

pISSN: 1906 - 6406 The Scholar: Human Sciences
eISSN: 2586 - 9388 The Scholar: Human Sciences
<http://www.assumptionjournal.au.edu/index.php/Scholar>

Factors Influencing Consumers' Co-Creation Value and Purchase Intention of the Virtual Brand Community in Guangdong, China

Hongwei Li*

Received: September 28, 2023. Revised: January 9, 2024. Accepted: January 29, 2024.

Abstract

Purpose: This study aims to investigate the key influencing factors of co-creation value and purchase intention of internet users in virtual brand communities in Guangdong Province, China. The conceptual framework proposes the causal relationships among self-service, co-reflection, user engagement, trust, co-creation value, and customer purchase intention. **Research Design, data, and methods:** Using a quantitative approach (N = 500), the researchers administered questionnaires to five representative virtual brand communities in Guangdong, China, including Xiaomi Fans Club and Perfect Diary Brand WeChat Group, Watsons official user community, Starbucks WeChat User Community, NetEase Cloud Music Virtual Community. The sampling procedures includes judgmental, stratified random, and convenience sampling, collecting data and distributing online and offline surveys. Structural Equation Model (SEM) and confirmatory factor analysis (CFA) were used to analyze the data, including model fit, reliability and validity. **Result:** The results show that self-service, co-reflection, user engagement, and trust significantly influence co-creation value. Furthermore, trust and co-creation value significantly influence customer purchase intention. **Conclusion:** The findings can help the virtual brand community develop a new way to disseminate and promote product information through social networking sites. This research also helps to build a positive perception of products and services, as a positive orientation will thus influence purchasing decisions.

Keywords: Virtual Brand Community, Consumer Purchase Intention, Co-Reflection, User Engagement, Co-Creation Value

JEL Classification Code: E44, F31, F37, G15

1. Introduction

In recent years, more and more companies are understanding the advantages of partnering with customers to deliver and trade services and benefits (Porter et al., 2013). This new approach to value development is human-centered, with consumers and companies creating value together, in contrast to traditional value creation models focusing exclusively on a company's products and prices. It helps companies build stronger brand loyalty and unique competitive advantages by reaching larger markets. It gives customers a platform to understand product information, participate in corporate activities, stimulate innovation, and

achieve value co-creation. With the advent of computer and communication technologies, traditional communities have transcended the limits of time and place, moving from offline to online. Due to the rapid development of the Internet, virtual communities have evolved into a typical interactive platform that provides a new way for companies and customers to collaborate in creating value (Yonggui & Shuang, 2013). Co-creation of value by transferring and exchanging services and advantages through consumer interaction is becoming increasingly evident in businesses. This new value development strategy is human-centered, consists of consumers and other stakeholders, and focuses primarily on the firm's products and prices compared to

*Hongwei Li, East Sunshine Group Company, Ruyuan County, Shaoguan City, Guangdong Province, China. Email: 305570234@qq.com

© Copyright: The Author(s)

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted noncommercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

traditional value creation models. Co-creation of corporate value helps companies gain a clear competitive advantage, increase brand loyalty and access to broader markets, and gives customers a platform to understand product information, participate in business activities, stimulate creativity, and realize value. Co-creation. Due to the rapid development of the Internet, virtual communities have evolved into a typical interactive platform, providing a new opportunity for consumers and companies to collaborate and create value.

The 50th China Internet Development Statistics Report published by CNNIC disclosed that China had 1.051 billion internet users, with a penetration rate of 74.4%, as of June 2022. Moreover, the Internet infrastructure was fully covered, realizing "5G in counties and broadband in villages. The Internet infrastructure has been fully covered, and "5G is available in every county and village". The e-commerce transactions in China surged from 8 trillion yuan in 2012 to 42.3 trillion yuan in 2021, exhibiting an annual growth rate of 20.3% on average. The Internet brings great convenience to people in all aspects of life, such as travel, shopping, socializing, entertainment, medical care, and education. Digital technology is deeply integrated into the daily lives of ordinary people. It is constantly iterating to bridge the digital divide and promote innovation in public services and social operations, building a digital community for all to enjoy. Moreover, ordinary people are moving more professional time, entertainment time, learning time, and diversified life needs from offline to online (China Internet Development Statistics Survey, 2018).

Despite the growing prevalence of virtual brand communities, existing research on the specific dynamics in Guangdong Province, China, is limited. A gap exists in understanding the factors that stimulate co-creation value and their subsequent impact on purchase intention in this unique regional context. Furthermore, while the conceptual framework suggests a network of causal relationships involving self-service, co-reflection, user engagement, trust, co-creation value, and customer purchase intention, empirical evidence supporting these relationships within this specific context is scarce. This research aims to address these gaps by investigating and validating these relationships within Guangdong Province's virtual brand communities.

2. Literature Review

2.1 Self-Service

Fuller (2006) defined self-service as the ability of consumers to independently access and utilize resources, information, or services within an online community without direct involvement of the brand or community moderators.

Wiertz and Ruyter (2007) conceptualized self-service as consumers' active engagement in online activities, such as searching for information, posting content, or interacting with other community members without requiring the brand's or community administrators' assistance.

Self-service positively influences consumer satisfaction and loyalty in online self-service settings (Chen et al., 2018). Self-service has a positive impact on perceived convenience and ease of use, leading to increased customer loyalty (Liu et al., 2017) - Self-service can reduce perceived risk and increase trust in online transactions (Gefen et al., 2003). Based on the assumptions indicated above, the following hypothesis is developed:

H1: Self-service has a significant influence on co-creation value.

2.2 Co-Reflection

According to Baumgarth and Schmidt (2010), co-reflection is the process of customers and businesses working together to reflect on their experiences and activities to generate new value. According to Chen et al. (2019), co-reflection is a process that can be sparked by fulfilling service experiences and results in co-creation. Gursoy et al. (2019) examined the effects of co-reflection on consumers' behavioral intentions in online brand communities. They found that co-reflection positively influenced consumers' intentions to participate in brand-related activities such as reviews, recommendations, and referrals.

Co-reflection enhances consumer learning and knowledge sharing in virtual brand communities (Schau et al., 2009) - Co-reflection fosters community identification and a sense of belonging, leading to increased consumer loyalty (Wang et al., 2012). Co-reflection positively impacts consumer creativity and innovation in virtual communities (Kim et al., 2016). Based on the assumptions indicated above, the following hypothesis is developed:

H2: Co-reflection has a significant influence on co-creation value.

2.3 User Engagement

Wang et al. (2012) define User engagement, which includes the frequency and ferocity of posting, sharing, commenting, and liking, as the degree of participation, contact, and communication between users on social media sites. Bagozzi and Dholakia (2006) define user engagement as consumer involvement and participation in brand communities, including content creation, experience sharing, and feedback giving. The research of Bagozzi et al. (2006) analyzed the predictors and outcomes of user engagement in online brand communities, revealing its positive effect on consumers' brand loyalty, word-of-mouth behavior, and

purchase intention. Meanwhile, Wang et al. (2017) investigated how higher levels of user engagement could enhance consumer participation and knowledge-sharing behaviors in online brand communities.

User engagement positively influences consumer purchase intention and loyalty in social media brand communities (Park et al., 2014) - User engagement fosters community attachment and trust, increasing consumer loyalty (Chung & Shin, 2010). User engagement enhances consumer empowerment and enjoyment in virtual communities (Hsu & Lin, 2015). Based on the assumptions indicated above, the following hypothesis is developed:

H3: User engagement has a significant influence on co-creation value.

2.4 Trust

A consumer's willingness to rely on and have faith in a product or a seller is known as their level of trust. Trust is the belief that someone will keep their promises, obligations, and commitments, according to McKnight et al. (2002). According to Ganesan (1994), trust is the degree to which a buyer is prepared to rely on a seller's honesty, goodwill, and expertise in light of prior interactions. Wang et al. (2019) examined the impact of trust on user-generated content creation in online brand communities. They found that trust positively influenced consumers' content creation behavior, indicating its role in fostering consumer engagement and community participation.

Trust positively impacts consumer satisfaction, loyalty, and purchase intention in online settings (Gefen et al., 2003). Trust is a key factor in consumer decision-making and online purchasing behavior (Kim & Gupta, 2009) - Trust mediates the relationship between consumer participation and co-creation value in virtual communities (Prahalad & Ramaswamy, 2004). Based on the assumptions indicated above, the following hypothesis is developed:

H4: Trust has a significant influence on consumer purchase intention.

2.5 Co-Creation Value

Prahalad and Ramaswamy (2004) introduced the concept of co-creation value, which refers to a value mutually created by firms and consumers via interactive and collaborative procedures. Such processes involve active consumer participation, wherein their resources, ideas, and experiences are contributed to creating value. Yi and Gong (2013) studied how co-creation value affects consumer satisfaction and loyalty within the context of online brand communities. They found that co-creation value positively impacted both factors by engaging consumers. Similarly, Brodie et al. (2013) investigated the impact of co-creation value on customer

loyalty, satisfaction, and trust, highlighting that it is a crucial aspect that positively influences customer loyalty.

Co-creation value positively influences consumer satisfaction, loyalty, and purchase intention in virtual communities (Bagozzi & Dholakia, 2006) - Co-creation value mediates the relationship between consumer participation and consumer outcomes, such as loyalty and word-of-mouth (Ranjan & Read, 2016) - Co-creation value is positively related to consumer perceived value and willingness to pay a premium price (Wang et al., 2017). Based on the assumptions indicated above, the following hypothesis is developed:

H5: Co-creation value has a significant influence on consumer purchase intention.

2.6 Consumer Purchase Intention

Kim et al. (2016) defined consumer purchase intention as the cognitive process through which consumers intend to buy a product or service, which is influenced by various factors, such as attitudes, subjective norms, and perceived behavioral control. Ajzen (1991) conceptualized purchase intention as the immediate antecedent of actual purchase behavior, which is determined by consumers' attitudes towards the behavior, subjective norms, and perceived behavioral control.

Lu et al. (2016) studied the factors affecting consumer purchase intention in online brand communities and discovered that self-service, user engagement, and trust positively influenced purchase intention. These factors were mediated by perceived value and customer satisfaction. Similarly, Kim and Ko (2012) analyzed the impact of trust and perceived value on purchase intention in social commerce, revealing that both positively affected purchase intention. Additionally, trust played a mediating role between perceived value and purchase intention. Chen et al. (2018) focused on co-creation value and user engagement to understand their influence on purchase intention in online brand communities.

3. Research Methods and Materials

3.1 Research Framework

The conceptual framework of Mostafa (2016) postulates that user engagement, self-service, co-reflection, co-creation value, and user trust are significant factors that influence consumer purchase intention in online retail based on the findings and theoretical models in these three key articles. The study suggests a conceptual paradigm in which co-creation value, which mediates the relationship between user engagement and purchase intention, is directly impacted by user engagement. User trust is suggested as a direct predictor

of purchase intention, while self-service and co-reflection are presented as antecedents of co-creation value. This conceptual model serves as the theoretical foundation for this study and can be used as a framework for future research in online retail, marketing, and consumer behavior.

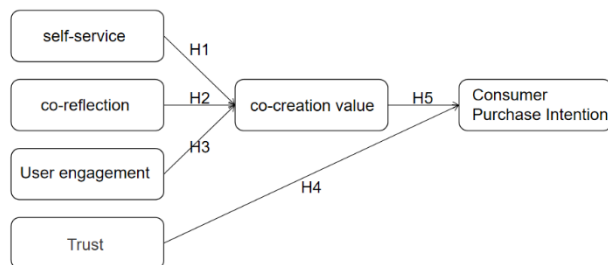


Figure 1: Conceptual Framework

H1: Self-service has a significant influence on co-creation value.

H2: Co-reflection has a significant influence on co-creation value.

H3: User engagement has a significant influence on co-creation value.

H4: Trust has a significant influence on consumer purchase intention.

H5: Co-creation value has a significant influence on consumer purchase intention.

3.2 Research Methodology

Using a quantitative Nonprobability sampling, the researchers distributed data via an online questionnaire to a representative group of users of five virtual communities in the province, all of whom had extensive online shopping experience—collecting and analyzing the key factors that affect the behavior intention of virtual community users. The survey is divided into three parts. First, the screening questions were used to identify the characteristics of the respondents. Second, five proposed variables, ranging from strong opposition (1) to strong agreement (5), were measured using the Likert 5-point scale to analyze all five hypotheses. Finally, demographic issues include gender, age, education, and household income.

The objective consistency index (IOC) and pilot test were carried out on 50 subjects. The validity and reliability of Cronbach's alpha method were tested. In the context of the IOC analysis, we engaged three experts to evaluate each item on the scale, and every item received a rating of 0.6 or above. Additionally, we carried out a preliminary test involving 50 participants and determined reliability through the Cronbach alpha coefficient. The results revealed that all the questionnaire items exhibited strong internal consistency,

with a reliability score surpassing 0.7 (Hair et al., 2006).

A total of 500 questionnaires were sent to target respondents through reliability tests. The researchers analyzed the collected data using SPSS AMOS 26.0. Then, the convergence accuracy is verified by confirmatory factor analysis (CFA). Under the condition of given data, the model fitting degree is calculated through the whole test to ensure the validity and reliability of the model. Finally, the researchers applied structural equation modeling (SEM) to examine the effects of variables.

3.3 Population and Sample Size

The target population is 2,472 users, representing virtual communities in Guangdong Province, China. The sample size for this study was based on Daniel Soper's statistical calculations. The researcher entered the required parameters with an expected effect size of 0.2, an expected statistical power level of 0.8, several latent variables of 6, several observed variables of 33, and a probability level 0.05. The calculations indicated that this study's recommended minimum sample size should be at least 403 population. According to Israel (1992), to implement a more rigorous degree impact assessment, the appropriate sample size for multiple regression, log-linear analysis, and analysis of covariance processes should be 200- 500.

3.4 Sampling Technique

In this study, judgmental sampling method is used to select five user groups representing virtual communities in Guangdong Province, China. Then, stratified random sampling was used to sample users from Xiaomi Fans Club, Perfect Diary Brand WeChat Group, Watson's official user community, Starbucks WeChat User Community, and NetEase Cloud Music Virtual Community, as shown in Table 1. Then, the researcher employs convenience sampling methods to obtain the final target population through the online and offline distribution of questionnaires.

Table 1: Sample Units and Sample Size

Target Communities	Population Size	Proportional Sample Size
Xiaomi Fans Club	425	85
Perfect Diary Brand WeChat Group	487	99
Watsons official user community	532	108
Starbucks WeChat User Community	405	82
NetEase Cloud Music Virtual Community	623	126
Total	2,472	500

Source: Constructed by author

4. Results and Discussion

4.1 Demographic Information

In this study, 500 questionnaires were distributed to all target students by stratified random sampling. Screening questions help to weed out unqualified participants. The final sample size was 486 users from five representative virtual communities in Guangdong province. In Table 2, most participants were men (52.06%) and women (45.47%), 2.47% of users were reluctant to disclose their gender. The most common age group was 26-30 years old (31.07%), 25 or less (25.93%), 31 to 35 (19.75%), and 36 to 40 (10.49%). The survey found that 309 people (63.5%) were married, and 177 (36.5%) were single. The highest percentage of household income was Below 20,000 302 (62.14%), 20,000-50,000 136 (27.98%), 50,000-80,000 is 35 (7.20%), and 10,000 above was the lowest is 5 (1.03%).

Table 2: Demographic Profile

Demographic and General Data (N=486)		Frequency	Percentage
Gender	Male	253	52.06%
	Female	221	45.47%
	Prefer not to tell	12	2.47%
Age	25 or less	126	25.93%
	26 to 30	151	31.07%
	31 to 35	96	19.75%
	36 to 40	51	10.49%

Demographic and General Data (N=486)		Frequency	Percentage
Education level	41 to 45	36	7.41%
	More than 45	26	5.35%
	Lower than under-graduate degree	207	42.59%
	Under-graduate degree	199	40.95%
	Master degree	72	14.81%
Marital status	Doctorate degree	8	1.65%
	Single	177	36.5%
Family income (RMB/Monthly)	Married	309	63.5%
	Below 20,000	302	62.14%
	20,000-50,000	136	27.98%
	50,000-80,000	35	7.20%
	80,000-100,000	8	1.65%
	10,000 above	5	1.03%

Source: Constructed by author

4.2 Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis (CFA) was used in this study. All terms in each variable are significant and represent factor loads to test discriminant validity. The significance and acceptability of the factor load for each item indicate goodness of fit (Hair et al., 2006). In Table 3, the factor load value was greater than 0.30, and the p-value was less than 0.05. The cut-off points with composite reliability are greater than 0.7, and the cut-off points with an average variance extracted are greater than 0.5 (Fornell & Larcker, 1981).

Table 3: Confirmatory Factor Analysis Result, Composite Reliability (CR) and Average Variance Extracted (AVE)

Variables	Source of Questionnaire (Measurement Indicator)	No. of Item	Cronbach's Alpha	Factors Loading	CR	AVE
Self-service (SS)	Fuller (2006)	5	0.894	0.777-0.818	0.895	0.629
Co-reflection (CR)	Baumgarth and Schmidt (2010)	5	0.867	0.735-0.771	0.867	0.565
User engagement (UE)	Wang et al. (2012)	9	0.935	0.775-0.797	0.935	0.617
Trust (T)	McKnight et al. (2002)	5	0.858	0.734-0.753	0.858	0.548
Co-creation value (CV)	Yi and Gong (2013)	6	0.877	0.721-0.752	0.877	0.542
Consumer purchase intention (CPI)	Kim et al. (2016)	3	0.888	0.845-0.859	0.888	0.726

The fit metrics selected are the same as the CFA, including Chi-square statistics (CMIN/df), Goodness of Fit index (GFI), adjusted Goodness of Fit Index (AGFI), Norm Fit Index (NFI), Comparative Fit Index (CFI), Tuck-Lewis Index (TLI), and approximate root mean square error (RMSEA). These indices will assess seven potential variables, namely perceived quality, perceived value, student interaction, teaching process, teaching content, student satisfaction, and student engagement. The results show all values passes a criterion and represent the measurement model fit, as shown in Table 4.

Table 4: Goodness of Fit for Measurement Model

Fit Index	Acceptable Criteria	Statistical Values
CMIN/DF	<3.00 (Hair et al., 2006)	1.539
GFI	≥0.90 (Hair et al., 2006)	0.918
AGFI	≥0.90 (Hair et al., 2006)	0.904
NFI	≥0.90 (Arbuckle, 1995)	0.924
CFI	≥0.90 (Hair et al., 2006)	0.972
TLI	≥0.90 (Hair et al., 2006)	0.969
RMSEA	<0.05 (Browne & Cudeck, 1993)	0.033
Model Summary		In harmony with empirical data

Remark: CMIN/DF = The ratio of the chi-square value to degree of freedom, GFI = Goodness-of-fit index, AGFI = Adjusted goodness-of-fit index, NFI = Normed fit index, CFI = Comparative fit index, TLI = Tucker-Lewis index and RMSEA = Root mean square error of approximation.

In this study, the values shown in Table 5 are all greater than the acceptable values, which verifies the convergence and discriminant validity. The square root of the extracted mean-variance determines that all correlation coefficients are greater than the corresponding correlation values. Thus, the convergent validity and discriminant validity of the algorithm are guaranteed. In addition, the measurement results of these models can also comfort the discriminant validity and validate the validity of subsequent structural model estimates.

Table 5: Discriminant Validity

	SS	CR	UE	T	CV	CPI
SS	0.793					
CR	0.507	0.752				
UE	0.335	0.417	0.785			
T	0.358	0.454	0.335	0.740		
CV	0.351	0.352	0.339	0.327	0.736	
CPI	0.491	0.578	0.525	0.504	0.438	0.852

Note: The diagonally listed value is the AVE square roots of the variables

Source: Created by the author.

4.3 Structural Equation Model (SEM)

According to Hair et al. (2010), structural equation modeling (SEM) verifies the dependencies between the proposed model's variables and includes the structural coefficients' measurement errors. The goodness of fit index was used to evaluate the model fit of the structural model. The measurement of the goodness of the structural equation model (SEM) fitting index is shown in Table 6. The statistical results were CMIN/DF = 1.755, GFI = 0.907, AGFI = 0.893, NFI=0.912, CFI = 0.960, TLI = 0.957, RMSEA =0.039.

Table 6: Goodness of Fit for Structural Model

Index	Acceptable	Statistical Values
CMIN/DF	<3.00 (Hair et al., 2006)	1.755
GFI	≥0.90 (Hair et al., 2006)	0.907
AGFI	≥0.90 (Hair et al., 2006)	0.993
NFI	≥0.90 (Arbuckle, 1995)	0.912
CFI	≥0.90 (Hair et al., 2006)	0.960
TLI	≥0.90 (Hair et al., 2006)	0.957
RMSEA	<0.05 (Browne & Cudeck, 1993)	0.039
Model Summary		In harmony with Empirical data

Remark: CMIN/DF = The ratio of the chi-square value to degree of freedom, GFI = Goodness-of-fit index, AGFI = Adjusted goodness-of-fit index, NFI = Normed fit index, CFI = Comparative fit index, TLI = Tucker-Lewis index and RMSEA = Root mean square error of approximation.

4.4 Research Hypothesis Testing Result

The magnitude of the correlation between the proposed independent and dependent variables in the hypothesis is measured by the regression coefficient or the standardized path coefficient. As shown in Table 7, all five hypotheses proposed are supported. The trust of virtual community users in Guangdong strongly impacts customer behavior intention, followed by Co-creation value.

The research model determines the importance of each construct from the standardized path coefficients (β) and t-values shown in Table 7. Since the significance of the hypothesis is supported at $p = 0.05$, trust has the greatest effect on customer behavioral intentions at $\beta = 0.44$ and t value = 8.66. Secondly, Co-creation value significantly influences customer purchase intention when $\beta = 0.33$ and t-value = 6.86.

Table 7: Hypothesis Results of the Structural Equation Modeling

Hypothesis	(β)	t-Value	Result
H1: SS→CV	0.203	3.52*	Supported
H2: CR→CV	0.182	2.98*	Supported
H3: UE→CV	0.213	4.04*	Supported
H4: T→CPI	0.44	8.66*	Supported
H5: CV→CPI	0.33	6.86*	Supported

Note: * $p < 0.05$

Source: Created by the author

H1 verified that consumers in the Guangdong region use self-service in virtual brand communities, positively and significantly impacting co-creation value. The standardized coefficient value = 0.203, with a t-value =3.52. This result is consistent with the results of many literatures (Chen et al., 2017; Gefen et al., 2003; Liu et al., 2017). **H2** verified that co-reflection has a positive and significant impact on co-creation value. The standardized coefficient value = 0.182, with a t-value =2.982, is supported by many scholars (Kim et al., 2013; Schau et al., 2009; Wang et al., 2012). **H3** verifies that user engagement positively and significantly impacts co-creation value. The standardized coefficient value = 0.213, with a t-value =4.04, which is the same as many research results (Hsu & Lin, 2015; Park et al., 2014). **H4** verified that Trust has a positive and significant impact on customers' purchase intention. The standardized coefficient value = 0.44, with a t-value =8.66, in the virtual community brand network environment, Trust has a strong positive impact on consumer satisfaction, loyalty, and purchase intention, which is supported by many literatures (Gefen, 2002; Kim & Gupta, 2009). **H5** verifies that co-creation value positively and significantly impacts customers' purchase intention. The standardized coefficient value = 0.33, with a t-value =6.86. This research result is the same as that of much literature, which confirms that in virtual communities, the Co-creation of value positively affects

consumers' purchase behavior intention (Bagozzi & Dholakia, 2006; Wang et al., 2017).

5. Conclusion and Recommendation

5.1 Conclusion and Discussion

This study will examine the impact of self-service, co-reflection, and user engagement on co-creation value in virtual brand communities in Guangdong Province. In addition, this study will explore the mediating role of trust between co-creation value and consumer purchase intention. The questionnaire was developed and distributed to a target sample of customers from Guangdong's five representative virtual community brands. Confirmatory factor analysis (CFA) was used to measure and test the validity and reliability of the conceptual model. Therefore, this paper uses structural equation modeling (SEM) to analyze the influencing factors of co-creation value and purchase intention of online virtual community brands.

The results are as follows. Trust has the most significant effect on customers' purchase intention. Trust is an important variable in consumer behavior research. It is generally considered a state of mind with positive expectations of others' behaviors or intentions (Rousseau et al., 1998). Trust can also be understood as the belief that the needs of one party will be met through actions of the other party in the future (Anderson & Weitz, 1992), such as consumer confidence and positive expectations that the company can meet its needs (Basha et al., 2015; Gounaris, 2005). Consumers' purchasing behaviors and behaviors beyond purchasing are widely influenced by trust (Chuah et al., 2020), which is especially prominent when buying organic food (Lee et al., 2019; Nuttavuthisit & Thøgersen, 2017; Vega-Zamora et al., 2019).

Secondly, value co-creation on customer's willingness to purchase intention is very significant. Customer value co-creation and participation intention are conducive to enhancing customer willingness to buy. The higher the degree of customer value co-creation and participation, the stronger the purchase intention of customers (CossioSilva et al., 2016; Oyner & Korelina, 2016; See-To & Ho, 2014; Tuan, 2017).

Third, user engagement has a significant impact on co-creation value. User engagement positively influences consumer purchase intention and loyalty in social media brand communities (Park et al., 2014).

Fourth, the self-service and reflection of customers have a significant impact on the value of co-creation. Self-service positively influences consumer satisfaction and loyalty in online self-service settings (Chen et al., 2017).

5.2 Recommendation

In this study, we found that customer trust and co-creation strongly affect customer purchase intention among five representative virtual community brands in Guangdong Province, China. Self-service, mutual reflection, and user participation positively affect co-creation value. Therefore, the study's results made the following recommendations:

First, enhancing consumer trust in the virtual brand community. The results show that increasing trust can increase consumers' willingness to buy, so enterprises need to take various measures to enhance consumers' trust in the brand community. Increasing the interaction of marketing activities and online word-of-mouth in the brand community is conducive to promoting the brand community, and enterprises can accumulate a virtual brand community by releasing raffles to enhance the interaction of marketing activities. Enterprises should also attach importance to word-of-mouth marketing in the virtual brand community, constantly consolidate the existing brand word-of-mouth through word-of-mouth communication, publicize the answers and feedback to the relevant questions of the community consumers, and continuously attract new consumers to join.

Second, in order to better play the role of customer value co-creation and participation, enterprises should carry out the systematic design of customer value co-creation and participation activities, actively guide their participation behavior, focus on customer participation in information search and responsible behavior to improve the effectiveness of participation; reduce customer participation in information sharing and interpersonal interaction, avoid weakening the effect of participation by adding unnecessary psychological cost to customers.

Third, enhance the customer experience in customer participation. Only by improving customer experience can customer value co-creation and participation behavior be transformed into purchase intention. In the practice of management, enterprises can enrich the types and levels of customer experience according to the needs and characteristics of target customers, and design can attract the target group's sensory experience, emotional experience, thinking experience, action experience, and related experience so that the target customer's experience to get an all-round promotion.

5.3 Limitation and Further Study

This study also has some limitations. Based on the technology acceptance model, this study considers that trust and co-creating value are the internal mechanisms of virtual

community consumers' influence on purchasing intention. However, trust and value co-creation may also affect consumers' purchasing intentions through other paths. Therefore, future research needs to explore possible alternative impact paths to understand better how trust and co-created value affect purchase intention. The data were collected through a web-based questionnaire, which may lead to bias in sample representativeness. In future studies, we can consider using multiple data collection methods to reduce sample bias and further enhance research results' accuracy.

References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179-211. [https://doi.org/10.1016/0749-5978\(91\)90020-t](https://doi.org/10.1016/0749-5978(91)90020-t)
- Anderson, E., & Weitz, B. (1992). The use of pledges to build and sustain commitment in distribution channels. *Journal of Marketing Research*, 29(1), 18-34. <https://doi.org/10.1177/002224379202900103>
- Arbuckle, J. L. (1995). *Amos 4.0 User's Guide* (1st ed.). Small Waters.
- Bagozzi, R. P., & Dholakia, U. M. (2006). Antecedents and purchase consequences of customer participation in small group brand communities. *International Journal of research in Marketing*, 23(1), 45-61. <https://doi.org/10.1016/j.ijresmar.2006.01.005>
- Bagozzi, R. P., Dholakia, U. M., & Mookerjee, A. (2006). Individual and group bases of social influence in online environments. *Media Psychology*, 8(2), 95-126. https://doi.org/10.1207/s1532785xmep0802_3
- Basha, M. B., Mason, C., Shamsudin, M. F., Hussain, H. I., & Salem, M. A. (2015). Consumers attitude towards organic food. *Procedia Economics and Finance*, 31, 444-452.
- Baumgarth, C., & Schmidt, M. (2010). How strong is the business-to-business brand in the workforce? An empirically-tested model of 'internal brand equity' in a business-to-business setting. *Industrial Marketing Management*, 39(8), 1250-1260. <https://doi.org/10.1016/j.indmarman.2010.02.022>
- Brodie, R. J., Ilic, A., Juric, B., & Hollebeek, L. (2013). Consumer engagement in a virtual brand community: An exploratory analysis. *Journal of business research*, 66(1), 105-114. <https://doi.org/10.1016/j.jbusres.2011.07.029>
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen and J. S. Long (Eds.), *Testing structural equation models* (pp. 136-162). Sage
- Chen, H., Johnson, M., Boland, E., Seymour, J., & Macleod, U. (2019). Emergency admissions and subsequent inpatient care through an emergency oncology service at a tertiary cancer centre: service users' experiences and views. *Supportive Care in Cancer*, 27(2), 451-460. <https://doi.org/10.1007/s00520-018-4328-5>
- Chen, J., Yin, X., & Mei, L. (2018). Holistic innovation: An emerging innovation paradigm. *International Journal of Innovation Studies*, 2(1), 1-13. <https://doi.org/10.1016/j.ijis.2018.02.001>
- Chen, P., Chavez, O., Ong, D. C., & Gunderson, B. (2017). Strategic resource use for learning: A self-administered intervention that guides self-reflection on effective resource use enhances academic performance. *Psychological science*, 28(6), 774-785. <https://doi.org/10.1177/0956797617696456>
- China Internet Development Statistics Survey. (2018, February 4). *The 47th Statistical Report on China's Internet Development*. <https://chinainternetsurvey.net/>
- Chuah, S. H.-W., El-Manstrly, D., Tseng, M.-L., & Ramayah, T. (2020). Sustaining customer engagement behavior through corporate social responsibility: the roles of environmental concern and green trust. *Journal of Cleaner Production*, 262, 121348. <https://doi.org/10.1016/j.jclepro.2020.121348>
- Chung, K., & Shin, J.-I. (2010). The antecedents and consequents of relationship quality in internet shopping. *Asia Pacific Journal of Marketing and Logistics*, 22(4), 473-491. <https://doi.org/10.1108/13555851011090510>
- CossioSilva, F. J., Revilla-Camacho, M. A., & Vega-Vazquez, M. A. (2016). Value co-creation and customer loyalty. *Journal of Business Research*, 69(5), 1621-1625.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, 18(1), 39-50.
- Fuller, J. T. (2006). BGH v. 21.12.2004—VI ZR 306/03, Auszahlung zweckgebundener öffentlicher Mittel an unberechtigte Empfänger (Füller). *Juristische Rundschau*, 5(1), 1-10.
- Ganesan, S. (1994). Determinants of long-term orientation in buyer-seller relationships. *Journal of marketing*, 58(2), 1-19. <https://doi.org/10.2307/1252265>
- Gefen, D. (2002). Customer Loyalty in E-Commerce. *Journal of the Association for Information Systems*, 3, 27-51. <https://doi.org/10.17705/1jais.00022>
- Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *MIS quarterly*, 1(2), 51-90. <https://doi.org/10.2307/30036519>
- Gounaris, S. P. (2005). Trust and commitment influence on customer retention: insights from business-to-business services. *J. Bus. Res.*, 58(2), 126-140. [https://doi.org/10.1016/s0148-2963\(03\)00122-x](https://doi.org/10.1016/s0148-2963(03)00122-x)
- Gursoy, D., Chi, O. H., Lu, L., & Nunkoo, R. (2019). Consumers acceptance of artificially intelligent (AI) device use in service delivery. *International Journal of Information Management*, 49, 157-169. <https://doi.org/10.1016/j.ijinfomgt.2019.03.008>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis* (7th ed.). Pearson.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. (2006). *Multivariate Data Analysis* (6th ed.). Pearson International Edition.
- Hsu, C. L., & Lin, J. C. C. (2015). What drives purchase intention for paid mobile apps?—An expectation confirmation model with perceived value. *Electronic commerce research and applications*, 14(1), 46-57. <https://doi.org/10.1016/j.elerap.2014.11.003>

- Israel, G. D. (1992). *Determining sample size*. University of Florida Cooperative Extension Service, Institute of Food and Agriculture Sciences
- Kim, A. J., & Ko, E. (2012). Do social media marketing activities enhance customer equity? An empirical study of luxury fashion brand. *Journal of Business Research*, 65(10), 1480-1486. <https://doi.org/10.1016/j.jbusres.2011.10.014>
- Kim, C. M., Kim, M., Lee, C., Spector, J., & DeMeester, K. (2013). Teacher beliefs and technology integration. *Teaching and Teacher Education*, 29(1), 76-85. <https://doi.org/10.1016/j.tate.2012.08.005>
- Kim, H. W., & Gupta, S. (2009). A Comparison of Purchase Decision Calculus between Potential and Repeat Customers of an Online Store. *Decision Support Systems*, 47, 477-487. <http://dx.doi.org/10.1016/j.dss.2009.04.014>
- Kim, J., Song, H., & Lee, C.-K. (2016). Effects of corporate social responsibility and internal marketing on organizational commitment and turnover intentions. *International Journal of Hospitality Management*, 55, 25-32. <https://doi.org/10.1016/j.ijhm.2016.02.007>
- Lee, T. H., Fu, C.-J., & Chen, Y. Y. (2019). Trust factors for organic foods: consumer buying behavior. *British Food Journal*, 122(2), 414-431. <https://doi.org/10.1108/BFJ-03-2019-0195>
- Liu, J., Kummerow, C. D., & Elsaesser, G. S. (2017). Identifying and analyzing uncertainty structures in the TRMM Microwave Imager precipitation product. *International Journal of Remote Sensing*, 38(1), 23-42. <https://doi.org/10.1080/01431161.2016.1259676>
- Lu, B., Fan, W., & Zhou, M. (2016). Social Presence, Trust, and Social Commerce Purchase Intention, an Empirical Research. *Computers in Human Behavior*, 56, 225-237. <https://doi.org/10.1016/j.chb.2015.11.057>
- McKnight, D. H., Choudhury, V., & Kacmar, C. (2002). The impact of initial consumer trust on intentions to transact with a web site: a trust building model. *The journal of strategic information systems*, 11(3-4), 297-323. [https://doi.org/10.1016/S0963-8687\(02\)00020-3](https://doi.org/10.1016/S0963-8687(02)00020-3)
- Mostafa, R. B. (2016). Value co-creation in industrial cities: A strategic source of competitive advantages. *Journal of Strategic Marketing*, 24(2), 144-167. <https://doi.org/10.1080/0965254x.2015.1076885>
- Nuttavuthisit, K., & Thøgersen, J. (2017). The importance of consumer trust for the emergence of a market for green products: the case of organic food. *Journal of Business Ethics*, 140, 323-337. <https://doi.org/10.1007/s10551-015-2690-5>
- Oyner, O., & Korelina, A. (2016). The influence of customer engagement in value co-creation on customer satisfaction: Searching for new forms of co-creation in the Russian hotel industry. *Worldwide Hospitality & Tourism Themes*, 8(3), 327-345. <https://doi.org/10.1108/whatt-02-2016-0005>
- Park, J., Lee, H., & Kim, C. (2014). Corporate social responsibilities, consumer trust and corporate reputation: South Korean consumers' perspectives. *Journal of Business Research*, 67(3), 295-302. <https://doi.org/10.1016/j.jbusres.2013.05.016>
- Porter, C. E., Devaraj, S., & Sun, D. (2013). A Test of Two Models of Value Creation in Virtual Communities. *Journal of Management Information Systems*, 30(1), 261-292. <https://doi.org/10.2753/mis0742-1222300108>
- Prahalad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. *Journal of interactive marketing*, 18(3), 5-14. <https://doi.org/10.1002/dir.20015>
- Ranjan, K. R., & Read, S. (2016). Value co-creation: Concept and measurement. *Journal of the Academy of Marketing Science*, 44(3), 290-315. <https://doi.org/10.1007/s11747-014-0397-2>
- Rousseau, D., Sitkin, S., Burt, R., & Camerer, C. (1998). Not so different after all: a cross discipline view of trust. *Acad. Manag. Rev.*, 23(3), 1-10. <https://doi.org/10.5465/AMR.1998.926617>
- Schau, H. J., Muñiz, A. M., & Arnould, E. J. (2009). How brand community practices create value. *Journal of marketing*, 73(5), 30-51. <https://doi.org/10.1509/jmkg.73.5.30>
- See-To, E. W. K., & Ho, K. K. W. (2014). Value co-creation and purchase intention in social network sites: The role of electronic Word-of-Mouth and trust – A theoretical analysis. *Computers in Human Behavior*, 31(1), 182-189. <https://doi.org/10.1016/j.chb.2013.10.013>
- Tuan, L. T. (2017). Under entrepreneurial orientation, how does logistics performance activate customer value co-creation behavior?. *Int. J. of Logistics Management*, 28(2), 600-633. <https://doi.org/10.1108/ijlm-12-2015-0242>
- Vega-Zamora, M., Torres-Ruiz, F. J., & Parras-Rosa, M. (2019). You Are What You Eat: The Relationship between Values and Organic Food Consumption. *Sustainability*, 12(9), 3900. <https://doi.org/10.3390/su12093900>
- Wang, H., Fan, X., & Ouyang, J. (2017). Consumer self-construal, need of uniqueness and preference of brand logo shape. *Acta Psychologica Sinica*, 49(8), 1113. <https://doi.org/10.3724/sp.j.1041.2017.01113>
- Wang, X., Yu, C., & Wei, Y. (2012). Social media peer communication and impacts on purchase intentions: A consumer socialization framework. *Journal of interactive marketing*, 26(4), 198-208. <https://doi.org/10.1016/j.intmar.2011.11.004>
- Wang, X., Zhang, Y., & Blair, S. S. (2019). Fat-regulated adaptor protein Dlish binds the growth suppressor Expanded and controls its stability and ubiquitination. *Proceedings of the National Academy of Sciences*, 116(4), 1319-324. <https://doi.org/10.1073/pnas.1811891116>
- Wiertz, C., & Ruyter, K. (2007). Beyond the call of duty: Why customers contribute to firm-hosted commercial online communities. *Organization studies*, 28(3), 347-376. <https://doi.org/10.1177/0170840607076003>
- Yi, Y., & Gong, T. (2013). Customer value co-creation behavior: Scale development and validation. *Journal of Business research*, 66(9), 1279-1284. <https://doi.org/10.1016/j.jbusres.2012.02.026>
- Yonggui, W., & Shuang, M. (2013). An empirical study on the driving factors of customer interaction in virtual brand community and its impact on customer satisfaction. *Journal of Management*, 1(9), 1375-1383.