others, and share their positive experiences online [71, 72]. Conversely, positive eWoM can serve as a potent driver of brand success, as it involves personal recommendations and endorsements from satisfied customers.

H6: Brand equity has a positive impact on electronic Word-of-Mouth.

Besides, the indirect impacts of Relationship quality, Perceived quality on eWoM via BE generate the following hypotheses*:*

H7: Brand equity mediates the relationship between Perceived quality and electronic Word-of-Mouth.

H8: Brand equity mediates the relationship between Relationship quality and electronic Word-of-Mouth.

Based on the overview of previous research and the mentioned theoretical foundations, the theoretical model is proposed in **Figure 1**.

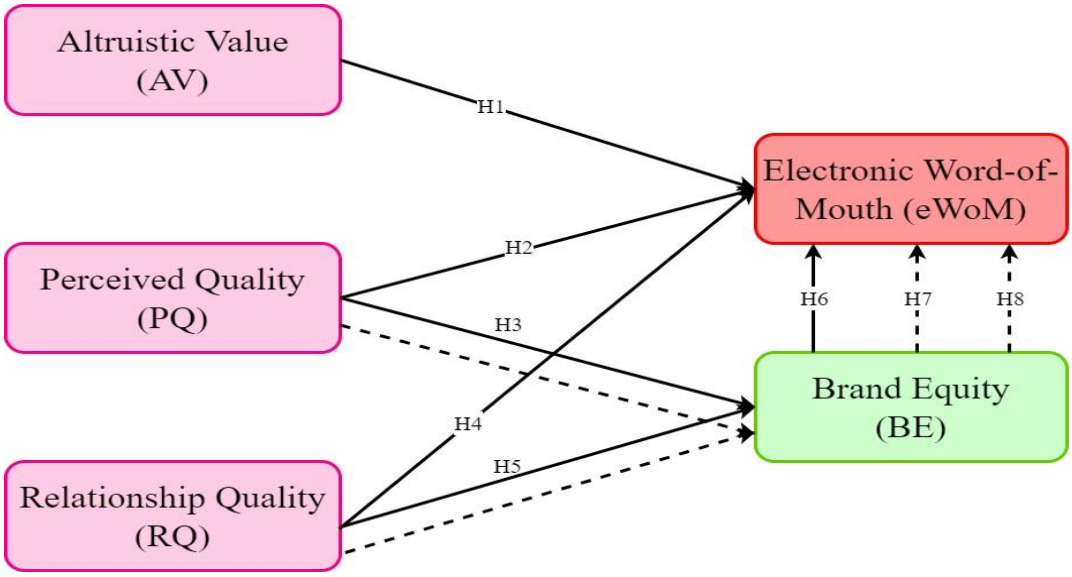

Figure 1. Theoretical proposed model

METHODOLOGY

Data collection

Initially, a Google Form survey was developed to leverage technological advancements via the Internet. Subsequently, the survey was disseminated online to the green consumer community from 15 November 2023 to 22 December 2023, utilizing various social media platforms such as Facebook and Zalo, which are widely utilized applications in Vietnam. To ensure the reliability of the results, the Google Form link allowed each participant to access the survey only once [73]. Comprehensive information about the project, including its purpose and contact details for the research team, was provided upfront to facilitate participants' understanding of the project and enable them to contact

the team as needed. In the initial phase, recipients of the survey were given the option to participate. If they declined, they had the opportunity to skip and exit the survey.

In contrast, participants who agreed to continue were directed to complete demographic questions, while the central section focused on their knowledge, attitudes, and behaviors regarding green products. Those who took part in the survey were required to meet specific criteria: 1) Residing within Hanoi city; 2) Being above 18 years old; 3) Agreeing the given informed consent; 4) Having heard about and used green products; 5) Having the ability to comprehend all survey questions. As a result, 412 observations were initially collected; however, invalid responses were excluded. Consequently, 354 responses remained for analysis, resulting in a response rate of 85.92%.

Measurement

Revised scales for Relationship quality (RQ), Perceived quality (PQ), Altruistic value (AV), Brand equity (BE), and electronic Word-of-Mouth (eWoM) were employed to assess respondents' knowledge, attitudes, and behaviors toward green products and their associated brands [OBJ] The Likert-5 scale, ranging from 1 (totally not agree) to 5 (totally agree), was utilized to measure all scales in the study. All scales exhibited Cronbach's Alpha values exceeding 0.6, indicating high reliability.

Data analysis

The data were analyzed using STATA software version 17 (StataCorp LLC). Statistical results were identified by calculating the mean and standard deviation (SD) of age, as well as determining the frequency and percentage of other variables. During the exploratory factor analysis (EFA) process, the Kaiser-Meyer-Olkin measure (KMO test) and Bartlett's test were conducted to assess the adequacy of the data [74]. Factors with Eigenvalues greater than or equal to 1 were retained based on the data results. Additionally, factor loadings greater than 0.5 were deemed necessary as an indicator of practical significance in EFA [75]. Subsequently, the reliability of scales was evaluated using Cronbach's Alpha, with a value greater than 0.7 ensuring scale reliability [76, 77]. In the subsequent step, confirmatory factor analysis (CFA) was performed, and reliability and validity between groups of variables were assessed through average variance extracted (AVE) and composite reliability (CR), with values higher than 0.5 and 0.7, respectively, considered acceptable [78]. Based on the theoretical model, structural equation modeling (SEM) was utilized to test the hypotheses. Goodness-of-fit test indices were calculated to assess the adequacy of fit between the sample data and the overall population.

RESULTS

Demographic characteristics

Regarding **Table 1**, among the respondents, 160 were male and 194 were female, accounting for 45.20% and 54.80%, respectively. The majority of the respondents had an income ranging from 15 million to below 30 million VND, representing 37.85%. The next group consisted of those with an income from 5 million to below 15 million VND, with 110 respondents (31.07%). Those with an income above 30 million VND constituted 31.07%. The remaining portion of respondents has an income of less than 5 million VND. The average age of those surveyed is 35.6 years old (SD=7.45). 172 of the respondents were Married or Living with spouses, accounting for 29.94%. Among the 354 responses, those with a university-level education had the highest proportion, making up 59.32%.

Table 1. Demographic characteristics of participants (n= 354)

Demographic characteristics	Number (n = 354)	Percentage (%)
Gender		
Male	160	45.20

Female	194	54.80
Current living place		
Private house	142	40.11
Rented house/ campus	212	59.89
Marital status		
Single/Cohabiting, unmarried	106	29.94
Married/Living with spouse	172	48.59
Divorced/Separated/Widowed	76	21.47
Average monthly income in the last 12 months (Unit: million VND/month)		
Below 5	80	22.60
From 5 to below 15	110	31.07
From 15 to below 30	134	37.85
Above 30	30	8.47
Highest educational level		
High school	109	30.79
University	210	59.32
Postgraduate	35	9.89

1USD equals 24,500VND at the data collection time

Scale validation

The study encompasses five measured constructs: Perceived quality (PQ), Altruistic value (AV), Relationship quality (RQ), Brand equity (BE), and electronic Word-of-Mouth (eWoM).

Moreover, **Table 2** presents the reliability of the applied scales, considering the values of factor loadings, Average Variance Extracted (AVE), and Composite Reliability (CR). The results demonstrate that all scales meet the requirements, with Cronbach's alpha ranging from 0.812 to 0.953, indicating high reliability of the constructs (with a required value of at least 0.7) [76]. Additionally, AVE ranges from 0.71 to 0.88, exceeding the required value of at least 0.5, and the AVE values of the variables exhibit good convergence. Furthermore, CR ranges from 0.83 to 0.97, surpassing the required value of at least 0.7) [78]. This ensures the convergence of variables with a high level of internal consistency and reliability.

The results of the Exploratory Factor Analysis (EFA) reveal that all factor loading values exceed 0.5, meeting the required criteria. The Kaiser-Meyer-Olkin (KMO) coefficient is 0.923, falling within the acceptable range of 0.5 to 1, indicating that the sample size is suitable for factor analysis [79].

Table 2. Quality criteria and factor loadings

	Item	Factor loadings	Cronbach's alpha	AVE	CR
AV	AV1	0.799	0.953	0.88	0.97
	AV2	0.815			
	AV3	0.818			

	AV4	0.776			
PQ	PQ1	0.599	0.927	0.71	0.83
	PQ2	0.612			
	PQ3	0.608			
	PQ4	0.663			
	PQ5	0.581			
RQ	RQ1	0.692	0.922	0.81	0.94
	RQ2	0.719			
	RQ3	0.709			
	RQ4	0.679			
	RQ5	0.662			
BE	BE1	0.607	0.812	0.77	0.91
	BE2	0.710			
	BE3	0.751			
	BE4	0.709			
eWoM	eWoM1	0.649	0.928	0.82	0.85
	eWoM2	0.677			
	eWoM3	0.660			
KMO	0.923				

AVE: Average Variance Extracted; CR: Composite Reliability

Results of confirmatory factor analysis CFA

The results of the CFA in Research model indicate that chi-square divided by degrees of freedom (chi2/df) is ≤ 5 [80], TLI is ≥ 0.9, CFI is ≥ 0.9 [81], and RMSEA is ≤ 0.08 [82], all meeting the requirements as illustrated in **Table 3**. Therefore, the model fit indices suggest that model is appropriate.

Table 3. Results of Data Fit Assessment

Fit statistic	Value	Required value
chi2/df	2.89543	<=5
RMSEA	0.0436	<=0.08
CFI	0.946	>=0.9
TLI	0.969	>=0.9

Testing the theoretical model and hypothesis

The results presented in **Table 4** indicate that AV, PQ, and BE significantly positively impact eWoM with the value of coefficients 0.495, 0.465, and 0.438, respectively. However, the statistical results indicated that Relationship quality does not significantly affect eWoM, as the p-values were not statistically significant. In other words, hypothesis 4 is rejected. Additionally, relationship quality (RQ) and perceived quality (PQ) have both direct and positive effects on brand equity (BE). These effects are statistically significant with p-values ≤ 0.001 (***). Therefore, all hypotheses are accepted

but the H4 one. The result indicated that BE partially mediates the impact of PQ on eWoM and fully mediates the impact of RQ on eWoM.

Table 4. The results of the Structural Equation Modeling (SEM) analysis

Pathway	Coefficient	P-value	95% CI	Decision on hypothesis
AV->WoM	0.495	***	(0.39; 0.60)	Accepted
PQ->WoM	0.465	***	(0.33; 0.60)	Accepted
PQ->BE	0.456	***	(0.32; 0.60)	Accepted
RQ->WoM	0.085	0.912	(-0.06; 0.23)	Rejected
RQ->BE	0.516	***	(0.38; 0.66)	Accepted
BE->WoM	0.438	***	(0.33; 0.55)	Accepted

**** Correlation is significant at the 0.001 level*

DISCUSSION

The study's conclusions align with previous research, indicating that PV and RQ positively influence Brand equity [44, 83]. These results are consistent with previous research suggesting that BE positively influences behavioral intentions in the context of green products [48, 84, 85]. The study's results reveal that eWoM among customers who have experience with green products is directly influenced by AV and BE. Moreover, eWoM is indirectly impacted by PQ and RQ via BE. Hence, it is noteworthy that both BE and AV play significant roles in enhancing eWoM among customers utilizing green products. AV may have a direct and positive effect on eWoM because it reflects customers' intrinsic motivations to share information and opinions about products or brands without any expectation of reward [86]. Altruism often involves selfless behavior driven by a desire to help others or contribute to a greater cause. In the context of green products, customers who prioritize environmental and social values may feel compelled to share their positive experiences and recommendations with others, leading to direct eWoM behaviors [87, 88]. These findings contribute to existing theories by investigating the case of green product users in Hanoi city, where BE is influenced not only by factors like Perceived quality, Relationship quality, and Customer loyalty [50, 55, 56] but also by AV.

Several reasons could explain why RQ does not have a direct impact on eWoM but instead influences eWoM fully through Brand equity - the mediating variable, while AV has a direct and positive effect on eWoM. Firstly, customers may perceive the quality of their relationship with a brand as important, but this sentiment may not directly translate into eWoM behavior. Instead, it may influence eWoM indirectly through factors like trust, satisfaction, or loyalty, which in turn affect BE and subsequently eWoM. Secondly, customers engage in eWoM for various reasons, including personal satisfaction, social validation, or altruistic motives. RQ might not directly align with these motivations for all customers. Some individuals may prioritize other factors such as product performance or social influence over their relationship with the brand when engaging in eWoM. Overall, the absence of a direct impact of RQ on eWoM highlights the complexity of consumer behavior and the multifaceted nature of eWoM formation.

Table 6. Summary about hypotheses in the research model

Hypothesis	Conclusion
H1: Altruistic value has a positive impact on electronic Word-of-Mouth.	Accepted
H2: Perceived quality has a positive impact on electronic Word-of-Mouth.	Accepted
H3: Perceived quality has a positive impact on Brand Equity.	Accepted
H4: Relationship quality has a positive impact on electronic Word-of-Mouth.	Rejected
H5: Relationship quality has a positive impact on Brand Equity.	Accepted
H6: Brand equity has a positive impact on electronic Word-of-Mouth.	Accepted
H7: Brand Equity plays a mediating role in the relationship between Perceived quality and electronic Word-of-Mouth.	Accepted
H8: Brand equity plays a mediating role in the relationship between Relationship quality and electronic Word-of-Mouth.	Accepted

According to the results, organizations manufacturing eco-friendly products can consider implementing the following actionable measures to enhance and foster eWoM among their customers.

Investing in Brand Building: Considering the importance of BE in boosting eWoM, companies should allocate resources to brand-building endeavors. Establishing a robust and identifiable brand image is linked with sustainability and social accountability. Additionally, maintaining uniformity in communication and branding across various channels can enhance BE. According to the ABC theory, external contextual factors (C), such as branding efforts, can influence individual attitudes (A) toward a product or service. By supporting in brand-building activeness such as advertising, public relations, and social media presence, companies can shape consumer perceptions of their brand positively [17]. This, in turn, can lead to more favorable attitudes (A) toward the brand and its offerings. Pro-environmental attitude has been verified as one of the essential predictors of pro-environment behavior [89]. Hence, customers may be more inclined to engage in positive eWoM behavior (B) such as recommending the brand to others or sharing their experiences online. Therefore, investing in brand-building efforts can evoke eWoM by influencing consumer attitudes through external contextual factors, as outlined in the ABC theory of behavior.

Perceived Quality Improvement: Improving PQ can trigger eWoM in several ways. Firstly, when customers perceive an enhancement in product quality, they are more likely to have positive experiences, leading them to share their satisfaction with others online. Secondly, positive eWoM often stems from consumers' desire to recommend products or services that they believe offer high quality, as this reflects positively on their judgment and credibility. Additionally, an improvement in PQ can generate buzz and excitement among consumers, prompting them to share their excitement and recommendations with their social networks. Moreover, relating to the ABC theory of behavior[17], external contextual factors (C) such as the perceived quality improvement of a product or service can influence individual attitudes (A) toward that product or service. These attitudes, in turn, shape behavior (B), such as engaging in eWoM. Therefore, PQ improvement can be seen as an external contextual factor (C) that has the potential to influence individuals' attitudes (A) toward the product positively, leading to increased participation in eWoM behavior (B). Overall, by enhancing customers' PQ, brands can improve trust and satisfaction among the loyal customer segment [90], consequently, they can disseminate positive brand messages within the user community.

Incorporating Sustainability Initiatives: When an organization takes that step, it can evoke eWoM in alignment with the UTAUT theory through several mechanisms [10]. Firstly, when customers

perceive that a company is committed to sustainability, it may enhance their perceptions of the company's performance expectancy regarding environmental responsibility, leading to a positive attitude toward using the company's products or services. Secondly, the effort expectancy associated with engaging in eWoM may decrease if customers believe that endorsing sustainable brands aligns with their values and requires minimal effort. Moreover, social influence can play a role, as customers may feel compelled to share their experiences with sustainable brands to conform to social norms or to influence others positively. Finally, facilitating conditions, such as easy access to online platforms for sharing eWoM, may further encourage customers to engage in eWoM about companies with robust sustainability initiatives. Additionally, when customers see a company taking meaningful action to reduce its environmental impact, they may feel motivated to follow suit and make similar changes in their consumption habits. Individuals who hold favorable attitudes are more inclined to engage with environmental organizations [91].

Implementing educational campaigns: Launching educational campaigns to educate consumers about the environmental advantages of using green products can be beneficial. These campaigns aim to enlighten customers about how their purchasing decisions contribute positively to environmental sustainability. Well-informed customers are more likely to advocate for green products, as heightened environmental awareness correlates with increased engagement in green product behaviors [1, 92]. Previous research supports this notion, indicating that environmentally conscious consumers prioritize the consumption of green products [93, 94]. By raising awareness and disseminating information, customers may gain a deeper comprehension of environmental issues and feel motivated to endorse environmentally friendly practices.

Monitoring and Engaging in Social Media: In line with the UTAUT, by closely observing conversations and discussions related to green products on social media, organizations can gain valuable insights into consumer perceptions, preferences, and concerns. This proactive approach allows organizations to identify opportunities to address customer needs and concerns promptly. Moreover, engaging with customers on social media platforms facilitates community sense and trust, encouraging customers to share their positive experiences with green products with their social networks. As per the UTAUT framework, facilitating conditions, such as providing user-friendly and accessible platforms for communication, can enhance consumers' intention to engage in eWoM behavior. It aligns with previous research in which brands integrate social media platforms and mobile devices to create flexible and effective communication with their customers [95]. Therefore, actively monitoring and engaging in social media aligns with the UTAUT principles by creating conducive conditions for encouraging eWoM among consumers.

Moreover, this action can evoke positive emotions, such as pride and admiration, among customers who align with the company's values. This emotional connection strengthens the bond between the customer and the company, fostering loyalty and enhancing their intrinsic motivation for its products and services and related attitudes for engaging in pro-environment behavior such as eWoM green products [96].

Making Digital Advertising More Entertaining and Informative: Entertainment and informativeness represent separate attributes of eWoM, both shaping online consumer behavior. They should not be viewed as opposing ends of a spectrum but rather as complementary factors with unique influences [97, 98]. In the conceptual model regarding attitude toward online advertising, Ducoffe [99] outlined four perceptual factors (entertainment, informativeness, irritation, and value) that precede the establishment of attitude toward digital advertising. Previous research has indicated that the value of entertainment and the informativeness of digital advertising could interact positively with consumers' intentions to purchase the advertised products [100]. In the realm of eWOM, the entertainment factor holds significant sway over consumer reactions to digital messages. Researchers recommended that eWOM messages should be entertaining and enjoyable to enhance

the likelihood of individuals sharing or forwarding them to others [101, 102]. Indeed, captivating and emotionally resonant content stands as a crucial element in the composition of many viral eWOM messages [103, 104]. By focusing on AV, BE, and their interactions, organizations can create a strong foundation for positive eWoM among customers who have experiences with green products. These strategies align with consumers' values, foster trust, and reinforce the brand's commitment to sustainability, ultimately driving advocacy and eWoM promotion.

This study has some limitations because it is cross-sectional research. Therefore, the causal effect among factors was not explored. Besides, this study was conducted in the capital of Vietnam only. However, Hanoi is the country's economic, cultural, and political center. Hence, the implications here might be applied in other regions with additional changes to adapt the context as well. Further studies might focus on comparing green consumption among different regions/countries.

CONCLUSION

This study examined the direct and indirect factors affecting eWoM among customers using green products within the capital of Vietnam. In conclusion, this study underscores the pivotal role of BE and AV in shaping eWoM among customers with green product experiences. The study reveals that eWoM is directly influenced by the AV associated with environmentally responsible choices and the BE that a green product reflects. Additionally, the study demonstrates that RQ does not directly impact eWoM but significantly indirectly affects it through brand equity as the mediator. These findings highlight the importance of fostering strong BE and emphasizing AV in green product marketing strategies to encourage and amplify eWoM among environmentally conscious consumers. As a result, several marketing recommendations were proposed for organizations producing green products.

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