Article

Sustainable Development of Online Group-Buying Websites: An Integrated Perspective of ECM and Relationship Marketing

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Abstract: Online group buying (OGB) is a unique, innovative, and interesting online business model that seems to have a bright future. However, many group buying websites (GBWs) have not stood the test of time. Different from traditional e-commerce websites, GBWs create a rich value experience for consumers, but no research has explored how these benefits help GBWs achieve sustainable development. In this study, the expectation confirmation model (ECM) and relationship marketing are integrated to explore how these multi-dimensional perceived values influence relationship quality (satisfaction and relationship commitment) and ultimately shape loyalty (continuous intention and positive electronic word of mouth (eWOM)). The research model and hypotheses are empirically tested with 278 valid responses using partial least squares-structural equation modeling (PLS-SEM). The results show that satisfaction (SAT) and relationship commitment (RC) are primary antecedents of continuous intention (CI) and positive eWOM (PE). We found interesting differences in the effects of multi-dimensional perceived values on relationship quality and loyalty. Hedonic value can help GBWs improve relationship quality and directly promote the spread of PE, thus attracting new users. Utilitarian value can only increase satisfaction and directly affect CI, helping GBW retain existing users. Social value cannot improve user satisfaction, but it can help GBW develop long-term emotional connections with users and indirectly shape user loyalty. Finally, the implication, limitations, and future research directions are described.

Keywords: expectation confirmation model; online group buying; perceived value; positive eWOM; relationship commitment

1. Introduction

Online group buying (OGB) is defined as bringing together consumers with common needs and increasing their bargaining power to get a lower transaction price [1,2]. Through this kind of mechanism, consumers can get a substantial price discount while the sellers can improve their overall sales performance [3]. It creates a win-win situation for both parties [2]. In this process, the group buying websites (GBWs) provide a platform where consumers can find others who share the common needs. OGB is considered to be a unique, innovative, and interesting online business model; it appears to have a bright future [4,5]. OGB originated in the United States in 2008, and because of GROUPON's huge success, this model quickly spread around the world [6]. With their unique charm, GBWs attract a large number of users. In China, the number of OGB users has grown from 18.75 million in 2010 to 332 million in 2018 and is expected to reach 419 million in 2019 [7], indicating that OGB seems to be a promising e-commerce model. However, in the first quarter of 2012, more than 70% (approximately 4000) of the GBWs in China went bankrupt or switched to other online business models [4].

On GBWs, users can initiate or participate in OGB. There is usually a minimum required quantity and a predetermined time, the buyer needs to conclude the transaction

under these restrained conditions, and each participant can get the same discount [8]. In the case of the dynamic price mechanism, discount prices are determined by a price-quantity table, the more participants, the greater the discount [6]. Therefore, everyone who participates in OGB will put in effort to recruit more consumers, trying to expand the size of the group through online intermediaries, in order to promote the transaction in a limited time and get a lower quantity discount [4,5].

GBWs provide services for consumers to participate in and initiate OGB, creating benefits for them in this process. However, there is a lack of sufficient research on how these benefits help GBWs to gain a sustainable competitive advantage. Moreover, expectation confirmation model (ECM) is a classic pattern for the continuous intention of Information System (IS), but ECM focuses solely on the user's assessment of the technology (perceived usefulness) and lacks emotional components. The technological advantage is easy to be imitated by competitors, while the differentiated competitive advantage formed by emotional connection cannot be duplicated [9]. According to Cheng and Huang [10], fierce competition makes it increasingly difficult for GBWs to retain existing customers and attract potential consumers. They are both critical for GBWs' long-term success. Under the cognitive-affective-conative framework, Su, Li [11] tested how the knowledge payment platform attracts and retains consumers through functional value, emotional value, and social value, to establish a profitable and sustainable business model. These views are consistent with the concept of relationship marketing. In traditional relationship marketing, enterprises create value for consumers to cultivate a long-term emotional connection with them, shape consumer loyalty, and achieve sustainable development. Although previous literature has employed the ECM framework [12–14] and the concept of relationship marketing [4,15,16] to explain continuous intention or stickiness intention in the OGB context, there are no studies that integrate them to explore this topic. Therefore, to fill this gap, we provide an extended version of ECM to explore how consumers' perceived values affect the sustainable development of GBWs. Our research aims to address the following research question:

RQ: What are the different roles of the multi-dimensional perceived value in building relationship quality (satisfaction and relationship commitment) and shaping loyalty (continuous intention and positive electronic word of mouth (eWOM)) towards a GBW?

The contribution of our study is threefold. First of all, we break the limitation of the value dichotomy [3]. Combined with the context of OGB and previous literature, we define consumer perceived value as a three-dimensional concept and explore the different roles they play in the sustainable development of GBWs. Furthermore, we provide an improved version of ECM. In ECM, satisfaction is considered to be unstable [17], and ECM lacks long-term emotional components [9]. With the help of relationship commitment in relationship marketing, we provide a more stable version of ECM. Satisfaction and relationship commitment were found to play different mediating roles in the model. Third, continuous intention and positive eWOM are considered dependent variables, both of which are important for the sustainable development of GBW. Through this research, we provide practical advice for the designers. They can leverage the different effects of perceived value through reasonable resource arrangements.

The remainder of this paper is arranged as follows. First, we introduce the components and structure of the ECM, review the existing literature on OGB, and then proposed the compatibility between relationship marketing and ECM. In the subsequent section, we propose our conceptual model and develop the hypotheses, and then we describe in detail our methodology and data analysis results. Finally, we discuss the key findings and the theoretical and practical implications offered by our study, as well as its limitations and the directions for future research.

2. Theoretical Background and Literature Review

2.1. ECM

Building on expectation confirmation theory (ECT) and the technology acceptance model (TAM), Bhattacherjee [18] proposed an expectation confirmation model (ECM) to explain a user's continuous intention of IS use. It is a landmark study because it draws attention to the fact that users' initial adoption of IS is different from their attempt to continue using it [19].

As shown in Figure 1, in ECM, all constructs are post-acceptance constructs because the impact of all pre-accepted constructs are already reflected in the confirmation and satisfaction constructs. Satisfaction is an affective state and unlike the (ex-ante) expectation in ECT, in ECM, the expectation is an (ex-post) expectation [18], which is constantly updated over time based on users' experience and reflected in the form of perceived usefulness [20]. Moreover, although user expectations are a very broad concept, for instance, in TAM, user expectations include perceived usefulness and perceived ease of use. However, Bhattacherjee [18] argues that perceived usefulness is a sufficient expectation in IS continuous use since it is the only belief that has been proven to consistently influence user intention at any stage of IS use.
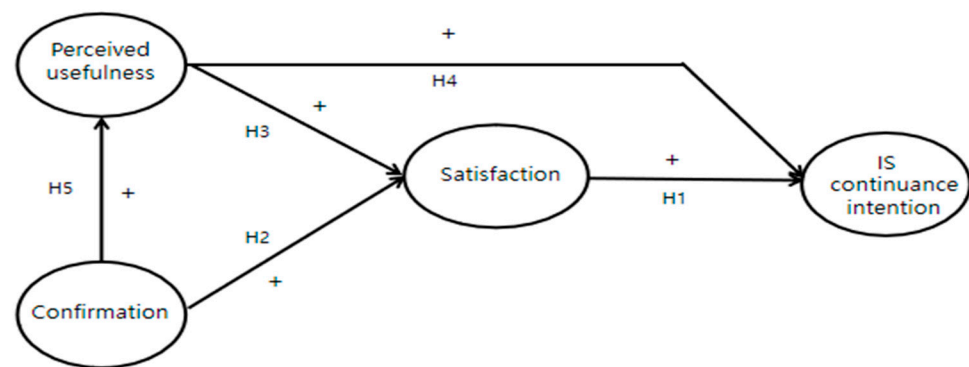

Figure 1. Expectation confirmation model (ECM).

Figure 1 also shows the relationships among these constructs. ECM posits that user's satisfaction, the degree of user's confirmation, and perceived usefulness are the antecedents of their IS continuous intention [20]. User's satisfaction with prior IS use is the primary determinant of continuous intention [18]. Both perceived usefulness and satisfaction depend on the degree of confirmation. If user's expectation is highly confirmed, then perceived usefulness and satisfaction will be improved [21] and they will be more willing to continue using it.

2.2. Precious Studies on OGB

OGB is a typical topic in the field of e-business research. There are four main streams of research on this topic. The first one focuses on the technology perspective. Lim and Ting [22] examined the influence of perceived usefulness and perceived ease of use on the attitude and intention to use GBWs. Wang, Wang, and Liu [4] investigated the indirect influence of system quality, information quality, and service quality on the stickiness intention of GBW. Hsu, Chang, Chu, and Lee [23] investigated how perceived website quality and seller quality affect OGB repurchase intention. These studies employ TAM (technology acceptance model), ISSM (information system success model), and ESM (e-commerce success model) as the theoretical background, and emphasize the influence of GBWs' technical characteristics on user behavior intention.

Another perspective is consumer-centered, from the perspective of transactions. Many studies have examined the impact of user-perceived value [14], perceived benefit [24], or price consciousness, price sensitivity [25] on OGB intention or behavior, or further classify perceived value into different dimensions, such as hedonic value and utilitarian

value [26,27], to simultaneously consider the influence of both rational and emotional factors on the OGB intention.

Moreover, there are two other major streams of research on OGB continuous intention. ECM has been widely employed in the study of IS continuous intention. Many studies have attempted to use an extended ECM model to research consumers' post-purchase intentions in the OGB context. Li and Shi [12] added four external variables including product quality, information quality, e-recovery service quality, and perceived risk to ECM to explain the influencing factors for consumers to continue to use the OGB pattern. Zhang, Lu, Gupta, and Gao [13] replaced perceived usefulness with three perceived OGB characteristics (price advantage, reputation, and website quality) and combined two social influencing factors (subjective norm and perceived critical mass) to put forward an extended ECM model, which better explains consumers' continuous intention in OGB context. Hsu, Chang, and Chuang [14] integrated value, information quality, and trust into the ECM model to explain consumer's repurchase intention.

In the traditional marketing discipline, cultivating user loyalty through customer relationship management is an important marketing concept. Enterprises establish emotional bonds with customers by meeting their needs or by increasing conversion costs to prevent consumers from switching to competitors. Therefore, Che, Peng, Lim, and Hua [15] examined the effect of personalization specificity on GBW revisit intention. Chang, Wong, Libaque-Saenz, and Lee [16] proved that if the GBWs provide more benefits than the traditional e-commerce websites, it can be regarded as a comparative advantage, which will increase the switching cost and make consumers resist change. Wang et al. [4] combined CTT (commitment trust theory) with ESM, and explored the antecedents of relationship commitment, trust, and their effects on OGB stickiness intention. However, there were no studies that combined relationship marketing and ECM to study this topic, so we want to fill that gap.

2.3. Compatibility between ECM and Relationship Marketing

ECM has received considerable attention in the IS continuous use field. Some scholars suggested that ECM should be extended by incorporating some theoretical perspectives to increase its predictive power [28]. We initiated a new lens, using relationship marketing to modify ECM in three ways.

First, in ECM, perceived usefulness is a technology-related cognitive process, it only focuses on the evaluation of the information system from the perspective of technology but ignores the role of emotion. The prior study suggests that perceived usefulness in ECM should be replaced with perceived value [29]. That is more in line with the most classic paradigm in traditional marketing research: value-satisfaction-loyalty (VSL) [17]. In addition, according to the concept of relationship marketing, relationship benefits, conversion costs, and attractiveness of alternative objects influence the quality of relationships and user loyalty. Different from traditional e-commerce websites, OGB not only creates monetary savings or convenience for users but also provides more incentives for users in the shopping process. Due to the curiosity [30] and exploration desire caused by uncertainty, the stimulation of countdown [31] in the shopping process, critical mass and ladder price, and more interpersonal interaction, the value users experience in OGB is rich and multi-dimensional. They can reflect the rational benefits (extrinsic motivation) and emotional benefits (intrinsic motivation) [32] that consumers derive from OGB.

Second, ECM uses satisfaction as a single structural mediator, mediating the effects of perceived usefulness and confirmation on the IS continuous use. However, such satisfaction is based on past experience, and it is backward and unstable [33]. As has long been recognized, satisfaction is an unreliable predictor of consumer loyalty [34,35]. If a customer has many alternatives, satisfaction will not always prevent him/her from switching to other options, especially in the online shopping scenario where the user can easily switch to another website with just one click [36]. In relationship marketing, satisfaction, trust, and relationship commitment are three important dimensions of relationship quality. Consumers

can get satisfaction from valuable products and services provided by enterprises. The high level, repetitive satisfaction will create emotional bonds of relationship commitment, which is forward, stable, and more predictable for future continuous use. Anderson and Srinivasan [37] also indicated that in the context of e-commerce, although satisfaction seems to be an important barometer for predicting customers' future behavior, the relationship between satisfaction and repurchase behavior is still elusive, so most companies try their best to meet customers' needs and try to establish a long-term relationship with them.

Third, IS continuous intention is regarded as the dependent variable in ECM, while continuous intention and positive WOM are the goals pursued by relationship marketing [38]. Continuous intention can predict the future behavior of the consumers themselves, while positive WOM refers to the communication of services and goods between consumers and others through informal channels. Martinsons [39] maintains that China's institutional environment makes informal recommendations from existing team members in e-commerce an important way to develop new business partnerships. It is much more reliable than formal channels of communication and can help the GBW to attract potential customers. Zhao, Wang, and Chen [5] believe that GBW can take advantage of the attributes of social commerce. Consumers tend to have stronger connections with those who are similar to them. Therefore, WOM sharing from existing consumers is an effective way to attract potential users. Both existing and potential users are critical to GBWs' long-term success.

3. Research Model and Hypothesis Development

Figure 2 depicts the proposed research model. Combined with the OGB context, we divide value into three dimensions and integrate relationship commitment and positive eWOM into ECM to propose this extended model.
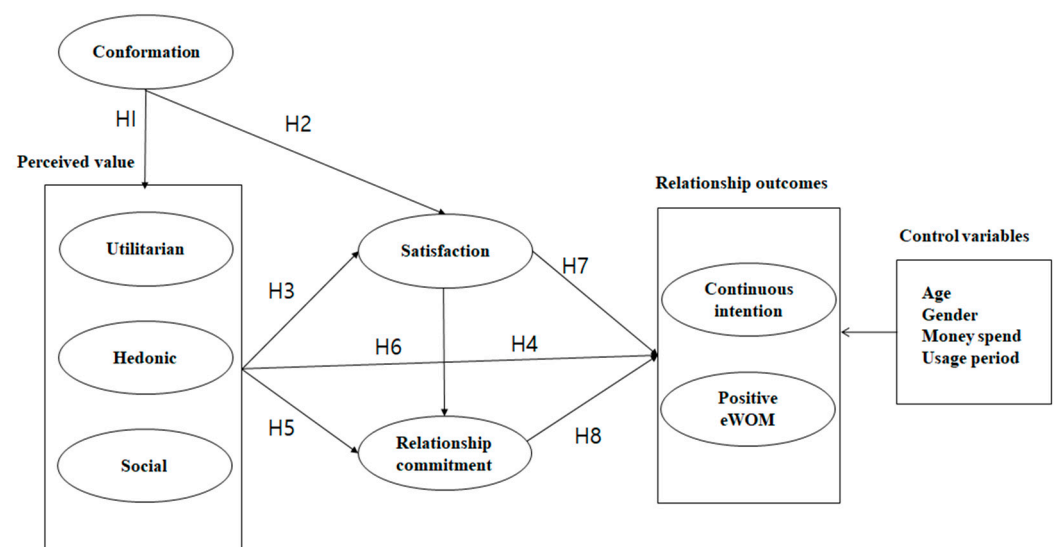

Figure 2. Research model.

3.1. Effects of Confirmation

Confirmation refers to the user's perception of congruence between the expectation of GBW use and its actual performance [9]. According to ECM, confirmation means the realization of expected benefits [18]. In adaptation level theory, people measure and perceive an object according to their subjective scales and personal experience, and then react to them. A person evaluates the object not only based on external stimuli, but also on the person's internal frame of reference, which is a short series of stimuli to which the individual has adapted previously or the impression formed previously [40]. If the user's previous experience is confirmed, then they will have a high evaluation of the IS and recognize its value. In the context of paid mobile apps, Hsu and Lin [41] also proved the relationship between confirmation and a multi-dimensional perceived value. Chen,

Wu, Peng, and Yeh [3], based on SCT (social capital theory), hold that GBW synergy and user active participation help users transform social capital into three dimension benefits: utilitarian benefit, hedonic benefit, and interpersonal benefit.

Therefore, we propose:

Hypothesis 1a (H1a). *Confirmation is positively related to perceived utilitarian value.*

Hypothesis 1b (H1b). *Confirmation is positively related to perceived hedonic value.*

Hypothesis 1c (H1c). *Confirmation is positively related to perceived social value.*

Satisfaction refers to an overall judgment of the degree of pleasurable fulfillment of a consumption-related product or service, including levels of under or over fulfillment [42]. Consumers will experience varying degrees of satisfaction if their OGB experience is as good as or better than expected. Despite fierce competition in the e-commerce market, GBWs offer users a richer experience than traditional e-commerce sites. We can predict that if the services offered by GBWs can meet the expectations of users, such as lower transaction price, pleasant shopping process, rich interpersonal interaction experience, then she/he will get psychological satisfaction. Thus, we posit:

Hypothesis 2 (H2). *Confirmation is positively related to satisfaction.*

3.2. Effects of Perceived Value

Based on previous studies, we defined perceived value as a three-dimensional construct. They are un-interchangeable and represent specific characteristics and different faces of OGB consumers' benefits.

Firstly, OGB attracts a large number of users who seek low prices. It is an efficient way to purchase products [24]. Therefore, the utilitarian value refers to the degree of functional and task-related experiences derived from using the GBW, such as efficiency, convenience, and saving of money [21,43]. Moon, Khalid, Awan, Attiq, Rasool, and Kiran [44] also argue that the utility of online shopping generally relates to consumers' perception of convenience, economy, or time saving. However, traditional e-commerce websites only provide consumers easy and friendly website layout, diversified choices, detailed product information, and convenience of shopping and payment anytime, anywhere. The utility of GBWs is much more than that. GBWs offer quantity discounts to consumers, contrastively listing individual purchase prices versus OGB prices. Moreover, in the OGB context, conformity psychology can reduce consumers' cognitive burden and saves the time of repeated comparison. Zhao, Wang, and Chen [5] believe that the integration with social media enables group-buying product information to flow to target groups more quickly, thus bringing cost benefits to consumers. Moreover, OGB provides easier functions to meet the needs of consumers at the bottom of the pyramid, for example, opening a link shared by a friend to make a purchase. It can not only provide customers with a trust "soft" guarantee but also reduce the trouble of information overload brought by search shopping, to realize the economy, convenience, and time-saving benefits.

Second, sometimes consumers are not only buying things but also creating emotional satisfaction in the process. Perceived hedonic value is the enjoyment, happiness, interest, and fun that consumers experience in the process of shopping [30]. GBWs offer different incentives for users. For example, the best deal refers to the pleasure one feels from negotiating and bargaining [45]. Traditional e-business websites often offered a fixed price, while the dynamic "ladder price" of GBWs creates satisfaction for consumers to seek bargains. GBWs can provide different types of discount products, arouse consumers' curiosity to look for a bargain, can use a dynamic countdown to display the remaining time, forming time pressure to increase product temptation [30], can real-time display the current scale of reference groups that participate in OGB, users can participate in the OGB as an initiator or buyer (follower), or implement role-playing. Therefore, consumers are more likely to gain a happy, immersive emotional experience in the OGB context.

Furthermore, OGB is a collaborative online shopping form in which customers shop with partners in a virtual context [2,14]. OGB platforms often offer a low price with a critical

mass. Therefore, in order to facilitate transactions, GBW encourages users to stay in touch with others about the deal through their social networks, share resources and information, get support and help from other members, and maintain and develop friendships in this process [3]. Han and Kim [2] believe that the background of eastern collective culture makes group-buying consumers pay much attention to the realization of group interests, and they get returns from cooperation and generate a sense of interdependence. This kind of collaboration between the initiator and the buyer makes GBWs more attractive [46,47]. It embodies the social shopping characteristics of GBWs. People feel happy when they shop with their family and friends. Similarly, the social experience of establishing interpersonal contact with others in the process of OGB [27], the experience of sharing pleasant shopping experience, and the satisfaction brought by the realization of altruism [48] and collective efficacy [2,49] provide consumers with emotional motivation for online shopping.

Perceived value is a cognitive construct, while satisfaction is an affective variable [50]. The value determines satisfaction in accordance with the social science paradigm of "cognition-affective response". Previous literature has revealed that perceived value is positively related to customer satisfaction [51]. Thus, we proposed:

Hypothesis 3a (H3a). *Perceived utilitarian value is positively related to satisfaction.*

Hypothesis 3b (H3b). *Perceived hedonic value is positively related to satisfaction.*

Hypothesis 3c (H3c). *Perceived social value is positively related to satisfaction.*

Perceived value has been found to play a key role in helping explain the loyalty related constructs [52]. Customers are value-oriented, superior value delivery helps improve the company's CRM (consumer relationship management) performance (including retention and word of mouth) [53]. If users' functional and social needs are met, they will stick with it, and further form a long-term behavioral intention [21]. In addition, according to the flow theory, perceived hedonic value is an important driving force that can lead individuals into a state of flow, and people in such a state are more likely to actively interact with others [54]. Furthermore, according to Zhao et al. [5], compared with high-income people, OGB groups are more inclined to help each other to gain a sense of community, so the social value may drive consumers to share an ideal deal on social networks. Therefore, we assume that:

Hypothesis 4a (H4a). *Perceived utilitarian value is positively related to continuous intention.*

Hypothesis 4b (H4b). *Perceived hedonic value is positively related to continuous intention.*

Hypothesis 4c (H4c). *Perceived social value is positively related to continuous intention.*

Hypothesis 4d (H4d). *Perceived utilitarian value is positively related to positive eWOM.*

Hypothesis 4e (H4e). *Perceived hedonic value is positively related to positive eWOM.*

Hypothesis 4f (H4f). *Perceived social value is positively related to positive eWOM.*

Relationship commitment refers to the consumer's long-term orientation toward a business relationship with the GBW that is grounded on emotional bonds [38]. Wang, Po Lo, Chi, and Yang [53] argued that superior customer value, as perceived by customers, has a significant influence on their decisions to retain a close relationship with a firm. These benefits can be considered as a critical strategic construct to predict relationship commitment [55]. In the context of the knowledge payment platform, Su et al. [11] conclude that the platform helps consumers save time and energy, provides enjoyment, or helps to establish, develop, and enhance interpersonal relationships, which is conducive to the formation of trust tendency and the establishment of long-term product attachment. We propose that:

Hypothesis 5a (H5a). *Perceived utilitarian value is positively related to relationship commitment.*

Hypothesis 5b (H5b). *Perceived hedonic value is positively related to relationship commitment.*

Hypothesis 5c (H5c). *Perceived social value is positively related to relationship commitment.*

3.3. Effects of Satisfaction

Users who are satisfied with their OGB experience may translate a high level or repeated satisfaction into a commitment-induced emotional bond with a particular GBW. If the user thinks they made the correct decision and got a high-quality transaction, then this positive reinforcement will lead to an emotional bond [56]. Anastasiei and Dospinescu [57] demonstrated that customer satisfaction is associated with high levels of affective commitment. Many studies have demonstrated a positive link between satisfaction and relationship commitment [38,58]. Therefore, we propose the following hypothesis:

Hypothesis 6 (H6). *Satisfaction is positively related to relationship commitment.*

In the OGB context, users who find a satisfactory transaction usually initiate the transaction through social media platforms to achieve critical mass. If consumers are satisfied with the quality of existing services, they will be more likely to provide positive WOM on behalf of the seller and to be consistent with the existing service provider [57,58]. McCoy et al. also demonstrated that users who developed a more positive attitude toward the site are more willing to revisit it and recommend it to others [59]. Thus:

Hypothesis 7a (H7a). *Satisfaction is positively related to continuous intention.*

Hypothesis 7b (H7b). *Satisfaction is positively related to positive eWOM.*

3.4. Effects of Commitment

Li, Browne, and Wetherbe [36] conducted a study on why users stick with a specific website. They proved that if users get a sense of commitment to the website from their past experience, this commitment is likely to drive them to revisit the website in the future. According to the research of Bettencourt [60], commitment is an attitude toward a firm, which will lead to various beneficial behaviors, for example, lead to positive eWOM communication [61], telling others about the positive aspects of the site, and raise intention to make referrals. According to Anastasiei and Dospinescu [57], the strongest positive word-of-mouth is provided by enthusiastic "supporters" who have a special relationship with the store. In this way, they want to reward stores that help them achieve their goals and provide a good shopping experience. Therefore:

Hypothesis 8a (H8a). *Commitment is positively related to continuous intention.*

Hypothesis 8b (H8b). *Commitment is positively related to positive eWOM.*

4. Research Methodology

4.1. Measurement Development

The questionnaire was developed by adapting measures that had been validated by prior literature. The definitions of the constructs in the conceptual model are listed in Table 1. Confirmation was measured with items adapted from Chen and Fu [21]. The perceived utilitarian value was assessed using items adapted from Overby and Lee [62] and Rintamäki, Kanto, Kuusela, and Spence [63]. The perceived hedonic value was measured using items adapted from Chen et al. [3], Overby and Lee [62], and Chen and Fu [21]. Items for measuring perceived social value were adapted from Tuten and Ashley [64] and Chen et al. [3]. The items used to measure satisfaction were adapted from Bhattacherjee [65] and Chen and Fu [21]. Relationship commitment was assessed using items adapted from Li et al. [36] and Tsao and Hsieh [66]. The items used to measure continuous intention were adapted from Bhattacherjee [18], while the items used to measure positive eWOM were adapted from Tsao and Hsieh [66] and Goyette, Ricard, Bergeron, and Marticotte [67]. For all measures, a five-point Likert scale was used with anchors ranging from strongly disagree "1" to strongly agree "5". The questionnaire items are listed in Appendix A.

Table 1. The operational definition of the constructs.

Construct	Definition	Source
Confirmation	User's perception of congruence between the expectation of GBW use and its actual performance.	Adapted from Chea and Luo [9]
Perceived utilitarian value	The degree of functional and task-related experiences derived from using the GBW.	Adapted from Batra and Ahtola [43]
Perceived hedonic value	The degree of emotional or sensory experiences derived from using the GBW.	Adapted from Batra and Ahtola [43]
Perceived social value	The interpersonal benefits gained from the acceptance, support, and recognition of other members.	Adapted from Chen et al. [3]
Satisfaction	An overall judgment of the degree of pleasurable fulfillment of a consumption-related product or service, including levels of under or over fulfillment.	Adapted from Oliver [42]
Relationship commitment	A consumer's long-term orientation toward a business relationship with the GBW that grounded on emotional bonds.	Adapted from Hennig-Thurau, Gwinner, and Gremler [38]
Continuous intention	User's intention to continue using service.	Adopted from Chea and Luo [9]
Positive eWOM	A third party (independent of the seller and the producer) spontaneously spreads positive information about goods and services through online media.	Adapted from Goyette, Ricard, Bergeron, and Marticotte [67]

4.2. Data Collection

We launched an online survey through the "https://www.wjx.cn/" website, inviting users with OGB experience to support the survey. The respondents were instructed to answer all of the questions based on their OGB experience. In order to ensure the accuracy of the data, we set up a pre-screening question to ask if the responder has experience in OGB. In addition, in the pilot survey, we set up a semi-open question to ask the respondents about the GBWs they visited most frequently. The answers include several different types of GBWs, such as Meituan, a location-based service site that offers special discounts. This is not consistent with our research subjects. Therefore, in the formal survey, at the beginning of the questionnaire, we introduced the definition of OGB and GBW involved in our survey and provided a screenshot of the page of OGB products and OGB rules of "Pin Duo Duo", "Jing Dong Ping Gou", and other websites. We identified some of these features by inserting tags to ensure that the GBWs have the same characteristics in the mind of responders (as shown in Appendix B). A total of 278 complete questionnaires were collected. The final 201 responses were considered valid for data analysis by considering the answer of pre-screening and a reverse-coding question, answering regularly, as well as the length of the response time. Table 2 lists the demographics of the respondents. According to the research of Zhang [68], our samples basically meet the characteristics of OGB groups. Specifically, female (64.2%) definitely outnumber male (35.8%) users. The age distribution is concentrated in the young group, especially 18–23 years old (21.9%) and 36–45 years old (48.3%), because they have a strong ability to accept new things, but their consumption power is limited, they have not yet gotten a job, or are in the middle age stage of great economic pressure; for nearly half of the consumers (48.8%), the monthly consumption is less than CNY 100. The demographic results show that our sample is well represented.

Table 2. Demographic statistics information about the respondents (N = 201).

Measure	Items	Frequency	Percentage (%)
Gender	male	72	35.8
	female	129	64.2
Age	Below 18 years old	1	5.0
	18–23 years old	44	21.9
	24–29 years old	17	8.5
	30–35 years old	25	12.4
	36–45 years old	97	48.3
	Above 45 years old	17	8.5
Education	High school or below	11	5.5
	Vocational/technical school (including current students)	2	1.0
	College student (including current students)	119	59.2
	Graduate or above (including current students)	68	33.8
	Other	1	0.5
Money spent per month	Less than CNY 100	98	48.8
	CNY 100–300	54	26.9
	CNY 300–500	29	14.4
	CNY 500–1000	14	7.0
	More than CNY 1000	6	3.0
Usage period	Less than 1 year	56	27.9
	1–3 years	106	52.7
	4–6 years	16	8.0
	more than 6 years	23	11.4
Occupation	Civil servants	8	4
	Public institutions	91	45.3
	Enterprise staff	39	19.4
	Retired or unemployed	7	3.5
	other	56	27.9
Monthly income	Less than CNY 3000	34	16.9
	CNY 3000–4999	62	30.8
	CNY 5000–7999	70	34.8
	More than CNY 8000	35	17.4

5. Data Analysis and Results

To test the research model, this study used partial least squares-structural equation modeling (PLS-SEM) techniques. SmartPLS 3.2.8 software [69] was employed to carry out data analysis because it has been widely used in the IS and marketing discipline and has minimal demands on sample size, measurement scales, and residual distribution [70]. We conducted the data analysis in two steps. The measurement model was tested followed by the structural model.

5.1. Measurement Model

5.1.1. Common Method Bias and Multicollinearity

Since the data were collected through self-reporting measures, we conducted Harman's one-factor test to exclude common method biases [71]. We used SPSS22.0 to perform principal component analysis and set the eigenvalue to be greater than 1. Among the identified factors, the first factor accounts for 48.6% of the variance (lower than the threshold of 50%) [72], which eliminates the concern of the common methods bias in this study.

Moreover, due to the high correlation between constructs, the variance inflation factors (VIF) values were calculated by SmartPLS to exclude multicollinearity concerns. The results revealed that VIF values for all constructs range from 1.51 to 4.78, which is well below the usual cutoff level of 10 [73], thus multicollinearity is unlikely a concern in this study.

5.1.2. Reliability and Validity

The measurement model was evaluated by reliability and validity. Reliability is mainly used to test the consistency and stability of the scale. In PLS-SEM, composite reliability (CR) and Cronbach's α value are usually used to test the reliability [74]. Table 3 shows that all the CR values ranged from 0.897 to 0.946 and the Cronbach's α values ranged from 0.855 to 0.914, exceeding the criterion 0.7 [75]. These results mean that our data have a high level of reliability.

Table 3. Reliability and convergent validity for the measurement model. CON: confirmation; UV: utilitarian value; HV: hedonic value; SV: social value; SAT: satisfaction; RC: relationship confirmation; CI: continuous intention; PE: positive electronic word of mouth (eWOM).

Construct	Indicator	Factor Loading	Composite Reliability (CR)	Cronbach's α	Average Variance Extracted (AVE)
CON	CON1	0.909	0.946	0.914	0.853
	CON2	0.935			
	CON3	0.927			
UV	UV1	0.755	0.897	0.855	0.637
	UV2	0.770			
	UV3	0.857			
	UV4	0.872			
	UV5	0.724			
HV	HV1	0.783	0.920	0.883	0.742
	HV2	0.876			
	HV3	0.894			
	HV4	0.888			
SV	SV1	0.793	0.922	0.895	0.705
	SV2	0.876			
	SV3	0.860			
	SV4	0.869			
	SV5	0.795			
SAT	SAT1	0.902	0.932	0.890	0.820
	SAT2	0.910			
	SAT3	0.904			
RC	RC1	0.879	0.941	0.905	0.841
	RC2	0.920			
	RC3	0.950			
CI	CI1	0.919	0.944	0.911	0.850
	CI2	0.951			
	CI3	0.895			
PE	PE1	0.879	0.936	0.898	0.831
	PE2	0.932			
	PE3	0.923			

Validity is an important index to measure the accuracy of the scale, including content validity, convergence validity, and discriminate validity. In this study, since all measurement items refer to mature scales that have been verified, and there are more than 3 measurement items for each variable, content validity is guaranteed. Regarding the test of convergent validity, in SmartPLS, it is usually measured by factor loading and average variance extracted (AVE). There are two criteria: (1) all factor loadings should exceed 0.7 and (2) the AVE of each construct should exceed the variance due to the measurement error for that construct (i.e., AVE should exceed 0.50) [76]. The results in Table 3 indicate that all the values of factor loading exceed 0.7 and all of the AVE values ranged from 0.637 to 0.853, indicating that convergent validity is achieved. Following Fornell and Larcker [76], the criterion for discriminate validity is that the square root of AVE should be greater than the correlations between the construct and other constructs in the model. Table 4 shows that all the diagonal values exceed the inter-construct correlations coefficient, indicating that discriminate validity is acceptable.

Table 4. Discriminant validity for the measurement model.

Construct	CON	UV	HV	SV	SAT	RC	CI	PE
CON	**0.924**							
UV	0.656	**0.798**						
HV	0.568	0.649	**0.861**					
SV	0.523	0.452	0.486	**0.839**				
SAT	0.776	0.704	0.658	0.491	**0.905**			
RC	0.553	0.467	0.53	0.533	0.551	**0.917**		
CI	0.603	0.641	0.618	0.479	0.692	0.634	**0.922**	
PE	0.613	0.568	0.589	0.488	0.61	0.595	0.705	**0.911**

Notes: 1. Diagonal: square root of AVEs report along diagonal in bold. 2. Off-diagonals: correlation between latent variables. 3. CON: confirmation; UV: utilitarian value; HV: hedonic value; SV: social value; SAT: satisfaction; RC: relationship confirmation; CI: continuous intention; PE: positive electronic word of mouth (eWOM).

5.2. Structure Model

5.2.1. Direct Effect

With an adequate measurement and the acceptable levels of multicollinearity and common method variance, the proposed model and hypothesized relationships were estimated using 1000 interactions of bootstrapping technique in SmartPLS. Figure 3 and Table 5 illustrates the estimated coefficients and their significance for the structural model. As expected, confirmation strongly affects utilitarian ($\beta = 0.656$, $p < 0.001$), hedonic ($\beta = 0.568$, $p < 0.001$), social value ($\beta = 0.523$, $p < 0.001$), and satisfaction ($\beta = 0.486$, $p < 0.001$), indicating that H1a,b,c and H2 are supported. Furthermore, utilitarian ($\beta = 0.232$, $p < 0.001$) and hedonic value ($\beta = 0.220$, $p < 0.001$) have significant influence on satisfaction, while social value ($\beta = 0.025$, $p > 0.05$) has an insignificant influence on satisfaction. The results show that H3a, b are supported, whereas H3c is not supported. Utilitarian value has positive effect on continuous intention ($\beta = 0.193$; $p < 0.01$), while hedonic ($\beta = 0.112$, $p > 0.05$) and social value ($\beta = 0.033$, $p > 0.05$) do not have significant influence on continuous intention, and hedonic value ($\beta = 0.153$; $p < 0.01$) has a positive effect on positive eWOM, while utilitarian ($\beta = 0.126$, $p > 0.05$) and social value ($\beta = 0.104$, $p > 0.05$) do not have significant influence on positive eWOM. Thus, H4a,e are supported, whereas H4b,c,d,f are not supported. The utilitarian value does not have a significant influence on relationship commitment ($\beta = 0.019$, $p > 0.05$), while hedonic ($\beta = 0.202$, $p < 0.01$) and social value ($\beta = 0.300$, $p < 0.001$) have positive effect relationship commitment, indicating H5a is not supported, whereas H5b,c are supported. In addition, satisfaction exert significant effects on relationship commitment ($\beta = 0.257$, $p < 0.001$), continuous intention ($\beta = 0.281$, $p < 0.001$), and positive eWOM ($\beta = 0.192$; $p < 0.05$), indicating that H6 and H7a,b are supported. The results also indicate that relationship commitment has significant influences on continuous intention ($\beta = 0.300$, $p < 0.001$) and positive eWOM, ($\beta = 0.270$, $p < 0.001$), which means that H8a,b are supported. Overall, 59.9% variance in continuous intention and 50.4% variance in positive eWOM was explained by this model.
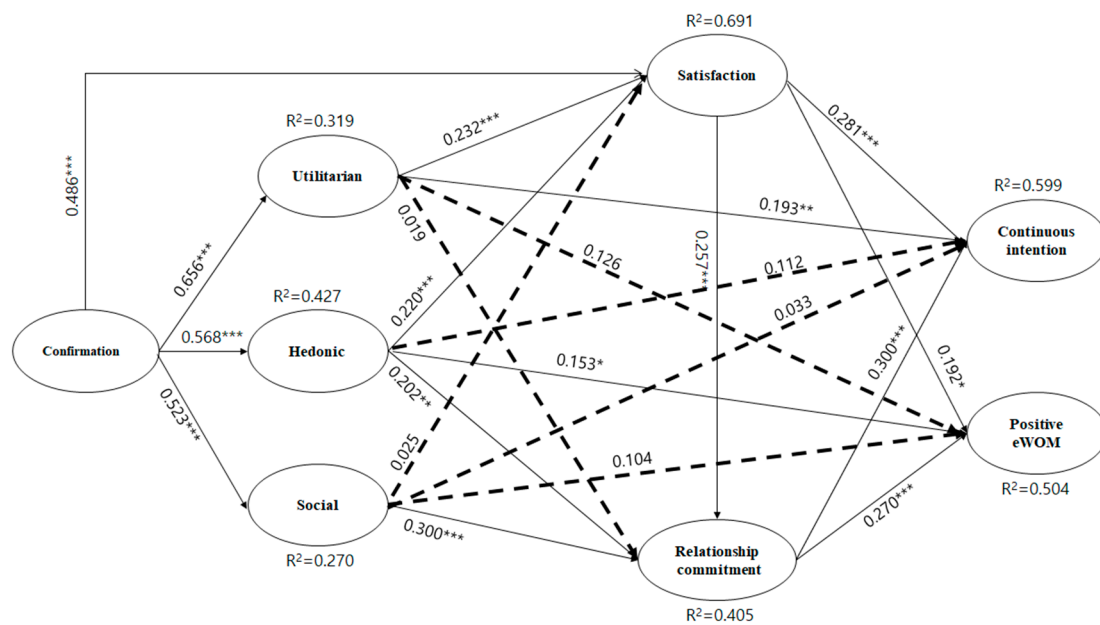
Figure 3. Model results. Numbers are standardized path coefficients. Dotted lines indicate insignificant paths; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 5. Estimated coefficients and their significance for the structural model.

Hypothesis	Path	Standardized Coefficient	Sample Mean (M)	Standard Deviation (STDEV)	*p*-Value	Support
H1a	CON → UV	0.656	0.657	0.047	0.000 ***	Supported
H1b	CON → HV	0.568	0.567	0.054	0.000 ***	Supported
H1c	CON → SV	0.523	0.526	0.051	0.000 ***	Supported
H2	CON → SAT	0.486	0.485	0.080	0.000 ***	Supported
H3a	UV → SAT	0.232	0.234	0.068	0.000 ***	Supported
H3b	HV → SAT	0.220	0.221	0.053	0.000 ***	Supported
H3c	SV → SAT	0.025	0.026	0.051	0.311	Not Supported
H4a	UV → CI	0.193	0.193	0.073	0.004 **	Supported
H4b	HV → CI	0.112	0.113	0.072	0.059	Not Supported
H4c	SV → CI	0.033	0.032	0.060	0.292	Not Supported
H4d	UV → PE	0.126	0.130	0.077	0.052	Not Supported
H4e	HV → PE	0.153	0.151	0.069	0.013 *	Supported
H4f	SV → PE	0.104	0.107	0.069	0.068	Not Supported
H5a	UV → RC	0.019	0.022	0.087	0.413	Not Supported
H5b	HV → RC	0.202	0.201	0.079	0.005 **	Supported
H5c	SV → RC	0.300	0.304	0.070	0.000 ***	Supported
H6	SAT → RC	0.257	0.254	0.078	0.001 ***	Supported
H7a	SAT → CI	0.281	0.278	0.077	0.000 ***	Supported
H7b	SAT → PE	0.192	0.191	0.097	0.023 *	Supported
H8a	RC → CI	0.300	0.302	0.063	0.000 ***	Supported
H8b	RC → PE	0.270	0.268	0.076	0.000 ***	Supported

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

Finally, the results reveal that control variables, such as gender ($\beta = 0.024$, $p > 0.05$; $\beta = 0.024$, $p > 0.05$), age ($\beta = 0.074$, $p > 0.05$; $\beta = 0.084$, $p > 0.05$), money spent($\beta = 0.042$, $p > 0.05$; $\beta = 0.067$, $p > 0.05$), and usage period ($\beta = -0.037$, $p > 0.05$; $\beta = -0.016$, $p > 0.05$) do not have significant effects on continuous intention and positive eWOM. Accordingly, we recognize that the empirical results of this study were not due to covariation with control variables.

5.2.2. Mediating Effect

As shown in Tables 5 and 6, satisfaction and relationship commitment partially (fully) mediate the influence of hedonic value on positive eWOM (continuous intention). Satisfaction partially (fully) mediates the influence of utilitarian value on continuous intention (positive eWOM). Relationship commitment fully mediates the effect of social value on these two dependent variables.

Table 6. Estimated coefficients and significance for the mediate effects.

Mediated Path	Standardized Coefficient	*p*-Value
UV → RC → CI	0.006	0.416
UV → SAT → CI	0.065	0.004 **
UV → RC → PE	0.005	0.416
UV → SAT → PE	0.045	0.033 **
HV → RC → CI	0.061	0.012 **
HV → SAT → CI	0.062	0.004 **
HV → SAT → PE	0.042	0.037 *
HV → RC → PE	0.055	0.023 *
SV → RC → CI	0.090	0.001 **
SV → SAT → CI	0.007	0.319
SV → SAT → PE	0.005	0.326
SV → RC → PE	0.081	0.004 **

Note: * $p < 0.05$; ** $p < 0.01$.

6. Conclusions

6.1. Research Conclusion

Overall, the results provide support for most hypotheses and offer several important findings. The purpose of this study is to reveal the internal mechanism that influences the sustainable development of GBWs from the perspective of perceived value.

First of all, we discover the different effects of the multi-dimensional perceived values on shaping user loyalty. Different from the previous study [27], our study found that hedonic value had a significant positive effect on positive eWOM, while only utilitarian value had a positive effect on continuous intention. This means that practical benefits, such as economy, efficiency, and time-saving are the main motivation for GBWs to maintain existing users, while a pleasant shopping experience can promote the spread of positive eWOM and help GBWs attract new users.

Another interesting finding was that, contrary to our expectations, social values had no significant effect on satisfaction. This finding is inconsistent with the previous study [51]. One possible explanation is that the primary purpose for consumers to participate in OGB is shopping, so that social value is extra, rather than the core benefit that consumers deliberately pursue in OGB. Another possible reason is that social value is realized through individual communication. The initiators need to coordinate the conflicts of interest and reach a deal within a limited time. When the team is too large, the complexity of the task increases. The initiators face negative emotions such as pressure, tension, and friction. As a participant, due to the mismatch between his/her demand preference and group, she/he may receive some information unrelated to the task, thus increasing the cognitive burden [77]. However, social value has a positive impact on relationship commitment. One potential explanation for this finding may be that the sources of social benefits in traditional relationship marketing are different from the social values in OGB. The former often results from the interpersonal interaction between the service provider (e.g., salesperson) and customers. In the service industry, such customer-staff affection can be transformed into customer-firm affection [78,79], thus leading to consumer loyalty. The latter emphasizes the interpersonal interaction between consumers in the OGB process. This kind of connection and social support can meet consumers' emotional needs of social attributes and make the rational transaction process full of

human touch. However, since the objects of interaction do not belong to GBW, social values only indirectly affect loyalty through relationship commitment.

We also explore the role of multi-dimensional perceived values in improving the relationship quality between GBWs and users. Satisfaction and relationship commitment are two important determinants of continuous intention and positive eWOM. This finding is consistent with some previous studies [33,80], indicating that good relationship quality is an effective guarantee for the sustainable development of GBWs. Confirmation, hedonic value, and utilitarian value are the determinants of satisfaction. This shows that meeting users' core benefits and expectations is an effective way to achieve satisfaction. Moreover, this study is the first to take multi-dimensional perceived values as a prerequisite for relationship commitment and empirically prove that hedonic value, social value, and satisfaction are the determinants of relationship commitment. This may be because emotional value and social value satisfy consumers' higher-level demands [11]. Martinsons [39] also believes that Chinese consumers attach more importance to social and entertainment elements in transactions. Therefore, satisfying the intrinsic motivation of users can help GBWS establish a long-term emotional connection with them.

6.2. Theory Significance

Our study provides a more comprehensive ECM framework.

First, it is reasonable to replace perceived usefulness with perceived value because perceived usefulness only reflects the extrinsic benefits users get from online transactions [4,14], and previous studies often take the perceived value as a whole concept [4,34]. In response to the proposition of Hsu and Lin [41], we divided values into multi-dimensional components that comprehensively reflect internal and external interests. Chen et al. [3] broke down the utilitrian-hedonic value dichotomy. They argued that user participate and platform synergy help users transform social capital into utilitarian benefit, hedonic benefit, and social (interpersonal) benefit. Combined with the social commerce attributes of OGB, we introduced the concept of social value, and through empirical analysis, we demonstrated that different values contribute to GBWs sustainability through different paths.

Furthermore, using satisfaction and relationship commitment as a dual mediator, we provide a more stable ECM framework. Satisfaction plays an important role in both VSL and ECM. However, in the IS and marketing discipline, researchers have long questioned why satisfied users are not loyal [17]. We demonstrate the direct connection between satisfaction and consumers' continuous and positive eWOM intention and we reveal another forward, more robust path of influence because satisfaction contributes to a more positive attitude-relationship commitment. Lee and Kwon [19] believe that in the use of web-based services, both emotional and cognitive factors can explain continuous intention. They found that previous studies have focused only on short-term affective factors. In the future, more attention should be paid to the effects of long-term emotions accumulated over time. Our study echoes their call and compensates for the lack of affective [9], particularly the lack of long-term affective construct in ECM. The results verified that relationship commitment has a stronger positive effect on continuous intention and positive eWOM, indicating that adding relationship commitment to ECM can provide stronger explanatory power.

Finally, a lot of studies only focused on users' continuous intention in the online service context, simply because it costs far more to attract potential users than it does to retain existing ones [81,82]. However, due to the fierce competition environment and convenient technical conditions, users can easily switch to another website, while in our study, the characteristics of social commerce [54] enable GBWs to make full use of customers' social connections to help them attract potential users at a low cost. Chumpitaz Caceres and Paparoidamis [80] suggested that establishing relationships can be divided into two steps: attracting users and establishing good relationships with them, and then the economic benefits of relationships can be realized. Therefore, using continuous intention and positive eWOM as the outcome variables provide great significance to the sustainable development of IS.

6.3. Practical Significance

Our research provides valuable insights for GBW platform developers. The designer should leverage the positive effects of different values to help GBWs retain existing users and attract potential users. For instance, only perceived utilitarian value directly affects continuous intention, indicating that consumers' main motivation to revisit GBWs is utilitarian. Therefore, before other considerations, designers should give priority to ensuring that sufficient utilitarian value, such as provide a simple and friendly user interface, a wide range of choices, rich product information, competitive prices, and convenience [27].

In addition, unlike the previous study [44], we find that the hedonic value plays a more comprehensive role in the OGB context. Utilitarian value has no significant effect on the relationship commitment, which shows that in a fierce competition environment, simply providing utilitarian value cannot help GBWs to establish emotional connections with consumers. Therefore, designers should take full advantage of ladder price, role-playing, bargain-seeking, curiosity, and so on to help users get a pleasant shopping experience from OGB. This pleasant shopping experience also encourages consumers to share and attract potential consumers in addition to helping GBWs enhance their relationships with existing ones.

Finally, although social value has an only indirect influence on post-purchase intention, the social value gives GBW the function to meet customers' social attribute needs, which is conducive to establishing relationship commitment between GBWs and users. Therefore, designers should fully consider the opportunity to provide customers with friendly social interaction, such as providing multi-channel interaction or by reducing the uncertainty barrier caused by excessive quantity and time limit, or organize activities such as bidding alliances to enhance cooperation among consumers [2]. Moreover, we found a seemingly contradictory conclusion, which is that perceived social value had no significant impact on satisfaction. This may be because when GBWs attract new users and promote mobile apps, activities such as obtaining free goods by bargaining with the help of friends and relatives may cause disturbance to consumers, especially when it is difficult to realize benefits. The research of Chang et al. [16] provides evidence for our assumption. Through an in-depth interview, they found that consumers were harassed by various OGB requests and advertisements from friends and family members of Ping duo duo (a GBW, the third-largest e-commerce platform in China). In order to get all kinds of benefits, they have to demand favors from their OGB friends, which also makes them feel interpersonal fatigue. Therefore, GBWs should cautiously adopt such a strategy for their long-term development. In addition, GBWs should make some improvements in their recommendation mechanisms, such as allowing consumers to choose friends with similar needs based on their search histories, thus encouraging users to actively share a newly discovered attractive deal with the target audience, increasing the visibility of the transaction and helping them gain social returns from this beneficial interaction.

6.4. Limitations and Future Research Directions

While considering the implications of our findings, we should bear in mind possible limitations in our research project. Three limitations in this study may provide avenues for future research.

First, we took Chinese consumers as the respondents and adopted a convenient sampling method to get the data. Future research can try to take customers with different cultural backgrounds as respondents, adopt a probability sampling approach to test the generalization of this study.

Second, our data are cross-sectional and cannot discuss the long-term impact of factors on intentions or observe consumers' intentions over time. For example, relationship commitment may exert a more important effect over time because users who have a stable relationship with the website are more likely to form positive intentions even if they are not very satisfied with the service or product or face better alternatives. Therefore, future research can adopt new methods and longitudinal data to verify this understanding.

In addition, our research only vertically studies the impact of multi-dimensional value on post-purchase intention. Future research can horizontally examine the impact of other more factors, such as competitive factors (conversion cost and attractiveness of alternative), psychological factors (altruistic, conformity, reciprocity, trust), technical, and system characteristics factors (website size, reputation, system quality, etc.) on post-purchase intention. In order to obtain more valuable insights, scholars can also adopt the consumer type as the moderating variable and conduct a multi-group analysis, further exploring the different antecedents for GBWs to attract potential users and retain existing users.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not available.

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

Appendix A. Questionnaire Items

| Latent Variables	Items	Sources
Confirmation (CON)	CON1: My experience of using this GBW was as good as expected. CON2: This GBW really achieves the results I want. CON3: The efficiency of this GBW to meet my demands was as good as expected.	Adapted from Chen and Fu [21]
Utilitarian value (UV)	UV1: The price of the product and/or services I purchase from this GBW are at the right level, given the quality. UV2: When I make a purchase from this GBW, I save time. UV3: The products and/or services I purchase from this GBW were a good buy. UV4: This GBW retailer offers a good economic value. UV5: I saved money when I shopped on this GBW.	Adapted from Overby and Lee [62] and Rintamäki, Kanto [63]
Hedonic value (HV)	HV1: I enjoy the pleasant and relaxed emotions gained from OGB. HV2: Making a purchase from this GBW totally absorb me. HV3: Using this GBW makes me feel fulfilled. HV4: I think that purchase from this GBW is interesting.	Adapted from Chen, Wu [3], Overby and Lee [62] and Chen and Fu [21]
Social value (SV)	SV1: I get sufficient social support or help from other OGB members. SV2: I gain acceptance and approval from other OGB members. SV3: I stay in touch with other OGB members by using this GBW. SV4: I impress other OGB members. SV5: I believe that by participating in this OGB, I was consistent with the majority.	Adapted from Chen, Wu [3] and Tuten and Ashley [64]
Satisfaction (SAT)	SAT1: I feel good regarding my decision to purchase from this GBW. SAT2: I think purchase from this GBW is a good idea. SAT3: I feel satisfied with the services provided by this GBW.	Adapted from Bhattacherjee [65] and Chen and Fu [21]
Relationship commitment (RC)	RC1: I would feel very upset if this GBW were to disappear in the future. RC2: I feel attached to this GBW. RC3: I would feel a loss if this GBW should leave me.	Adapted from Rusbult, Martz [83] and Tsao and Hsieh [66]
Continuous intention (CI)	CI1: If I could, I would like to continue using this GBW to purchase products. CI2: It is likely that I will not continue using this GBW to purchase in the future. * CI3: Even if there are other GBWs, I will continue to use this GBW.	Adapted from Bhattacherjee [18]
Positive eWOM (PE)	PE1: I am willing to provide more positive information about this OGB product available to other internet users. PE2: I am willing to positively discuss this OGB product with other people on the Internet. PE3: I am willing to share positive information about this OGB product with others on the Internet.	Adapted from Tsao and Hsieh [66]

Notes: * reverse coded.

Appendix B
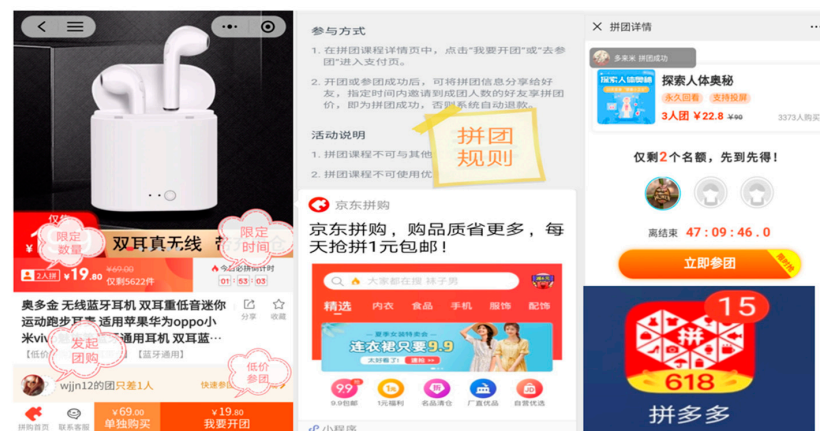
Figure A1. GBWs and OGB rules (picture demonstration).

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