



Research article

The mediating role of electronic word-of-mouth in the relationship between CSR initiative and consumer satisfaction

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ABSTRACT

The importance of CSR in today's business environment cannot be ignored, especially more and more enterprises realize that when consumers perceive CSR, it will affect consumer behavior and then affect corporate efficiency and reputation. With the widespread application of social media, corporate social responsibility behaviors are easy to be participated and discussed by consumers on the Internet, forming electronic word-of-mouth. Therefore, this paper discusses the influence of electronic word-of-mouth between CSR and consumer satisfaction, taking China's largest Internet enterprise Tencent and its consumers and users as the research object. The overall purpose of this study is to explore the mediating role of electronic word-of-mouth in CSR and consumer satisfaction. This study uses Stimulus-Organism-Response (SOR) theory as the theoretical framework to explain the relationship between CSR initiatives, eWOM and consumer satisfaction. Using the quantitative method of questionnaire survey, taking China's enterprise Tencent as an example, a total of 490 valid questionnaires from Tencent WeChat users from four different levels of cities were received. The PLS-SEM model was used to deeply study the impact of CSR on consumer satisfaction and electronic word-of-mouth. The study found that philanthropic responsibility has a significant impact on consumer satisfaction, but environmental responsibility has no significant impact on satisfaction. At the same time, electronic word-of-mouth plays a key mediating role between the dimension of charitable responsibility and consumer satisfaction, but there is no mediating relationship between the dimension of environmental responsibility and consumer satisfaction. This study is beneficial to other enterprises in the formulation and planning of social responsibility, helps enterprises better understand consumer demands under different CSR dimensions, and provides a useful reference for the formulation of more accurate CSR strategies.

1. Introduction

Under the impetus of informatization and globalization, there has been a fundamental change in how consumers acquire and share information. Electronic Word of Mouth (eWOM), as an emerging form of information dissemination, has become a key factor influencing consumer decision-making. eWOM not only rapidly disseminates information about company products and services but also significantly impacts consumer purchasing behavior and satisfaction. With the widespread adoption of social media, the influence of

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eWOM is becoming increasingly undeniable.

Corporate Social Responsibility (CSR), as an integral component of corporate operations, has garnered attention from various stakeholders. Among them, consumers' perception of CSR will influence their purchasing intentions and behaviors [1]. By fulfilling social responsibilities, businesses not only enhance their corporate image but also strengthen consumer trust and loyalty, thereby boosting consumer satisfaction [2,3]. When a company engages in actions that violate corporate ethics, consumer satisfaction and trust may decrease, potentially impacting consumer trust in the entire industry. For instance, in the 2008 "melamine" milk powder incident, unscrupulous merchants added toxic melamine to infant formula, resulting in developmental and health issues in infants consuming the affected brand. Media exposure not only led to a sharp decline in domestic dairy product sales but also eroded Chinese consumers' trust in domestic dairy products. However, existing research on the relationship between CSR and consumer satisfaction still has several significant gaps.

Firstly, the impact of Corporate Social Responsibility (CSR) activities on consumer satisfaction yields inconsistent results. While most studies demonstrate a positive effect of CSR activities on consumer satisfaction [2,4,5], not all types of CSR activities exhibit a positive impact on consumer satisfaction [6–8]. Businesses can directly and actively influence customer satisfaction through the proactive fulfillment of community responsibility, environmental responsibility, and ethical responsibility [3]. Additionally, companies can enhance their corporate image through CSR activities, consequently increasing consumer satisfaction and loyalty [9]. However, there are dissenting voices. Xanthopoulou concluded from semi-structured interviews with 67 customers of Greek banks that CSR in Greek banks does not significantly affect customer satisfaction [8]. Al-Haddad et al., after analyzing 250 consumer questionnaires, found that the impact of charitable responsibility on consumer behavior is not significant [7].

Secondly, consumers vary in their perception and understanding of Corporate Social Responsibility (CSR). Although consumers' perception of CSR has a direct positive impact on satisfaction and repeat purchase intentions [10,11], according to Carroll's pyramid model, consumers' perceptions of a company's economic and legal responsibilities may exhibit an "information gap." This means consumers may not accurately understand a company's actual operations and income, including whether the company has violated laws in its actual business practices. Consumers may only become aware of such situations when they are exposed by the media. Differences in consumer awareness of CSR activities may lead to varying impacts on their overall evaluation and satisfaction with the company. Shen [12] pointed out that "consumers find it difficult to understand a company's responsibility to its employees, as well as management of the company and its suppliers, which consumers are less concerned about." Ma [13] stated that questions that cannot be truthfully answered should not be included in research and questionnaires. Therefore, this study eliminated the social responsibilities of companies that consumers have insufficient understanding of, such as responsibilities to employees, corporate governance, economic management, and legal responsibilities, and focused only on charitable responsibility and environmental responsibility.

Some companies have garnered praise and recognition from consumers by diligently fulfilling their social responsibilities. A notable example occurred in July 2021, when the well-known Chinese sports brand, Anta, incurred losses of 200 million yuan during floods in China, yet promptly donated goods worth 50 million yuan to the disaster-stricken areas. Through analysis of the entire network using sentiment analysis software, it was found that this activity was predominantly led by Weibo. Prior to July 21, Anta's official Weibo had an average daily visit of 181, with a relatively low level of attention. Following the release of the donation Weibo by

"Hongxing Erke" incident public opinion trend chart

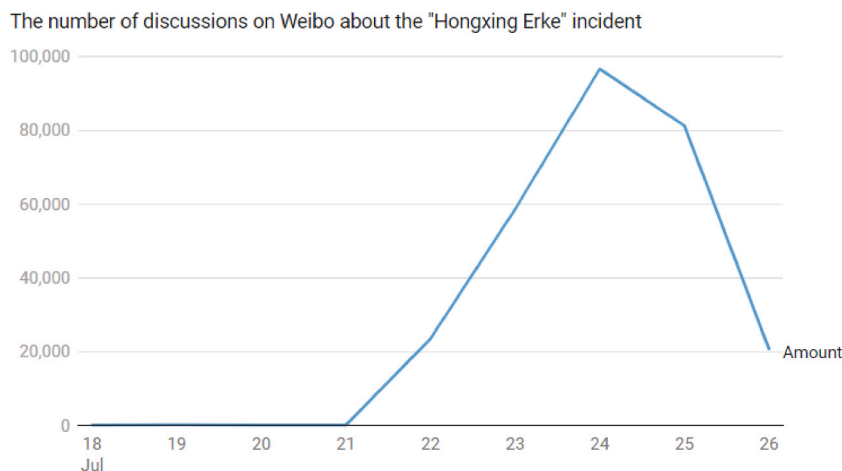


Fig. 1. "Hongxing Erke" incident public opinion trend chart.

Noted:

n means sample size.

N means elements of sampling formula to calculate the sample size population, in this study was 1,327,000,000.

e means error of sampling, in this study was 5 %.

So the sample size were 400 respondents, on 0.05 margin of error, 95 % confidence interval.

the official account, there was a peak in monitoring on the same day, totaling 96,662 times, which was over 500 times higher than the previous volume of public opinion (Fig. 1). On July 24th and 25th alone in 2021, discussions about the "Anta" incident on Weibo reached 187,240 times, accounting for 81 % of the total network discussion (Fig. 2). This event garnered exposure on Weibo, accumulating 9.41 million likes and 286,000 comments, subsequently leading to a significant increase in consumer purchases. Notably, within just one day, the cumulative online sales soared to 100 million yuan. Simultaneously, following consumers' "crazy" purchases of the product, satisfaction comments and positive reviews for the brand on major live streaming platforms and online trading platforms also experienced rapid growth. In the 2022 China Customer Satisfaction Index Sportswear Series rankings published by Chnbrand, Anta jumped to seventh place in customer satisfaction rankings for that year, a leap of 5 places compared to 2021 (Fig. 3), making it difficult not to associate this result with the charity event that sparked word-of-mouth growth. Therefore, many industry practitioners and researchers have paid more attention to the relevant research on the impact of CSR activities on consumer satisfaction. In particular, electronic word-of-mouth may play a complex role in this context. Hence, there is a need to systematically explore the mediating role of electronic word-of-mouth in the relationship between CSR and consumer satisfaction to gain a deeper understanding.

Finally, in earlier methodological approaches, the majority of CSR investigations relied on experimental frameworks aimed at assessing consumer perceptions of social responsibility practices and their impact on consumer reactions [15,16]. In these experimental endeavors, researchers introduced hypothetical brands and social responsibility practices to participants and subsequently gauged their reactions. [70] contend that the responses of actual consumers, well-acquainted with tangible CSR practices and brands, might deviate from those observed in controlled experiments. Thus, this study adopted Tencent as an illustrative case for examination. Tencent, a prominent entity in China, boasts a product portfolio including "QQ, WeChat, Tencent Video, Tencent Music, etc.," with widespread recognition among Chinese consumers. Additionally, Tencent stands out as a leading enterprise in the Chinese IT sector, championing CSR principles. Employing a tangible, renowned company as the focal point enhances the scientific rigor and credibility of the research, carrying significant practical implications. In 2022, Tencent won the titles of "Model Responsible Enterprise of the Year" and "Outstanding Responsible Enterprise of the Year" by ranking first in the "Southern Weekend China Corporate Social Responsibility List (2021)" [17]. This is the third time Tencent has topped the list. On December 10, 2023, Tencent was selected into the top ten "China ESG Model" companies [18]. Given Tencent's emblematic role in the Chinese corporate CSR landscape, this research centers on Tencent and its consumers. By leveraging Tencent as a case study, the investigation aims to scrutinize the nuanced impact of CSR initiatives on consumer satisfaction, with a focused examination on the mediating role played by electronic word-of-mouth in shaping this dynamic relationship.

To better understand the mediating role of electronic word-of-mouth (eWOM) between corporate social responsibility (CSR) activities and consumer satisfaction, this study introduces the Stimulus-Organism-Response (SOR) theory. The SOR theory, first proposed by Mehrabian and Russell in 1974, is primarily used to explain how external environmental stimuli influence individuals' behavior responses through their internal states. Humans are organisms that generate affective and psychological factors, as well as moods, emotions, or attitudes, in response to stimuli; thus, the SOR model has been expanded [19]. In marketing, many studies are based on the S-O-R theory and analyze customers' internal states and external reactions [20]. In the context of this research, philanthropic responsibility and environmental responsibility serve as the external stimuli. These CSR activities influence the internal states of consumers, represented by their perceptions and attitudes formed through eWOM. The subsequent consumer responses are reflected in

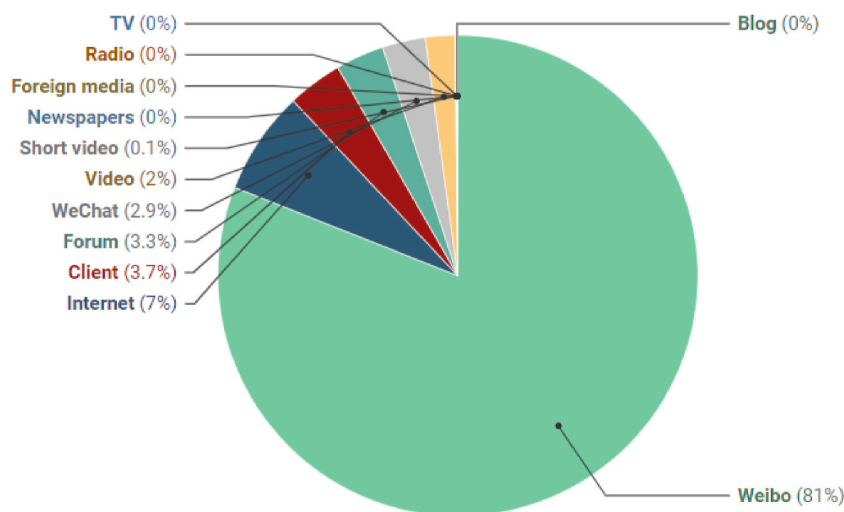


Fig. 2. Discussion status of the "Hongxing Erke" incident on the entire network on July 24 and 25, 2021.

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Chnbrand
2022年中国顾客满意度指数SM (C-CSI[®])
运动鞋满意度排行榜

(基于100分制)

品牌上榜条件是“未提示提及率≥7%”

品牌	2022年C-CSI得分	排名	变化
安踏	85.3	1	+2
耐克	84.8	2	-1
阿迪达斯	84.6	3	-1
李宁	84.2	4	+5
匹克	84.1	5	-
特步	82.4	6	-
鸿星尔克	81.0	7	+5
斯凯奇	79.1	8	new
361°	77.6	9	+4
新百伦	76.1	10	-6
回力	72.3	11	+3
斐乐	71.0	12	new
乔丹	68.6	13	-3
万斯	68.0	14	+2
彪马	57.4	15	-
匡威	56.8	16	-5
行业均值	80.5		

1. 资料来源：Chnbrand 2022年中国顾客满意度指数SM (C-CSI[®])

2. 事先未经Chnbrand明确书面同意，禁止将本图表信息或研究结果用于广告或促销

Fig. 3. 2022 C-CSI sports shoe satisfaction ranking [14].

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their levels of satisfaction.

Based on the theoretical framework provided, the main objectives of this study are as follows.

- To examine the impact of Tencent’s philanthropic and environmental CSR initiatives on consumer satisfaction.
- To examine the impact of Tencent’s philanthropic and environmental CSR initiatives, as well as economic factors, on electronic word-of-mouth (eWOM) through social media.
- To examine the impact of eWOM on consumer satisfaction.
- To determine the mediating effects of eWOM in the relationship between CSR initiatives (philanthropic and environmental) and consumer satisfaction.

These objectives will be addressed through a case study of Tencent, focusing on its philanthropic and environmental CSR initiatives in the context of Chinese internet companies. The study will investigate how these CSR initiatives influence consumer satisfaction directly and indirectly through eWOM, thus contributing to a deeper understanding of the dynamics between CSR, eWOM, and

consumer satisfaction in the Chinese internet industry.

The innovation of this study lies in the introduction of electronic word-of-mouth (eWOM) as a mediating variable, systematically exploring its role in the mechanism between corporate social responsibility (CSR) behavior and consumer satisfaction. Through the construction of a theoretical model and empirical analysis, this study not only delves into the analysis of consumers' perception differences regarding CSR but also reveals the mediating role of eWOM in this process. Utilizing real brand cases for empirical research will offer more practical theoretical foundations and guidance for CSR practices and marketing strategies of enterprises. This not only enriches theoretical research in the fields of CSR and consumer behavior but also holds profound implications for the practical operational strategies of enterprises.

This study holds significant practical, theoretical, and methodological implications. Practically, the examination of Tencent's social responsibility and online word-of-mouth influence on consumer brand satisfaction can provide valuable insights for other companies facing similar situations, aiding in understanding the relationship among these factors. The theoretical significance lies in shedding light on the often overlooked role of online word-of-mouth in the relationship between corporate social responsibility behavior and consumer brand satisfaction, as well as analyzing the mechanisms among them. Additionally, this study extends the Stimulus-Organism-Response (SOR) theory by investigating the impacts of corporate social responsibility and electronic word-of-mouth on consumers, thereby enriching the relevant literature. Methodologically, focusing on Tencent, China's largest internet company, and its actual consumers adds depth to the research. Surveys were distributed and collected among consumers in different urban areas, and continuous rating scales were utilized as survey tools. Subsequently, Smart-PLS software was employed for data analysis, enhancing the persuasiveness of the study findings.

2. Literature review

2.1. Corporate social responsibility initiatives and eWOM

Corporate Social Responsibility (CSR) initiatives are increasingly recognized by scholars as strategic tools for enhancing corporate reputation and fostering consumer trust. These initiatives elevate the competitiveness of businesses by improving corporate image, enhancing brand loyalty, and promoting sustainable development. In the era of information technology, Electronic Word of Mouth (eWOM) emerges as a pivotal form of consumer communication, drawing considerable attention from both businesses and academia. Current research largely indicates that CSR initiatives can significantly influence the generation and dissemination of eWOM.

Firstly, CSR initiatives stimulate the generation of positive electronic word of mouth (eWOM) by enhancing the social image and reputation of businesses. However, most relevant studies have treated CSR initiatives as a whole entity, neglecting to explore their impacts on different stakeholders. Kang and Hustvedt [21] pointed out that when companies actively engage in CSR activities, consumers are more inclined to share positive brand information on social media platforms. This positive eWOM not only aids in attracting new customers but also strengthens the brand loyalty of existing ones. Additionally, when companies utilize social media or engage in CSR promotion and disclosure on social networking sites, it can positively influence the public's eWOM regarding the brand [22,23].

Furthermore, CSR initiatives can increase consumers' emotional attachment to the brand, thus fostering the generation of positive eWOM. Customers' awareness of corporate social responsibility positively influences emotional brand attachment, thereby increasing customer engagement and citizenship behavior [24]. Research by Mohammed and Al-Swidi [25] found that consumers exhibit stronger emotional attachment to companies that excel in social responsibility, and they are willing to share their positive experiences online and support the company's actions.

However, the impact of CSR initiatives on eWOM is not always positive. Zhang et al. [17] noted that if consumers perceive a company's CSR activities merely as marketing tactics or "greenwashing," it may trigger negative electronic word of mouth. This negative eWOM not only damages the corporate image but may also lead to consumer resentment towards the brand.

Lastly, the mediating role of eWOM in CSR research has gained increasing attention, but currently, no scholars have pointed out the role of eWOM in the relationship between CSR and consumer satisfaction. Corporate Social Responsibility mediates the relationship between brand personality and brand image, while Electronic Word of Mouth (eWOM) reinforces this indirect effect [26]. The dissemination effect of CSR initiatives largely depends on the mediating role of eWOM. Research by Wei et al. [27] indicates that consumers discussing a company's CSR activities on social media and online communities can amplify the impact of these activities, enhancing the company's visibility and social acceptance. CSR information disseminated through eWOM can enhance consumer loyalty.

In summary, there exists a complex and diverse interactive relationship between CSR initiatives and eWOM. Currently, most studies seldom further discuss the specific mechanisms through which different types of CSR initiatives affect eWOM. Additionally, no scholars have pointed out the role of eWOM in the relationship between CSR and consumer satisfaction. Therefore, the hypotheses are as follows.

H2a. There is a significant relationship between CSR initiatives of philanthropy and eWOM.

H2b. There is a significant relationship between CSR initiatives of environment and eWOM.

H4a. From the perspective of consumers, eWOM has a mediating effect between corporate social responsibility initiatives of philanthropy and consumer satisfaction.

H4b. From the perspective of consumers, eWOM has a mediating effect between corporate social responsibility initiatives of the environment and consumer satisfaction.

2.2. eWOM and consumer satisfaction

The role of electronic word-of-mouth (eWOM) in consumer satisfaction has gradually become a research hotspot in both academia and industry. As a form of information exchange among consumers, eWOM profoundly influences consumer purchasing decisions and brand attitudes through online reviews, social media posts, blogs, and other channels. Most studies indicate that eWOM has a significant impact on consumer satisfaction. Whether positive or negative, eWOM can shape consumers' emotional and cognitive responses.

Firstly, positive eWOM can significantly enhance consumer satisfaction. Serra-Cantalops et al. [28] pointed out that when consumers read positive reviews and recommendations from other users, their expectations for the product or service increase accordingly. If the actual post-purchase experience meets or exceeds these expectations, higher satisfaction is achieved. This positive emotional response not only improves consumers' favorable perceptions of the brand but also fosters a virtuous cycle of word-of-mouth dissemination.

Secondly, negative eWOM also has a significant impact on consumer satisfaction. When consumers read negative reviews before making a purchase, they tend to lower their expectations for the product, leading to disappointment and dissatisfaction during actual use. This negative sentiment not only affects individual purchasing decisions but can also propagate through negative word-of-mouth, causing panic buying and brand switching. This, in turn, further decreases the satisfaction and purchase intentions of other potential consumers [28].

Additionally, the impact of eWOM is moderated by the credibility and quantity of the information. Ngarmwongnoi et al. [29] suggested that when eWOM comes from sources perceived as trustworthy by consumers, its influence on consumer satisfaction is more pronounced. Consumers are more likely to trust the opinions of reviewers with similar backgrounds or needs, leading them to rely more heavily on this eWOM information during the decision-making process. Furthermore, a higher volume of eWOM can enhance consumers' satisfaction with the brand.

However, the impact of eWOM on consumer satisfaction is not universally consistent. For experiential products, there is a positive correlation between eWOM and consumer satisfaction. Conversely, for search products, no significant relationship has been observed (Srivastava & Sivaramakrishnan, 2020). Therefore, based on previous research, most scholars believe that eWOM has a positive effect on consumer satisfaction, but it is not absolute. Hence, the hypothesis is as follows.

H3. There is a significant relationship between eWOM and consumer satisfaction.

2.3. Corporate social responsibility initiatives and consumer satisfaction

Corporate Social Responsibility (CSR) initiatives have become a key focus for companies aiming to enhance their brand image and consumer satisfaction. In recent years, as consumers have become more aware of corporate social responsibility, an increasing number of studies have examined how CSR affects consumer satisfaction through various mechanisms.

Firstly, most studies indicate that CSR initiatives can directly enhance consumer satisfaction. Bello et al. [10] pointed out that corporate CSR activities can strengthen consumer trust and identification with the company, thereby increasing their satisfaction with the company's products and services, which in turn positively affects repurchase intentions. When consumers perceive a company's positive contributions to society and the environment, they are more likely to have a positive emotional response towards that company. This emotional response further translates into high satisfaction. If implemented at the right time and with appropriate resources, CSR initiatives can positively influence consumer reactions by activating dual attribution [30].

Secondly, CSR initiatives can improve satisfaction by enhancing consumers' awareness. When consumers are aware of a company's social responsibility initiatives, their attitudes and purchase intentions are positively influenced by these CSR efforts. If consumers have low awareness of the social issues addressed by the company's CSR plans, it suggests that companies may need to educate consumers so they can better understand the context of the communicated CSR initiatives [31].

However, Kraus et al. [32] conducted a systematic review of the latest literature from the past twenty years (2000–2020) and explored the impact of corporate social responsibility on companies and its influence on consumer purchasing behavior. They found that despite the increasing number of publications in this field, the results and definitions remain somewhat contradictory and fragmented. Most publications assume linear and rational decision-making and lack comparative studies on contextual factors such as culture. Additionally, some scholars have found that not all types of CSR initiatives positively affect consumer satisfaction. For instance, Nickerson et al. [33] noted that CSR initiatives focused on philanthropy might actually harm sales.

In summary, while most studies indicate that CSR initiatives have multiple direct and indirect impacts on consumer satisfaction, the specific outcomes are inconsistent. The mechanisms by which different types of CSR activities affect consumer satisfaction are not yet clearly understood. Therefore, the hypotheses are as follows.

H1a. There is a significant relationship between CSR initiatives of philanthropy and consumer satisfaction.

H1b. There is a significant relationship between CSR initiatives of the environment and consumer satisfaction.

2.4. Stimulus-organism-response (SOR) theory

The Stimulus-Organism-Response (S-O-R) theoretical model was originally applied in environmental psychology [34]. The stimulus-organism-response theoretical model believes that the path of people's behavior is: external stimulus-cognitive/emotional

mediation-response. This model points out that all individual behavioral responses or psychological changes are stimulated by the external environment, and individuals will process the stimuli inductively, adjust psychological interactions, and produce appropriate responses [35]. Kotler believed that stimulus is the fundamental reason for a person to stimulate a certain behavior [36]. The SOR model describes the connection between stimuli (such as external factors) that affect an organism (human cognition and emotion) and human responses to stimuli (such as behavior). Stimulus (S) refers to input, which is an external factor related to the environment. Organism (O) refers to an individual's internal state, which is a structure between the stimulus and the final response [37], such as individual cognition, psychological activities and emotions [38]. Reaction (R) refers to people's actions and reactions to organisms [39].

Based on previous applications of the Stimulus-Organism-Response (SOR) theory in research, CSR initiatives are often considered stimuli that subsequently affect consumers' psychological states and emotional responses. Schill and Godefroit-Winkel [40] pointed out that when consumers are exposed to a company's CSR information, they seek more evaluations and feedback about the company through social media and online reviews. This eWOM information plays a crucial role in consumers' cognitive processes, helping them form attitudes and emotional responses towards the company.

Secondly, eWOM, as a behavior or performance, is often used in the SOR theory either as a stimulus or as an organism. When eWOM is viewed as a prerequisite or behavioral manifestation in research, it usually appears in the theory as a "stimulus". Yadav et al. [41] utilized the SOR theoretical framework to explain that eWOM, acting as a stimulus, has a significant impact on consumer engagement. But when eWOM is regarded as a possible intermediate condition, or a cognitive state and feeling in research, it usually appears as an "organism" in the theory. Fang [42] analyzed eWOM as a cognitive state (organism) in a study on eWOM reviews from social networking site users [42].

This study mainly explores the mediating mechanism of eWOM on the perceived CSR and consumer satisfaction. Companies take different measures in various areas of corporate social responsibility initiatives, thus affecting the content of eWOM on social media, and then consumers judge and perceive eWOM in terms of quality, quantity and credibility, thus affecting consumer satisfaction. This process can be likened to the "Stimulus-Organism-Response" (S-O-R) relationship. The S-O-R theory has been widely applied in retail, services, consumer behavior, and eWOM dissemination.

Within the S-O-R theoretical framework, this study selects different types of CSR initiatives as the "stimulus," eWOM as the "organism," and Consumer satisfaction as the "response." The theoretical framework is illustrated in Fig. 4.

3. Methodology

This study used a questionnaire approach in a quantitative study to test the above hypotheses. Details of the survey, including data collection and measurements, are as follows.

3.1. Frames and hypotheses

This framework is based on the SOR theoretical model (Fig. 5). The independent variables are philanthropic responsibility and environmental responsibility, and the mediating variable is eWOM. The dependent variable is consumer satisfaction. The aim is to examine whether there is a correlation between CSR initiatives, eWOM and consumer satisfaction from the consumer's perspective.

Based on previous studies, the following hypotheses are proposed.

H1a. : There is a significant relationship between CSR initiatives of philanthropy and consumer satisfaction.

H1b. : There is a significant relationship between CSR initiatives of environment and consumer satisfaction.

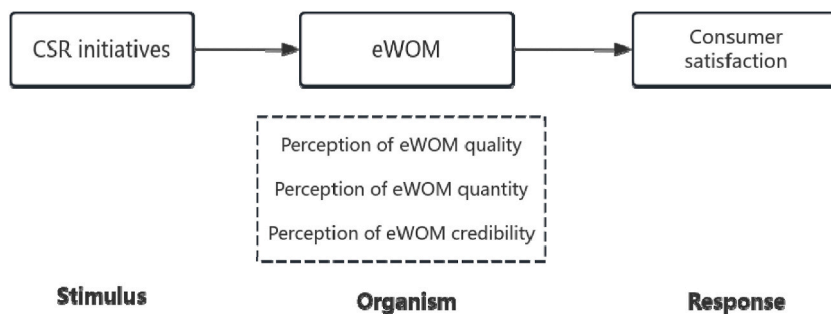


Fig. 4. Stimulus-organism-response (SOR) theory.

Noted:

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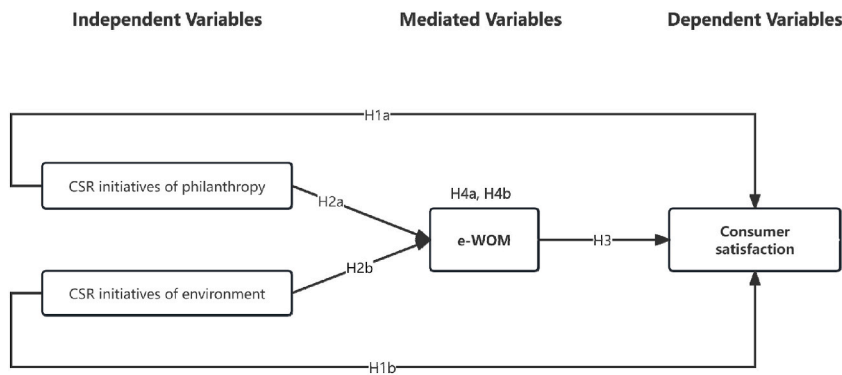


Fig. 5. Framework and hypotheses.

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H2a. : There is a significant relationship between CSR initiatives of philanthropy and eWOM.

H2b. There is a significant relationship between CSR initiatives of environment and eWOM.

H3. There is a significant relationship between eWOM and consumer satisfaction.

H4a. From the perspective of consumers, eWOM has a mediating effect between corporate social responsibility initiatives of philanthropy and consumer satisfaction.

H4b. : From the perspective of consumers, eWOM has a mediating effect between corporate social responsibility initiatives of environment and consumer satisfaction.

3.2. Data collection and the samples

Data collection was conducted through an online survey platform, Questionnaire Star. Questionnaire Star is a popular platform for collecting various types of surveys in China, specifically designed for scholars or professionals in enterprises. This online platform allows for the independent editing of questionnaires, distribution to specified demographics such as location, age, occupation, hobbies, etc. The distribution methods for the questionnaire include email, WeChat, website links, among others. Since our target audience is Tencent users, distributing the questionnaire via WeChat allows for precise identification of the sample population. As WeChat is one of Tencent’s products, users of WeChat can be considered Tencent users. Due to the large population of Tencent users, this study selected the cities of Shenzhen (first-tier), Zhengzhou (new first-tier), Taiyuan (second-third tier), and Kaifeng (fourth-fifth tier) based on the proportion of city profiles in Tencent user segmentation as the locations for questionnaire distribution. The age group targeted was over 18 years old, with experience using or consuming Tencent products or services. Although corporate social responsibility activities can be studied based on constructivist ontology and epistemology, our research is primarily based on realist ontology, which considers reality to be objective and definite. This study utilized a closed-ended online questionnaire to collect scientific data, adopting a positivist epistemological stance.

The total number of WeChat users is 1.327 billion. This study used Taro Yamane’s (2003) sampling formula to calculate the minimum sample size as 400 people (Fig. 6). This means that for this experiment, a minimum of 400 valid questionnaires is required to be considered scientifically rigorous.

Due to the large population of WeChat users, in order to make the experiment more scientifically rigorous, according to the WeChat user profiles released by the third-party data company Appgrowing in August 2022 (Fig. 7), the questionnaire survey will be conducted according to different city categories. The specific sampling process consists of four steps (Fig. 8)

$$n = \frac{N}{1+N(e)^2} \quad \longrightarrow \quad \frac{1,327,000,000}{1+1,327,000,000(0.05)^2} = 399.9$$

Fig. 6. Yamane’s([71]) sampling formula of Sample size.

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In the first stage, researchers used simple random sampling to divide each first-tier city, new first-tier city, second-third tier city, and fourth-fifth tier city into numerical categories. There are 4 first-tier cities, 15 new first-tier cities, 100 s-tier cities, and 218 fourth-fifth tier cities in China. Then, researchers assigned numbers to each level of city and divided them into four boxes. Finally, researchers randomly selected a number from each box; in other words, researchers randomly selected one city as a representative city from each level of city. Based on these processes, researchers selected 4 cities from 337 cities, namely Shenzhen, Zhengzhou, Taiyuan, and Kaifeng.

In the second stage, the same simple random sampling technique was used. Five administrative districts were randomly selected from each of the four selected cities.

Thirdly, based on the different proportions of user areas in the four types of cities, the required sample sizes for each city in the four cities were calculated, and then distributed evenly based on the five administrative districts selected for each city.

Finally, researchers used purposive sampling techniques to select eligible respondents from their respective areas.

This study use the special functions of the questionnaire platform to conduct precise delivery and promotion to users in designated administrative districts in designated cities, announcing that researchers were conducting an online survey on corporate social responsibility (CSR). If online users were interested, they could voluntarily click on the survey link to participate. After completing the survey, eligible and valid samples would be retained, and respondents would receive a 5 yuan electronic cash reward. Respondents were asked to use a 5-point Likert scale to rate Tencent’s CSR behavior, eWOM (electronic word-of-mouth) about Tencent on social media, and satisfaction with Tencent.

In the end, this study received 550 responses to the questionnaire. After data filtering, invalid questionnaires that did not meet the criteria were excluded, including those with more than 10 consecutive identical responses and those that provided incorrect answers to pre-set trap questions. This resulted in 490 valid questionnaires. Among them, 61 % were male. In terms of education level, the majority (over 75.6 %) had attended college (Table 1). In terms of income distribution, 230 people earned between 5001 and 10,000 yuan, accounting for 46.90 %, while 101 people earned over 10,000 yuan, accounting for 20.60 %. The sample population mostly belonged to the middle to high-income group, indicating a more objective understanding of corporate social responsibility among respondents. Stern pointed out the importance of focusing on individual capability dimensions in CSR research, including income status, indicating that these demographic variables could influence people’s attitudes toward CSR to varying degrees [43].

Regarding the distribution of time spent using Tencent products and services, there were a total of 291 respondents who had been using them for 3–5 years, accounting for 59.40 % (Table 1). In terms of the average frequency of using Tencent products and services in the past month, 255 respondents reported usage of 15 times or more, accounting for 52.0 %. In terms of the average frequency of using

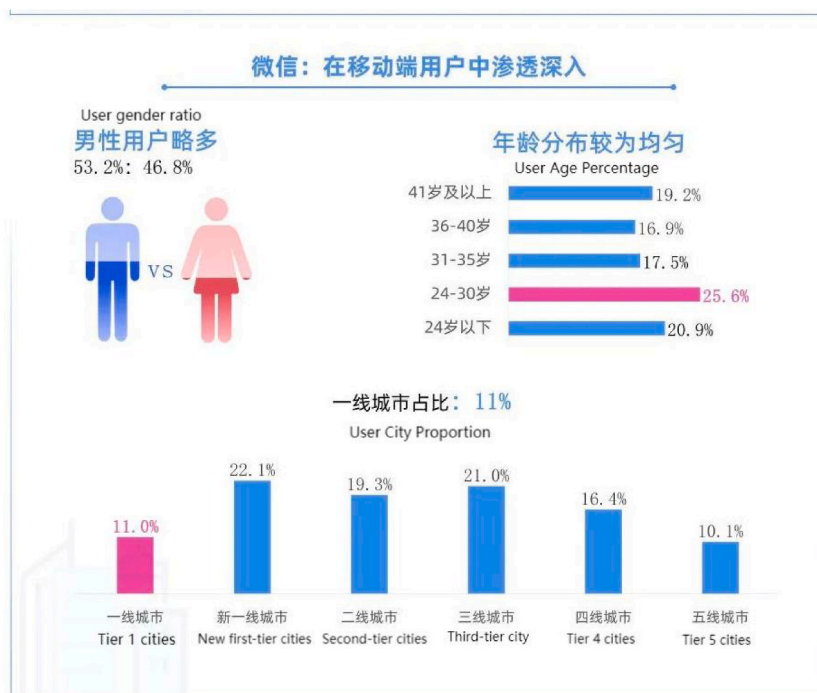


Fig. 7. WeChat user portraits (Appgrowing,2022).

Noted:

n means sample size.

N means elements of sampling formula to calculate the sample size population, in this study was 1,327,000,000.

e means error of sampling, in this study was 5 %.

So the sample size were 400 respondents, on 0.05 margin of error, 95 % confidence interval.

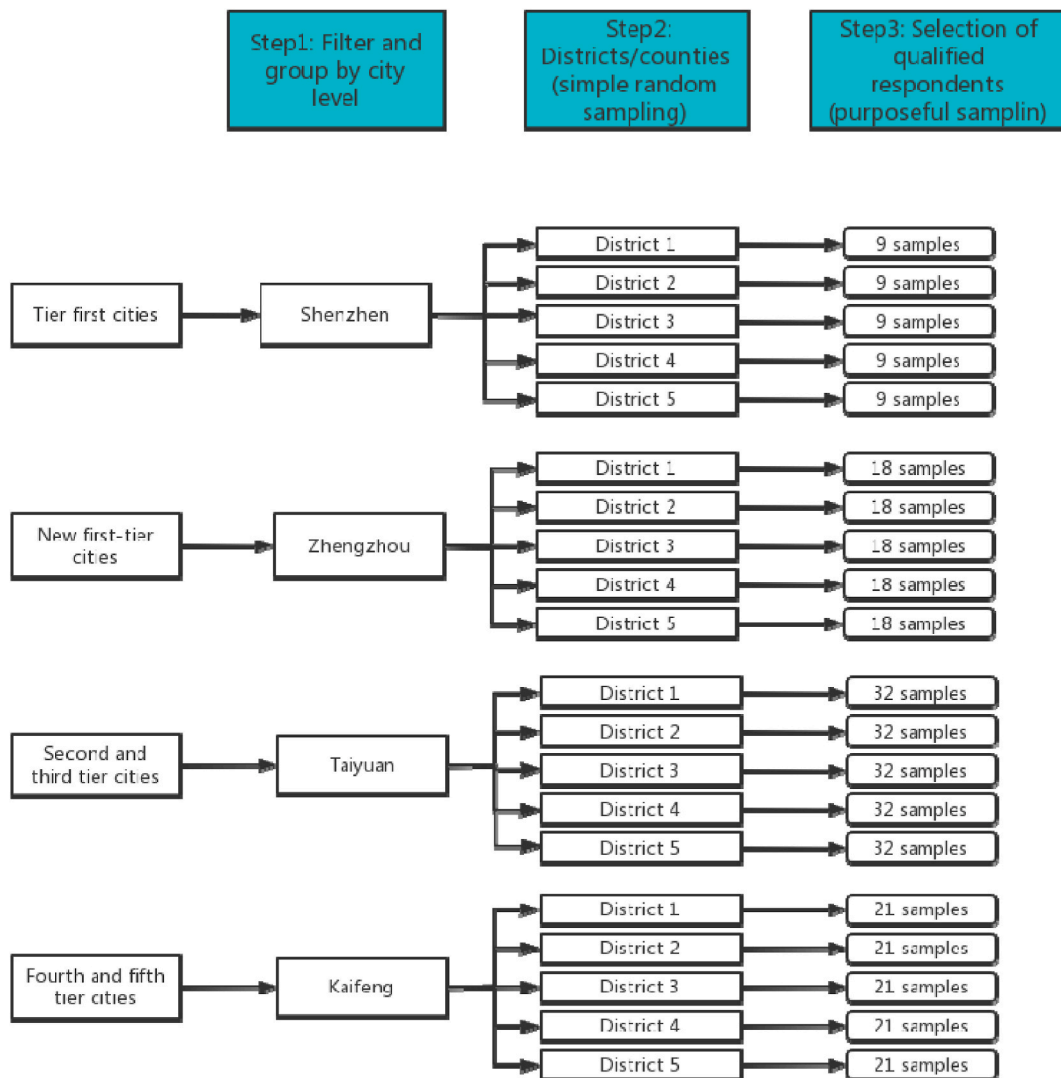


Fig. 8. Schematic diagram of sampling process.

Noted:

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So the sample size were 400 respondents, on 0.05 margin of error, 95 % confidence interval.

Tencent products and services in the past week, 193 respondents reported usage of 1.5–3 h or more, accounting for 43.3 %. From the data, it can be seen that users have a high frequency and long duration of Tencent product usage, indicating a high level of familiarity with the products.

3.3. Measurement

All measurement scales and items are listed in Appendix A. This study primarily measures corporate social responsibility (CSR) from the perspectives of philanthropic responsibility and environmental responsibility. This scale integrates research by Khan [44], the scale developed by Jin [45], and the work of Magdalena Öberseder et al. [46], combined with the characteristics of Tencent’s products and industry, to construct an indicator system of CSR. For example, when measuring Tencent’s philanthropic responsibility, respondents are asked in the questionnaire, "Tencent will allocate a portion of its profits to contribute to society." When measuring environmental responsibility, respondents are asked, "Tencent focuses on avoiding production activities that cause environmental pollution."

Regarding the measurement of eWOM, previous research has divided eWOM into three parts: "quality," "quantity," and "reliability."

Table 1
Participant demographics.

		Count	Percentage N %
Gender	male	299	61.0 %
	female	191	39.0 %
Age	18–22 Years old	67	13.7 %
	23–28 Years old	154	31.4 %
	29–34 Years old	159	32.4 %
	35–49 Years old	64	13.1 %
	more than 50 years	46	9.4 %
Living in the city	Shen zhen	54	11.0 %
	Zheng zhou	108	22.0 %
	Tai yuan	197	40.2 %
	Kai feng	131	26.7 %
Education level	Junior high school (including) and below	59	12.0 %
	High school or technical secondary school	62	12.7 %
	Undergraduate or junior college	208	42.4 %
	Graduate students (including) or above	161	32.9 %
Monthly income	Below 2000 CNY	53	10.8 %
	2000-5000 CNY (inclusive)	106	21.6 %
	5001-10000 CNY (inclusive)	230	46.9 %
	Over 10,000 CNY	101	20.6 %
Use Tencent's products and service time	Less than 1 year	37	7.6 %
	1–3 Years	110	22.4 %
	3–5 years (inclusive)	291	59.4 %
	More than 5 years	52	10.6 %
The average frequency of Tencent's products and services was used last month	1-5 Times	11	2.2 %
	6-10 Times	66	13.5 %
	11-15 Times	158	32.2 %
	More than 15 times	255	52.0 %
The average frequency of Tencent's products and services was used last week	Less than 0.5 h (inclusive)	19	3.9 %
	0.5–1 h (inclusive)	60	12.2 %
	1.5–3 h (inclusive)	193	39.4 %
	More than 3 h	218	44.5 %

The quality of eWOM is measured based on the scale developed by Park [47], totally set three questions (E1-E3), including "I think in social media, the evaluation quality of Tencent's products and services is very high." while Anastasei & Dospinescu [48] set three questions (E4-E6) as items to measure the quantity of word of mouth, including "I have told people on social media about Tencent more than I've told about other brand." Zainal et al. [49] set three questions (E7-E9) as items to measure the reliability of word of mouth, including "I think the reviews of Tencent's products and services are credible on social media."

Regarding the measurement of consumer satisfaction, the early scale adopts the five dimensions of satisfaction proposed by Zeithaml et al. [50], including "I think the reviews of Tencent's products and services are credible on social media." In the measurement scale of consumer satisfaction, Joudeh & Dandis [51] and Rivera et al. [52] integrated these factors from predecessors and proposed a total of four items to measure consumer satisfaction, such as "My choice of Tencent's products and services is wise." All measurement items use a 5-point rating scale, ranging from 1 (strongly disagree) to 5 (strongly agree). PLS-SEM is used to evaluate the structural model, particularly the direct relationships between philanthropic responsibility, environmental responsibility, eWOM, and consumer satisfaction. This study also explores the moderating effect of eWOM on these direct relationships.

4. Result

4.1. Reliability and validity

Researchers use abbreviations followed by a number to represent indicators (for example, customer's CSR initiatives in philanthropy are denoted as CP, with five indicators labeled as CP1, CP2, CP3, CP4, CP5). The same naming convention applies to all other factors (Fig. 9).

One of the most common techniques to test the reliability of instrument items is Cronbach's alpha coefficient (Hinton et al., 2024). Cronbach's alpha (α) can be used to evaluate the reliability properties of composite items for each latent variable. The instrument is reliable if the value of Cronbach's alpha for each construct is greater than 0.70 (Nunnally & Bernstein, 2010). It can be seen from the measurement results that the Cronbach's alpha values are all higher than 0.7, indicating that the reliability performance is good (Table 2).

Convergent validity shows the degree of relationship between the observed variables that measure the latent variable (Hair et al., 1998). To ensure convergent validity accuracy, the AVE value must be less than the composite reliability (CR), and each AVE value must be greater than 0.5. AVE is obtained by dividing the sum of squared covariance loadings of the expressions associated with the factor by the number of expressions (SÜRÜCÜ & MASLAKÇI, 2020). It can be seen from the measurement results that the AVE values of all variables meet the requirements, so the convergent validity is good.

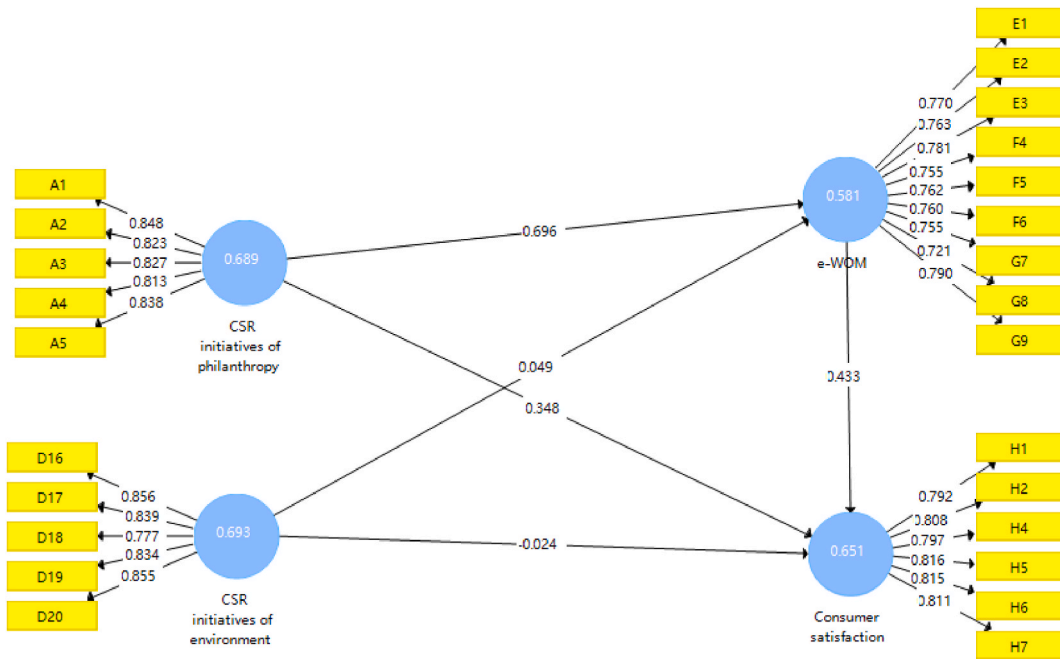


Fig. 9. The diagram of reflective measurement model assessment.

Noted:

n means sample size.

N means elements of sampling formula to calculate the sample size population, in this study was 1,327,000,000.

e means error of sampling, in this study was 5 %.

So the sample size were 400 respondents, on 0.05 margin of error, 95 % confidence interval.

Table 2

Internal consistency and convergent validity of the measurement.

Construct	Item	Loading	CR	Cronbach's α	rho_A	AVE	convergent validity (AVE > 0.5)
CSR initiatives in philanthropy	CP1	0.856	0.917	0.887	0.888	0.689	Yes
	CP2	0.839					
	CP3	0.777					
	CP4	0.833					
	CP5	0.855					
CSR initiatives in environmental	CEN1	0.838	0.919	0.892	0.914	0.693	Yes
	CEN2	0.811					
	CEN3	0.849					
	CEN4	0.820					
	CEN5	0.850					
Electronic word of mouth	EW1	0.852	0.926	0.910	0.910	0.581	Yes
	EW2	0.859					
	EW3	0.875					
	EW4	0.853					
	EW5	0.845					
	EW6	0.855					
	EW7	0.866					
	EW8	0.847					
	EW9	0.878					
Consumer satisfaction	CS1	0.793	0.918	0.893	0.893	0.651	Yes
	CS2	0.808					
	CS3	0.797					
	CS4	0.817					
	CS5	0.814					
	CS6	0.811					

Henseler, Ringle, and Sarstedt (2014) provide a detailed explanation of the HTMT criterion for assessing discriminant validity in variance-based structural equation modeling. If the HTMT value is less than 0.90, discriminant validity is established between two reflective structures. Therefore, these standards establish discriminant validity for reflective measurement models. From Table 3, the

HTMT of the variables CSR initiatives of philanthropy, CSR initiatives of environment, Consumer satisfaction, and eWOM are all below 0.90, indicating that the discriminant validity of the variables meets the standards. It is evident that the measurement scale exhibits acceptable reliability.

A very important assumption when performing SEM is that there are no multicollinearity issues and no common method bias. According to Ho (2006), the multicollinearity problem means that the independent variables or predictor variables are highly correlated. Furthermore, it is difficult to assess the unique contribution of each predictor when the independent variables are highly correlated with themselves (Ho, 2006). In PLS-SEM, the VIF value is usually used to measure whether there is multicollinearity problem in two latent variables. If the value of VIF is less than 5.00, there is no multicollinearity problem between latent variables (Hair et al., 2011). The results in Table 4 show that the internal VIF value is less than the threshold 5.00. Therefore, this confirms that the structural model is free of potential multicollinearity issues.

Common method bias (CMB) happens when variations in responses are caused by the instrument rather than the actual predispositions of the respondents that the instrument attempts to uncover. In other words, the instrument introduces a bias, hence variances, which you will be analysing. Consequently, the results you get is contaminated by the 'noise' stemming from the biased instruments [53]. The occurrence of a VIF greater than 3.3 is proposed as an indication of pathological collinearity, and also as an indication that a model may be contaminated by common method bias. Therefore, if all VIFs resulting from a full collinearity test are equal to or lower than 3.3, the model can be considered free of common method bias [54]. As can be seen from Fig. 4, all VIF values are less than 3.3, which meets the requirements, so there is no common method bias.

4.2. Hypotheses tests

The hypothesis was tested using Smart pls 3.0. There are four procedures to evaluate structural models and test direct relationships between independent and dependent variables, including evaluating path coefficients, r^2 levels, f^2 Values and p-value.

As shown in Table 5, the preliminary structural model of this study to test H1_{ab}, H2_{ab} and H3 was evaluated by the guided technique of 5000 subsamples of Smart-PLS software.

From the model that proposed, the structural model analysis results in Table 5 show that at the significance level of 0.05, there is a significant positive correlation between CSR behavior towards philanthropy and consumer satisfaction ($\beta = 0.650$, $t = 18.709$, $p = 0.000$). Therefore, the research results support H1a. The results show that when consumers are more positive about corporate social responsibility behavior in philanthropy, they are more satisfied with the enterprise.

The structural model analysis results in Table 5 show that at the significance level of 0.05, there is no influence between CSR behavior for the environment and consumer satisfaction ($\beta = -0.003$, $t = 0.072$, $p = 0.943$). Therefore, the findings do not support H1b. The results show that the corporate social responsibility behavior in environmental aspects does not affect consumer satisfaction.

This study examines the influence of a company's philanthropic social responsibilities on consumer satisfaction. The research findings suggest that a company's philanthropic social responsibility significantly impact consumer satisfaction, which aligns with the conclusions of previous research. There is a positive relationship between corporate social responsibility for philanthropy and customer satisfaction [55,56]. In 2021, Wang et al.'s study on the impact of CSR activities of Chinese real estate development enterprises on consumer loyalty and satisfaction found that philanthropy behavior will have a positive impact on consumer loyalty, and then affect consumer satisfaction [57].

However, the conclusions on the impact of environmental responsibility on consumer satisfaction are different from the results of some previous studies. In a 2021 study, Godefroit-Winkel [58] conducted a Supermarket Intercept survey of 327 consumers in France and 444 consumers in Morocco, which found that ECSR affects consumer loyalty through the regulation of positive and negative emotions across cultures. Mercadé-Melé [59] explains that environmental CSR affects perceptions of food safety and health as well as quality, and this perceived quality affects consumer behavior, namely satisfaction and loyalty. Being environmentally responsible can benefit airlines as it increases customer satisfaction [60].

The structural model analysis results in Table 5 show that at the significance level of 0.05, there is a significant positive correlation between CSR behavior for philanthropy and e-word-of-mouth ($\beta = 0.696$, $t = 21.255$, $p = 0.000$). Therefore, the findings support H2a. The results show that when consumers are more positive about corporate social responsibility behavior in philanthropy, the higher their e-word-of-mouth evaluation of enterprises is.

The structural model analysis results in Table 5 show that at the significance level of 0.05, there is no effect between CSR behavior for the environment and consumer satisfaction ($\beta = 0.049$, $t = 1.423$, $p = 0.155$). Therefore, the findings do not support H2b. The results show that corporate social responsibility behavior in environmental aspects does not affect e-word-of-mouth evaluation of enterprises.

This section discusses the impact of a company's philanthropic responsibilities on electronic word-of-mouth (eWOM). The research

Table 3
Heterotrait-monotrait ratio (HTMT).

	CSR initiatives of environment	CSR initiatives of philanthropy	Consumer satisfaction	e-WOM
CSR initiatives of environment				
CSR initiatives of philanthropy	0.101			
Consumer satisfaction	0.071	0.728		
e-WOM	0.121	0.779	0.747	

Table 4
Inner VIF values.

	Inner VIF Values	VIF < 5
CSR initiatives of environment → e-WOM	2.843	✓
CSR initiatives of philanthropy → e-WOM	1.014	✓
CSR initiatives of environment → Consumer satisfaction	2.979	✓
CSR initiatives of philanthropy → Consumer satisfaction	1.018	✓
e-WOM → Consumer satisfaction	2.578	✓

Table 5
Hypothesis testing (H1a, H1b, H2a, H2b, H3).

Hypothesis	Relationship	Original Sample (β)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	f Square	R Square
H1a	CSR-PHY → CS	0.650	0.650	0.035	18.709	0.000	0.128	0.514
H1b	CSR-ENV → CS	-0.003	0.000	0.039	0.072	0.943	0.001	
H2a	CSR-PHY → eWOM	0.696	0.696	0.033	21.255	0.000	0.946	0.491
H2b	CSR-ENV → eWOM	0.049	0.052	0.034	1.423	0.155	0.005	
H3	eWOM → CS	0.433	0.435	0.063	6.877	0.000	0.197	

findings indicate that a company’s philanthropic social responsibility significantly influence eWOM, consistent with the conclusions of most prior research. Vo et al. [61] studied the relationship between corporate social communication and word of mouth in the airline industry on Twitter, and found that CSR on social media positively influences WOM. Bialkova and Te Paske [62] found out CSR on social media positively relates to eWOM in 2020.

On the study of environmental social responsibility and eWOM, the results of this study are different from previous studies. D’Acunto et al. [63] analysis of 482,000 consumer reviews of hotels’ CSR in the past decade found that hotel customers have gradually begun to pay more attention to CSR factors, especially social and environmental factors, the same effect holds for food and beverage consumers, where environmental CSR stimulates recognition of and association with the brand, as well as recommendation behaviors such as word-of-mouth [43]. Corporate environmental social responsibility plays a vital role in airline customer word-of-mouth communication [64].

The structural model analysis results in Table 5 show that at the significance level of 0.05, there is a significant positive correlation between e-word-of-mouth and consumer satisfaction (β = 0.433, t = 6.877, p = 0.000). Therefore, the results support H3. The results show that the higher the e-word-of-mouth performance of consumers, the higher their satisfaction with enterprises.

This section investigates the impact of electronic word-of-mouth (eWOM) on consumer satisfaction. Consistent with prior research findings, eWOM has a positive influence on consumer behavior (satisfaction) [65,66]. A study conducted by Saleem et al.[67] surveyed 789 Chinese online shoppers from four cities: Harbin, Shenyang, Guangzhou, and Shenzhen. The research revealed that consumers’ eWOM in social media influences their online shopping intentions and, in turn, affects their satisfaction.

4.3. Hypothesis testing in mediation analysis

In this study, researchers used Smart PLS 3.0 to conduct mediation analysis on the research model, employing the PLS algorithm and bootstrap technique with a resampling number set to 5000. The PLS algorithm was used to evaluate the magnitude of indirect effects, while the bootstrap algorithm was used to determine the significance of these effects.

H4a. eWOM has a mediating effect between CSR initiatives of philanthropy and consumer satisfaction. As shown in Table 6, the specific indirect effect of "CSR initiatives of philanthropy - > eWOM - > Consumer satisfaction" (CSR-PHY→eWOM→CS) is 0.302, with a t-statistic of 6.257 and a p-value of 0.000. The bias-corrected confidence interval is [0.211, 0.401], indicating a significant path effect. This suggests that eWOM acts as a mediator between philanthropic responsibility and consumer satisfaction, confirming the

Table 6
Specific indirect Effects.

	Original Sample (O)	Sample Mean (M)	Standard eviation (STDEV)	T Statistics(O/STDEV)	P Values	Confidence Intervals Bias Corrected	
						Lower	Upper
CSR-PHY→eWOM→CS	0.302	0.303	0.048	6.257	0.000	0.211	0.401
CSR-ENV→eWOM→CS	0.021	0.023	0.015	1.373	0.170	-0.011	0.050

validity of H4a.

H4b. eWOM has a mediating effect between CSR initiatives of the environment and consumer satisfaction. As shown in Table 6, the specific indirect effect of "CSR initiatives of the environment - > eWOM - > Consumer satisfaction" (CSR-ENV→eWOM→CS) is 0.021, with a t-statistic of 1.373 and a p-value of 0.170. The bias-corrected confidence interval is [-0.011, 0.050], and since it includes 0, the path effect is not significant. This suggests that eWOM does not mediate the relationship between environmental responsibility and consumer satisfaction, indicating that H4b is not supported.

These findings highlight the differential impact of various CSR dimensions on consumer perceptions and behaviors (Fig. 10). While philanthropic CSR behaviors positively influence consumer satisfaction through the mediating role of eWOM, environmental CSR initiatives in Tencent's context may not have the same effect. It underscores the need for companies to carefully consider and prioritize their CSR efforts based on their specific industry and consumer expectations.

Although this study did not find a significant effect of environmental responsibility on consumer satisfaction and eWOM on social media, nor did it mediate such effects (H1b, H2b, H4b), it does not imply that companies can ignore environmental responsibility. Combining with previous research, there may be three reasons for this phenomenon.

The first factor is related to the industry. The focus of this study is on Chinese internet companies, and previous research has shown that in the service industry, food industry, or industries directly affecting the environment, environmental responsibility often attracts more attention from stakeholders, leading to a positive correlation with consumer satisfaction [43,63,64]. However, for internet companies, consumers primarily use related software or online services and may not prioritize whether the company is actively engaged in environmental practices.

Additionally, cultural and regional factors significantly influence the effectiveness of environmental responsibility. While environmental protection is a globally recognized issue, different cultures and regions exhibit varying levels of concern and expectations regarding environmental responsibility. This necessitates companies to develop CSR strategies tailored to their market environments. Environmental responsibility may be more welcomed in regions like North America and Europe, potentially exerting a more significant impact on consumer satisfaction. However, awareness of environmental protection is gradually increasing in some countries. For instance, over the past three decades of economic development in China since the reform and opening-up policy, there has been rapid industrialization akin to that achieved by Western developed countries over centuries. However, this has also led to environmental degradation and frequent pollution incidents, characterized by a predominant focus on pollution and subsequent remediation [68]. Consequently, attitudes towards environmental responsibility may vary among different countries, societies, and consumers, resulting in different outcomes.

Lastly, the reason may stem from "conscious non-consumers." In August 2023, the globally renowned consulting firm Bain & Company published an article titled "Why Many People Are Environmentally Conscious but Hesitate to Pay for Sustainability." The article introduces the concept of "conscious non-consumers," referring to individuals who understand the importance of environmental protection when faced with environmentalism or corporate environmental initiatives but do not actively support economic sustainability during consumption [69]. Bain conducted a survey of nearly 5000 American consumers between 2022 and 2023 and found that the largest portion, comprising 32 % of respondents, actively pay attention to climate change and adopt some environmental habits but do not purchase products from eco-friendly brands. In contrast, only 24 % of consumers exhibit environmental consciousness and genuinely consider eco-friendly products when making purchases.

This phenomenon seems to offer a more plausible explanation for the observed results: while consumers express high satisfaction with a company's environmental responsibility, this responsibility does not directly influence overall consumer satisfaction or word-of-mouth. If most consumers merely possess environmental awareness without actively supporting a company's environmental initiatives, there will be no tangible satisfaction metrics or widespread word-of-mouth behavior. Particularly in the context of internet companies where consumers acquire virtual network products and services—classified as intangible and lacking tangible sensory experiences—as participants in the consumption process, their sensitivity to environmental issues may already be diminished. For consumers described as "conscious non-consumers" with environmental awareness, taking financially supportive actions for environmental initiatives may become notably challenging.

5. Conclusion

Based on the findings of this study, philanthropic responsibility has a significant positive impact on both electronic word-of-mouth (eWOM) and consumer satisfaction. The results indicate that when companies engage in philanthropic activities, it generates positive eWOM, which in turn enhances consumer satisfaction. This highlights the importance of philanthropic initiatives as a strategic tool for companies to not only fulfill their corporate social responsibility (CSR) but also to foster consumer satisfaction through the amplification of positive eWOM.

Conversely, the study reveals that environmental responsibility does not have a substantial effect on eWOM or consumer satisfaction. Furthermore, eWOM does not mediate the relationship between environmental responsibility and consumer satisfaction. These findings suggest that while environmental initiatives are essential for sustainable development, they may not directly influence consumer perceptions and behaviors in the same way philanthropic efforts do.

Overall, this research underscores the differential impact of various CSR dimensions on consumer-related outcomes and the critical role of eWOM as a mediating factor. Companies aiming to boost consumer satisfaction through CSR should consider prioritizing philanthropic activities to leverage the positive effects mediated by eWOM.

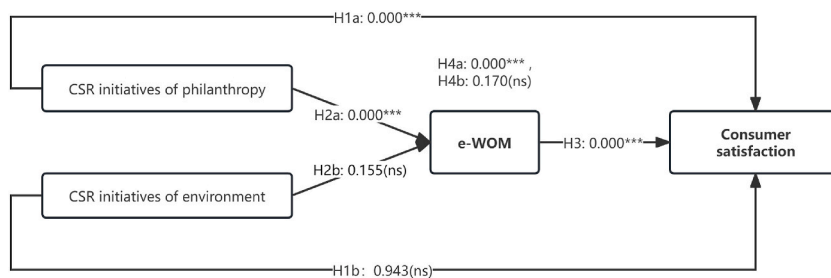


Fig. 10. Hypothetical Framework diagram.

Noted:

n means sample size.

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e means error of sampling, in this study was 5 %.

So the sample size were 400 respondents, on 0.05 margin of error, 95 % confidence interval.

6. Significance

The findings of this study have profound implications for businesses. Companies need to recognize the impact of different dimensions of corporate social responsibility (CSR) on their brand image and reputation. Social responsibility actions in philanthropy are integral to building a positive brand image. Companies should regularly review and improve these aspects of social responsibility to meet the evolving expectations of consumers. Additionally, businesses should closely integrate CSR strategies with their business objectives to achieve sustainable business growth. By strengthening the implementation of corporate social responsibility, companies can enhance their market competitiveness, attract more potential customers, increase brand loyalty, and ultimately achieve success.

Secondly, companies need to recognize the critical role of social media and electronic word-of-mouth in today's market. Actively managing and guiding consumer word-of-mouth can help businesses improve consumer satisfaction, increase brand exposure, and attract more potential customers. Therefore, companies need to establish effective social media strategies, actively engage in online communities, respond to consumer feedback, and disseminate positive news and achievements on social media.

Lastly, this study is grounded in the Stimulus-Organism-Response (SOR) theory, which provides a robust framework for understanding the psychological mechanisms behind consumer behavior. Our findings align with the SOR theory by demonstrating that philanthropic responsibility (stimulus) significantly enhances positive eWOM (organism), which in turn increases consumer satisfaction (response). This confirms the theoretical proposition that external stimuli (CSR activities) can shape consumer perceptions and behaviors through mediating variables (eWOM). However, the study also reveals that environmental responsibility does not exert a similar influence, indicating that not all types of CSR activities equally impact consumer perceptions and behaviors. This nuanced understanding contributes to the theoretical discourse by highlighting the selective effectiveness of different CSR dimensions within the SOR framework.

7. Limitations and future research directions

This work is subject to several limitations that should be addressed in future research. Firstly, the findings of this study conducted in the context of China may be unique. The formulation of corporate social responsibility (CSR) depends on cultural and political environments (McNamara et al., 2017), and due to China's developmental history during the reform and opening-up period, the national and societal attitude of addressing pollution after development may have led to a weaker environmental awareness among previous generations, which could be one of the reasons why environmental responsibility does not affect consumer satisfaction in China. Secondly, this study only focused on larger internet companies in China, without investigating other industries. Previous research has shown that consumers' perceptions of CSR actions vary across different industries. For future research, more in-depth exploration can be conducted from the perspective of industry differences and consumer geographical and cultural differences.

Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

CRediT authorship contribution statement

Xiangzhou Hua: Writing – original draft, Software, Data curation. **Nurul Ain Mohd Hasan:** Supervision. **Feroz De Costa:** Writing – review & editing, Methodology. **Weihua Qiao:** Data curation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.heliyon.2024.e35027>.

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