The Effect of Consumer Acquisition Process on the Consumer Satisfaction in Purchasing Fresh Food Online under the Context of COVID-19

Abstract

Purpose – The purpose of this study is to identify factors that may influence Chinese customers' satisfaction in purchasing fresh food online after COVID-19.

Methodology – In this paper, the authors propose a model of the satisfaction process in the e-commerce environment. The relationship between their satisfaction with E-WOM and behavioral intentions was also examined. Path analysis of simple linear regression was applied to conduct the hypothesis test based on 266 usable data, consisting of two sub-samples from online and offline.

Findings – The analytical results suggest that nine constructs – information quality, website design, security, payment, delivery, and customer service are strong predictors of customer satisfaction. Meanwhile, consumer satisfaction is positively related to both behavioral intention and E-WOM.

Originality/Value – This research contributes to the study of online shopping customer satisfaction by: developing a model of the satisfaction process in online purchasing for fresh food under the context of COVID-19. The results could be of high managerial value to merchants in the emerging industry of online fresh food.

Limitations - Further research should take control over the differences across product categories and consider any other industries to assure that the measurement works equally well. Future research could also probe more on the underlying intricate correlation between these variables.

Keywords: consumer satisfaction, consumer acquisition process, online shopping, consumer behavior, fresh food.

1. Introduction

Online shopping has become drastically important in China, evinced by the data that a total transaction value of which has come to about 600 billion USD in 2015 (CNNIC,2016). Furthermore, there has been a growth of 14.3 percent in 2014 and 8.8 percent in 2015 (CNNIC, 2015; CNNIC, 2016). In comparison with traditional brick-and-mortar stores, Online shopping is more convenient for customers to compare and contrast among certain goods and their alternatives (Alba et al., 1997; Shankaret al., 2003). It also provides more varied kinds of goods than local markets, and most of them delivered the goods directly to home (Huang and Oppewal, 2006; Chu et al., 2010).

Among the growing trend in online shopping, food/grocery takes one crucial part. According to Chinaidr (2017), the food market doubled each year from 2010 to 2015 despite being a late start industry. There has been shown an increase of 53 percent annually from 2012 to 2016 (Bernard and Chen, 2017) and it has made up the largest proportion of 32 percent of the world's e-grocery market. The perishable nature of foods also makes it unique because it usually has a short shelf life. Lastly, Chinese customers consider food safety as the most important consideration among all its features (Jin et al., 2017; Wang et al., 2019; Jiang et al., 2019). Therefore, understanding the factors that influence the online purchase of food is of great importance to e-commerce.

There has been relatively rich literature in the online food purchasing process (Liu et, al., 2008; Rita, Oliveira and Farisa, 2019; Zheng et, al., 2020). They all pointed out several common features before, during and after the purchase process, including information quality, delivery, price, have significant impact on customers' satisfaction. Rita, Oliveira and Farisa (2019) and Zheng et, al., (2020) made further suggestion that satisfaction would have an impact on customers' next step action, including E-WOM and behavioral intention.

However, the break of COVID-19 brings much uncertainty in the previous conclusion due to the strict policy in China. Since the announcement of lockdown in Chinese top metropolitans, such as Beijing and Shanghai, food rush and hoarding have happened ubiquitously (Lufkin, 2020). Online purchasing of grocery food then appears to help alleviate food hoarding since it provides a safe and fast approach without being risky in large groups of people. Accordingly, fresh food sold on e-commerce platforms in Shanghai leaped up to 267% (Sheng, 2020). The data also gives an increment of 127.5% in daily active users and the revenue per order rises from 40 to 100 RMB. There has been no article in substantiate previous results under this new context in China so far, to the authors' knowledge scale. Additionally, culture differences (David, 2007) and logistics (Sharma et, al., 1997) would also influence customer satisfaction. As China is under rapid development and going through the trend of globalization, the factors that influence satisfaction may deviate from previous research.

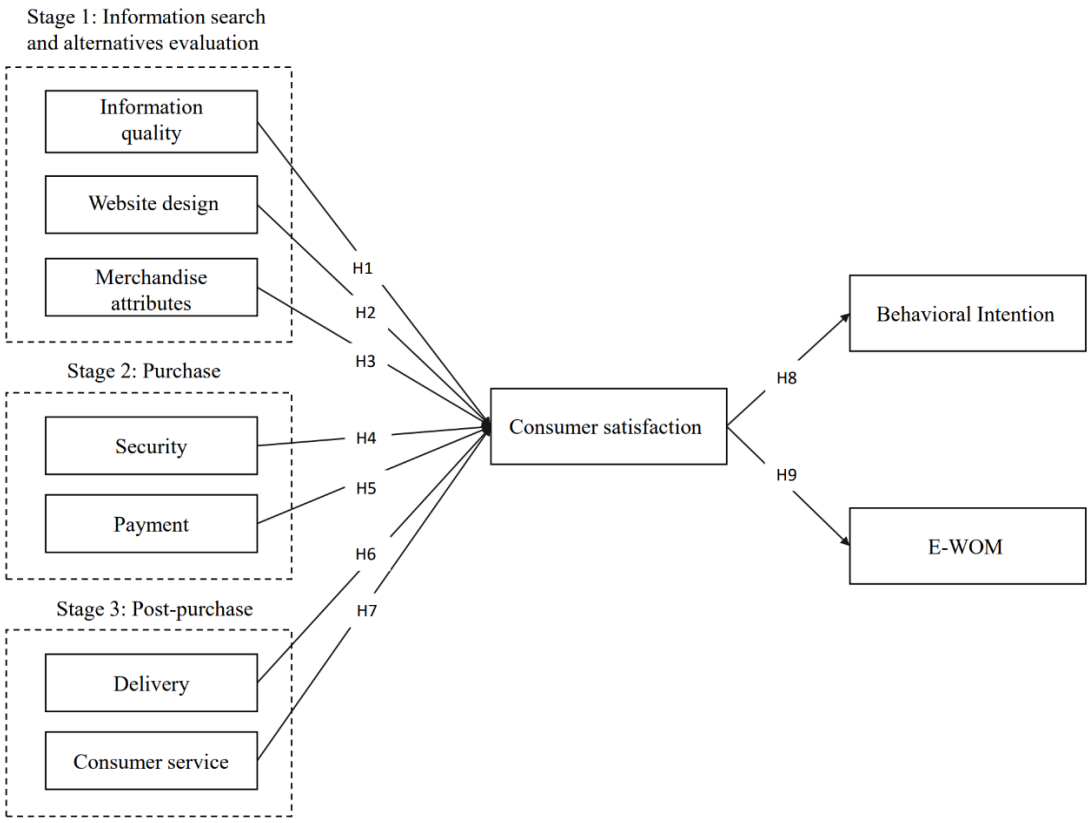
Based on previous research (Kim and Stoel, 2004 Liu et, al., 2008; Blunt, 2016; Rita, Oliveira and Farisa, 2019), the purpose of this research is to locate key constructs and its measurement to examine the satisfaction of online grocery purchase. We firstly formulate a hierarchical model and test a group of hypotheses. Through this whole process, this research contributes to the study of E-commerce by developing a model under a new context. It would also provide valuable insights for guidance to relative companies and improve them better under a competitive online market for fresh food.

2. Literature Review

Lu et al. (2020) pointed out that consumer satisfaction involves two stimuli: an outcome and a comparison. This implies that consumers' satisfaction is fulfilled when the product or service performance exceeds their expectations. Although there exists extensive research examining the determinants of consumer satisfaction both in the traditional retailers and online business, there has been a lack of research in the field of online fresh food buying. Foregoing studies has laid a general basis for factors determining e-satisfaction, such as service quality (Jeon and Jeong, 2017; Pee et al., 2018), purchasing behavior (Pham and Ahammad, 2017) and consumer spending (Nisar and Prabhakar, 2017). However, no consensus is achieved till now in terms of how these factors affect customers' satisfaction (Shaupp and Be´langer, 2005). Additionally, Kotler (2017) suggested that satisfaction is a consequence of various elements involved in the overall purchasing stage. Prior studies, in contrast, mainly focus on evaluating consumer satisfaction at the purchasing and pre-purchasing stage, while few empirical studies have been conducted from the perspective of the total purchase process and consumers' future behavior (Liu, et al., 2008). Though an overall model of internet shopping consisting of interactivity, transaction and fulfillment is proposed by Chen and Chang (2003), yet this model is outdated and lacks theoretical background.

According to Kotler (1997), satisfaction is relevant to various factors during every stage of purchase, including need arousal, information search, alternatives evaluation, purchasing decision, and post- purchase behavior. Moreover, previous literature shows that the outcome of customer satisfaction is positively related to some consumer behavior such as repurchase intention and WOM (Pita et al., 2019). Fig. 1 demonstrates the conceptual framework for consumer acquisition, consumer satisfaction and future consumer behavioral intention. The consumer acquisition process is categorized into three stages in a time order: information search and alternatives evaluation at the pre-purchase stage, purchase stage, and post-purchase stage. The purchase stage is constructed by three elements including information quality, website design and merchandise attributes. Security and payment will play their role during the purchasing process. At the post-purchase stage, delivery and consumer service will both influence satisfaction. Consumer behavioral intention is measured by their repurchase willingness and frequency. This model is built upon research conducted by Kotler (1997), Gounaris et al. (2010), Blut (2016), Rasheed and Abadi (2014) and Lu et al. (2020) to study the impact of the consumer acquisition process on satisfaction as well as the impact of satisfaction on their future behavioral intention.

Fig1. Conceptual Framework



2.1 Information search and alternatives evaluation stage

2.1.1 The impact of information quality on consumer satisfaction

According to Alshikhi and Abdullah (2018), information quality is a set of useful data which has been processed with the intention of increasing the knowledge of the data users. The quality of information can be measured by multi-dimensional constructs. Some of the indicators of information quality involved in user satisfaction are accuracy, reliability, completeness, personalization, understandability and relevancy (Blut ,2016; Holloway and Beatty, 2008). In the complex and uncertain commercial environment, information quality has become increasingly influential during the decision-making process (Alshikhi and Abdullah, 2018). Ghasemaghaei and Hassanein (2015) also pointed out that consumers attach high value to reliable information when faced with huge amounts of online product information of uncertain reliability. Therefore, extensive and high-quality information will result directly in higher levels of customer satisfaction (Liu, et, al.,2008). As such, the following hypothesis is proposed:

H1: Information quality is positively related to consumer satisfaction.

2.1.2 The impact of website design on consumer satisfaction

Website design refers to all the aspects of the customer experience related to the website

(Rita, et, al., 2019). Cox and Koelzer (2004) pointed out that an efficient website should be both transaction-oriented and customer-oriented. This is supported by Cyr (2008), indicating that good website design lies in its navigation capability and aesthetic characteristics. Several studies had found a positive relationship between website design and consumer satisfaction. For example, based on empirical research conducted by Lee et al. (2020), good websites design will enhance customer satisfaction towards online fresh food purchases and their perceived serviced service quality. Duarte et al. (2018) also found that shopping online is more likely to be perceived as pleasurable by consumers when the platform is well-structured and easy to use. These previous research results indicate that the navigation and visual design of a website will exert a positive influence on consumer satisfaction.

H2: Website site design is positively related to consumer satisfaction.

2.1.3 The impact of merchandise attributes on consumer satisfaction

Merchandise attributes play a significant role in determining the customers' satisfaction with their online shopping experience and can be evaluated from different aspects, including product variety, price, quality and safety. (Chen and Chang, 2003; Hwang, 2013; Mutum, 2014; Namkung & Jang, 2007; Duarte, et, al., 2018). Wider assortments of products will be attractive to customers and lead to more positive e-satisfaction (Rita, et al., 2019). Although some scholars believe that customers no longer focus as much on prices as before with the growth of the online food market (Mutum,2014), one most cited reason for online shopping among respondents is the price in Chen and Chang's research (2003). Moreover, due to the growing preference for healthy and organic foods, product quality in the food market has gained increasing attention from customers (Lee, 2020). For instance, a study conducted by Gwon, Park and Kim (2015) revealed that the safety of agricultural products will have a significant effect on customer satisfaction and continuous buying. Hwang (2013) also derived product quality as a vital construct of satisfaction. Based on these prior studies, the following hypothesis can be brought out:

H3: The merchandise attributes are positively related to customer satisfaction.

2.2 Purchase stage

2.2.1 The impact of security on consumer satisfaction:

Blut (2016) referred to security as protecting the customers' personal information collected from e-transaction and avoiding unauthorized use of disclosure. Compared with traditional shopping, online consumers lay more emphasis on the need for security (Wang et al., 2015). Basically, customers' concerns about security can be divided into several dimensions such as user authorization, transaction security and personal information privacy (Blut, 2016). Previous research (Guo, et, al., 2012) revealed that the perception of security risk has a negative relationship between satisfaction with the information service of the online platform. In other

words, consumers will be more satisfied with their online shopping experience when they feel secure with the transaction process and their personal information. Thus, the following hypothesis is posited:

H4: The merchandise attributes are positively related to customer satisfaction.

2.2.2 The impact of payment on customer satisfaction

Convenience is commonly reckoned by customers as an advantage of online shopping (Duarte, et, al., 2018) and payment convenience is the main feature of online shopping. According to Roozbahani, et, al. (2015), e-payment is financial exchange facilitated by some electronic. When choosing the payment method, consumers will take both speed and ease of use into consideration (Beauchamp and Ponder, 2010). This is supported by the research conducted by Liu, et al. (2017), showing that consumers tend to be more satisfied when the platform improves its transaction capability and designs a convenient and flexible payment mechanism, which will save their operation time. Roozbahani, et, al. (2015) also stated that the integration of e-payment into online shopping platforms can improve consumers' expectations with rapid response. As such, the following assumption is proposed:

H5: The payment is positively related to customer satisfaction.

2.3 The Post-purchase stage

2.3.1 The impact of delivery on consumer satisfaction

Delivery is defined by Guo, Ling and Liu (2012) as the process for the commodities to go from the distribution center to the customer. It is widely acknowledged that the delivery problem has become one of the most common phenomena during online shopping. (Guo, et.al, 2012). After defraying the expense, customers can only get the goods after shipping and delivery. In this case, it would be a non-monetary expense for online purchases when waiting for goods (Beauchamp and Ponder, 2010). Thus, delay in delivery would hurt customer satisfaction, according to CNNIC (2004). In order to ensure superior service quality and better satisfy their customers' needs, companies are supposed to improve delivery timeliness and conditions (Rita, et.al, 2019)

H6: Delivery is positively related to customer satisfaction.

2.3.2 The impact of service quality on consumer satisfaction

According to Blut (2016), customer service contains service level and returning handling within and after the purchase. In traditional purchase, there is always stuff for helping when customers meet any difficulty. On contrary, there are some purchases that happen online without any assistance (McLean and Wilson, 2016). There are also some online businesses that provide online assistance in form of web-based synchronous media such as live chat facilities (Turel and Connelly, 2013). Chen and Chuang (2003) also suggested that poor customer service is one

root for common complaints of the online transaction. There is evidence suggests that there can be a positive correlation between customer service and customer satisfaction (Blut, 2016). Hence:

H7: customer service is positively related to customer satisfaction

2.4 The impact of consumer satisfaction

2.4.1 The impact of consumer satisfaction on behavioral intention

Behavioral intention is the willingness that one will have another purchase at the same company based on his experience (Filieri & Lin, 2017; Hellier et al., 2003). Kolter and Armstrong (2012) claimed that the determinant of further buying is customer satisfaction. Customers tend to purchase again from the same supplier if they are satisfied in last purchase, further supported by several empirical studies which found a positive relationship between repurchase intention and customer satisfaction (Blut et al., 2016; Kitapci et al., 2014; Pham and Ahammad, 2017; Wolfinbarger and Gilly, 2003). It is also mentioned by Cronin et al. (2000) that this intention can be improved by providing excellent service quality. Therefore, the research leads following hypothesis:

H8: Consumer satisfaction is positively related to behavioral intention.

2.4.2 The impact of consumer satisfaction on word of mouth

Solomon and Panda (2004) refer to word of mouth (WOM) as the information of products that one individual sends to others. In terms of marketing channels, WOM is the most credible approach because the word is from people they know (Tuten and Solomon,2020). It was also pointed out that WOM would become even more effective and powerful when the information is from reliable resources (Ennew et al., 2000). In contrast with offline shopping, online customers rely more on the recommendations from experienced customers because online goods are impalpable and thus harder to evaluate (Wu et al., 2018).

Even though not all satisfied consumers will engage in positive WOM (Wang, 2011), Kitapci (2014) found that satisfying experience will influence their intention on WOM positively. Wang (2011) also pointed out that dissatisfied customers are more likely to share their bad experiences with others. Based on this evidence, the following hypothesis is proposed:

H9: Customer satisfaction is positively related to WOM.

3. Methodology

3.1 Survey Instruments

Both online and offline surveys were conducted in July 2020 to test the hypothesized relationships. The survey was translated from English to Chinese and back-translated to ensure that all participants could understand it clearly. A pilot survey was done to identify errors and problems, to ensure the questions are easily understood, and to ensure the accuracy of the

translation. Some minor concerns were adjusted in the final version.

The final questionnaire was mainly composed of two sections. The first looks for the basic information about respondents, such as age and education. Then with five-point Likert scales, the second part explores the different dimensions within purchasing process proposed in the model. For each dimension in the model, there are several sicarios and respondents are expected to show the degree of agreement with them. The items used to evaluate people's perceptions were developed under existing literature (see Appendix 1).

3.2 Data Collection

Data are collected from two different channels as follows:

- *Field survey.* Field surveys were conducted in large shopping malls. We interviewed shoppers when they were queuing for lunch or dinner and asked if they have any online shopping experience for fresh food. 65 respondents answered the questionnaire with 57 valid results.
- *Online survey.* We also put the questionnaire on a website (www.wjx.com), which is a professional platform specialized in distributing questionnaires and collecting data. This approach produced 209 usable data for analysis. Collecting data online has several advantages over the traditional method: the respondents are not limited to a particular location, lower cost, and faster responses (Shankar et al., 2003). In addition, a quality-control question was inserted in the middle of the questionnaire to guarantee the reliability of the response.

The initial number of responses was 280. To ensure the reliability of the data, fourteen samples were removed from the data due to missing data and unreliable responses. Furthermore, a one-way ANOVA test was conducted before the combination of the two sub-samples and the result showed that no significant differences exist in the two sub-groups (see Appendix 2).

3.3 Sample

There are overall 266 valid data for analysis in the end and their demographic characteristics are summarized in Table 1. As the table demonstrated, females made up for approximately 65% of the whole sample considering that they do online food shopping more frequently than men. People of different ages were covered in this research, ranging from below 16 to above 60 years old. In terms of education level, most of the respondents were undergraduate or in vocational school. These personal characteristics were taken as control variables to avoid test response bias. A t-significance test was then conducted to compared demographics and all the constructors. The results showed no significant difference between compared groups (see Appendix 3), which suggests that concerns about the possibility of demographic response bias are alleviated.

Table 1

Sample Demographics (n=266)

		n	%
Gender	Male	94	35.34
	Female	172	64.66

Age	Under 16	5	1.88
	16-24	74	27.82
	25-34	92	34.59
	35-44	56	21.05
	45-60	24	9.02
	Above 60	15	5.64
Education	High school and below	45	16.92
	Undergraduate/vocation school	181	68.05
	Master and above	40	15.04

3.4 Data Analysis Procedures

The data obtained were then analyzed using statistical software SPSS and AMOS version 26.00. Confirmatory Factor Analysis (CFA) with maximum likelihood estimation was conducted to assess the measurement model and regression analysis was applied to test the hypothesized relations in the model.

3.5 Reliability and Validity

A rigorous process was conducted to test the reliability and validity of the survey instrument. First, the reliability of each construct was verified based on Cronbach's alpha value. As is showed in Table 4, Cronbach's alpha value for each of the factors ranged from 0.774 to 0.897 and clearly exceed the 0.70 cutoff recommended by Nunnally (1978), suggesting that all constructors are reliable for the research. The content and construct validity of the questionnaire were tested modeled on previous empirical studies (Liu, et.al, 2008, Fu, et, al, 2020). Content validity is supported by previous literature and pilot tests. We then conducted the confirmatory factor analysis (CFA) to further assess the construct structure and ascertain convergent and discriminant validity. The 35-item model was subjected to a CFA with maximum likelihood estimation across all 266 responses. The model fit indices and CFA factor loadings are shown in Table 2 and Table 3. According to Hu and Bentler (1999) and Bentler and Bonett (1980), our model fit indices are acceptable (χ^2/df=1.47, RMSEA=0.042, 90% confidence interval for RMSEA = (0.035~0.048), IFI=0.963, CFI=0.963, SRMR=0.037). Following the procedures proposed by Fornell and Larcker (1981), convergent validity was evaluated by two criteria. Firstly, all factor loadings (λ) were positive and significant at p= 0.001. Secondly, the average variances extracted (AVE) exceeded 0.5 (ranging from 0.538 to 0.651). Discriminant validity was tested by an approach recommended by Fornell and Larcker (1981), comparing the square root of AVEs by each construct to the correlations between the construct and all other constructs. The test results indicate that both reliability and validity are adequate and the model is acceptable for future discussion.

Table 2

Measurement Model

Constructs	Indicator	Std. Error	P-value	Std. Factor Loading

Information Quality (IQ)	IQ1	-	-	0.744
	IQ2	0.079	0.000	0.792
	IQ3	0.08	0.000	0.785
	IQ4	0.081	0.000	0.733
	IQ5	0.084	0.000	0.718
	IQ6	0.086	0.000	0.771
	IQ7	0.081	0.000	0.682
Website Design (WD)	WD1	-	-	0.789
	WD2	0.064	0.000	0.713
	WD3	0.063	0.000	0.741
Merchandise Attributes (MA)	MA1	-	-	0.798
	MA2	0.07	0.000	0.696
	MA3	0.066	0.000	0.692
	MA4	0.063	0.000	0.741
Security (SEC)	SEC1	-	-	0.706
	SEC2	0.095	0.000	0.729
	SEC3	0.105	0.000	0.813
Payment (PAY)	PAY1	-	-	0.812
	PAY2	0.069	0.000	0.778
	PAY3	0.071	0.000	0.819
Delivery (DEL)	DEL1	-	-	0.803
	DEL2	0.069	0.000	0.742
	DEL3	0.065	0.000	0.645
Consumer Service (CSE)	SCE1	-	-	0.797
	SCE2	0.073	0.000	0.748
	SCE3	0.07	0.000	0.715
Consumer Satisfaction (CSA)	CSA1	-	-	0.827
	CSA2	0.062	0.000	0.794
	CSA3	0.063	0.000	0.677
Behavioral Intention (BI)	BI1	-	-	0.824
	BI2	0.062	0.000	0.789
E-WOM(EW)	EW1	-	-	0.771
	EW2	0.083	0.000	0.776
	EW3	0.074	0.000	0.768
	EW4	0.071	0.000	0.706

Table 3

Fit Statistics of the Confirmatory Factor Analysis

χ^2	df	p	χ^2/df	IFI	RMSEA	RMR	CFI	NNFI	SRMR
756.897	515	<0.01	1.47	0.963	0.042	0.044	0.963	0.957	0.037

Table 4

Reliability analysis, AVE, CR

Constructs	Number of questions	Cronbach's alpha	AVE	CR
Information quality	7	0.897	0.559	0.898
Website design	3	0.792	0.564	0.794
Merchandise attributes	4	0.823	0.538	0.822
Security	3	0.792	0.569	0.797
Payment	3	0.845	0.646	0.845
Delivery	3	0.774	0.542	0.778
Consumer service	3	0.797	0.57	0.798
Consumer satisfaction	3	0.808	0.596	0.814
Behavioral intention	2	0.788	0.651	0.789
E-WOM	4	0.840	0.575	0.843

Table 5

Pearson Correlations Matrix and Square Roots of AVEs

	IQ	WD	MA	SEC	PAY	DEL	CSE	CSA	BI	EW
IQ	**0.747**									
WD	0.843	**0.751**								
MA	0.879	0.781	**0.733**							
SEC	0.731	0.645	0.714	**0.754**						
PAY	0.776	0.774	0.719	0.54	**0.804**					
DEL	0.817	0.777	0.806	0.638	0.762	**0.736**				
CSE	0.792	0.75	0.78	0.655	0.714	0.761	**0.755**			
CSA	0.812	0.781	0.785	0.619	0.746	0.764	0.753	**0.772**		
BI	0.786	0.761	0.754	0.619	0.71	0.736	0.704	0.782	**0.807**	
EW	0.826	0.708	0.771	0.703	0.63	0.735	0.705	0.724	0.76	**0.758**

Notes: The shaded numbers on the leading diagonal are the square root of the variance shared between the constructs and their measures. Off diagonal elements are the correlations among constructs

Legend: IQ: Information quality, WD: Website design, MA: Merchandise attributes, SEC: Security, PAY: Payment, DEL: Delivery, CSE: Consumer service, CSA: Consumer satisfaction, BI: Behavioral intention, EW: E-WOM

4. Data Analysis

Path analysis is applied to analyze the research model. Lleras (2005) indicates that path analysis is the extension of regression analysis, which is considered as a suitable tool that helps researchers disentangle the various factors underlying a particular outcome and explicitly specify the correlation between variables. The path analysis results are presented in Table 6

As the data shows, variance explained for the nine constructs ranges from 0.38 to 0.66. The standardized coefficients for information quality, website design, merchandise attributes, security, payment, delivery, consumer service and consumer satisfaction are all statistically significant ($p<0.01$). Inspection of the antecedent of consumer satisfaction indicates that information quality

and merchandise attributes appear strong predictors of consumer satisfaction, with the coefficients β reach approximately 0.8 and account for a large proportion of variance. In addition, security has the least impact on consumer satisfaction (β = 0.54) and all the other constructs are positively related to consumer satisfaction, with a similar β around 0.75. Finally, examining the path of consumer satisfaction indicates that consumer satisfaction exerts significant positive effects on behavioral intention (β = 0.841) and E-WOM (β = 0.725).

Therefore, our hypotheses that information quality, website design, merchandise attributes, security, payment, delivery, consumer service are positively related to consumer satisfaction (H1- H7) and that consumer satisfaction is positively related to behavioral intention and E-WOM (H8 - H9) are supported.

Table 6

Path Analysis

Path	Proposed Effect	Standard Coefficient (SE)	t-value	R^2	Hypothesis Result	F
IQ → CSA	+	0.809** (0.036)	22.623	0.66	H1 Supported	511.793**
WD→CSA	+	0.76** (0.037)	20.322	0.61	H2 Supported	412.979**
MA→CSA	+	0.79**(0.038)	20.594	0.616	H3 Supported	424.093**
SEC→CSA	+	0.544** (0.043)	12.796	0.383	H4 Supported	163.749**
PAY→CSA	+	0.72**(0.04)	18.184	0.556	H5 Supported	330.641**
DEL→CSA	+	0.759**(0.039)	19.236	0.584	H6 Supported	370.006**
CSE→CSA	+	0.753**(0.041)	18.584	0.567	H7 Supported	345.367**
CSA→BI	+	0.841**(0.041)	20.407	0.612	H8 Supported	416.46**
CSA→ E-WOM	+	0.725**(0.043)	17.031	0.524	H9 Supported	290.065**

5. Discussion

5.1 Information quality

The finding of the study suggests that information quality is the most influential among the nine indicators, which is consistent with the research conducted by Alshikhi and Abdullah (2018). According to Alshikhi and Abdullah (2018), information quality is likely to affect consumer satisfaction through the decision-making process. High-quality information can impact decision-making by improving the efficiency of utilizing data for decision-makers, especially when there are sufficient choices (Even et, al., 2006). Therefore, more extensive and

higher quality information available will bring about higher consumer satisfaction. This indicates that information provided by these platforms should be more detailed and personalized to save consumers' time in decision making. Moreover, under the context of COVID-19, since online consumers can not physically assess the food as they do in a traditional open market, they tend to attach much importance to the accuracy and relevance of food information. Therefore, B2C platform should provide descriptive information as clear and accurate as possible, including the foods' origin, expired time, producer, and so forth.

5.2 Merchandise attributes

As hypothesized, merchandise attributes are another strong predictor of consumer satisfaction. Results of the study suggest that various factors, such as quality, safety and diversity play a significant role in consumer satisfaction. This is in line with Lee, Kwak and Cha's (2020) finding that consumers will take various dimensions of merchandise attributes into consideration. With the growing competition among the online food market and diversification of customers' options, consumers no longer focus merely on the price when making their decision. Therefore, online fresh food platforms should focus more on non-price strategies to differentiate them from others. For example, they can enrich the food options available by attracting a diversity of merchandise to settling in. Furthermore, they should improve their food standard and provide more eco-friendly organic food by enhancing the supervision over producers and merchandise. Instead of competing on price, it is beneficial to provide more reassuring food to attract more customers and improve their satisfaction.

5.3 Website design

Regarding the website design, the result of positive coefficient confirms what is found by Liu, et.al (2008), demonstrating that ease of use and aesthetic characteristic characteristics are unneglectable contributors to consumer satisfaction. The visitors' first impression of the website is derived from its navigating page structure and design (Liu, et.al, 2008) Accordingly, a comfortable layout and clear navigation can prolong their stay, which will increase their purchase intention and satisfaction. Despite the increasing popularity of online shopping in China, it turns out in our study that some people aged above 50 prefer traditional ways mainly because of unfamiliarity with the complicated operation interface. Henceforth, it is vital for the platform to expend more effort on simplifying page design and navigation system especially for the seniors, to make them move around smoothly and find pages they need.

5.4 Security

In contrast with what Kim and Stoel's (2004) found in their research, this study unveils a positive relationship between security and consumer satisfaction. However, the effect is the least significant compared with other seven factors, which supports Rita, et.al's (2019) statement that security had a low impact on overall service quality. This may attribute to the strengthening regulation over online platforms by the authorities and established online transaction credit system in China. Although the impact of security is not so strong as other constructs, it should not be underestimated. Extensive research has stressed the unneglectable role of security and privacy (Guo, et.al, 2012, Stian and France, 2005). Therefore, online platforms should prevent customers' personal information, such as purchase history and

account data from malicious usage. Furthermore, it is reasonable to ask customers for permission before assessing certain authorizations, thus creating a safer and more secure online shopping environment.

5.5 Payment

Payment method is another strong predicator of consumer satisfaction, as most consumers will evaluate the usefulness of an online platform based on not only payment flexibility but also speed. This is further proved by Grace and Chia-Chi (2009), arguing that intangible loss will increase for the online platform if customers spend a long time familiarize themselves with the payment procedure. Because of the developed e-payment system in Chine, there may exist few differences in the speed of payment method between these platforms. However, since different people have their preferences for payment, it is essential that the platform provide diverse paying methods and guarantee customers' financial security.

5.6. Delivery

Before COVID-19 broke out, delivery was considered one factor influencing customer satisfaction as an invisible cost (Beauchamp and Ponder, 2010). This perception was truer under strict regulations of self-quarantine, and they cannot go out shopping casually (citation needed). They then tend to see the delivery of their foods more importantly since they rely more on this channel. This idea can be further proved intuitively because of the perishable characteristics of fresh food. In most common goods, a dilatory delivery would only cause a delay through the whole process. In terms of fresh food, the quantity of the food would be influenced significantly, and therefore satisfaction would slump if the buyer received stale food. Thus, timely and convenient delivery service is of great importance in promoting clients' satisfaction. For those services which send goods to an allocation point instead of the purchasers, it can also be helpful to improve the density of such posts.

5.7. Customer Service

Consistent with the previous research (Holloway and Beatty, 2008; Wolfinbargerhe and Gilly, 2003; Parasuraman, Zeithaml and Malhotra, 2005), the consumer service, including assistance and refund service, is in a significant positive relationship with satisfaction. Due to online shopping, it would be hard for customers to find the retailer if anything of the goods is not as expected. This difficulty was even strengthened by COVID-19 when their traveling is limited. If the platform cannot guarantee reliable customer service, people hesitate more to purchase the goods. A timely replying system would make potential buyers more confident about goods quality, and reimbursement would make the system even more credible from a diagnostic view. Therefore, it is desirable for online retailers to create an image of credible customer service.

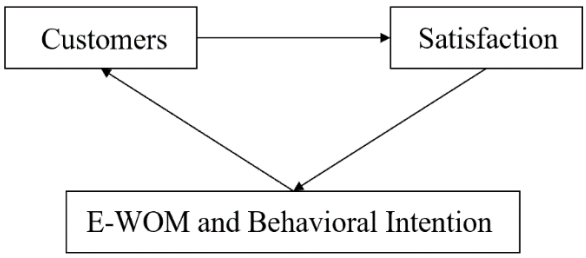
5.8. E-WOM and behavioral intention

Our data proved that customers' satisfaction is in positive correlation with the action of referring the platform/retailers to other people they know, and this finding is supported by Anderson (1998) and Rita, Oliveira, and Farisa (2019). Like in other markets, people who have satiated experience in online fresh food purchases tend to share their knowledge more with their

friends. According to previous literature, WOM, including E-WOM, also strongly impacts buying decisions (Ennew et al., 2000).

The results also reveal that there is also a positive relationship between behavioral intention and satisfaction. Gao (2011) and Chek and Ho (2016) agreed with our conclusion. This conclusion is intuitively reasonable because customers tend to be reluctant to spend extra time and money on other unacquainted shops to avoid uncertainty. Furthermore, during COVID-19, news occasionally reported the contaminant in food, so the uncertainty was exacerbated.

Based on the above discussion, we may summarize that if a business wants to reach a virtuous circuit, the quality of goods and services is the root. As customers are satisfied, more people will be recommended to shopping there and they are more likely to repurchase in the same place as well. Then the whole loop would be self-perpetuating as the goods and services are promised.



6. Conclusion

This research conducted a conclusive study of a framework consisted of seven determinants which has been established by previous researcher and reconfirmed that information quality, website design, merchandise attributes, security, payment, delivery and consumer service have positive influence on consumer satisfaction from the aspect of emerging fresh food online shopping in China after COVID-19. The theoretical framework is also extended by examining the impact of consumers' satisfaction on behavioral intention and E-WOM. Results of this research enrich the existing theoretical body of online business environment in China by devising a research model and applying the model to the modern background. In addition, the research findings can provide managerial insights for online retailers on improving their performance and better satisfying the consumers. Online retailers should thoroughly take all these seven determinants into consideration and incorporate these factors into evaluating the level of consumer satisfaction as a performance measurement, thus standing out in the increasingly fierce competition among online platforms.

It is noteworthy that this study has some limitations that could be improved on in future research. Firstly, the sample of the study was limited to customers who have experience of purchasing fresh food online and most of them are aged from 16 to 44. Therefore, the sample is not typical enough to represent the views of all online shoppers in China. Future research should increase the size and diversity of participants in terms of age, location and education level. Secondly, this research only tested the direct effect of each variable without testing their inter-relationship and some potential moderating factors. Future research could probe more on

the underlying intricate correlation between these variables. Thirdly, this research applied the model on the general products online, not based on specific food segments. However, this measurement may not be applicable to all the food categories. Future research can take control over the differences across product categories and consider other industries to assure that the measurement works equally well.

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Appendix

Questionnaire

The Impact of Customer Acquisition Processes on Customer Satisfaction

Section 1: Demographic questions

1.Your gender: male female

2 Your age: a. below 16 b. 16-24 c. 25-34
d. 35-44 e. 45-59 f. above60

3 Top educational certificates:
a. high school and below b. undergraduate / vocational school c. master and above

4 Your most frequently used online platform to purchase fresh food were:
a. Taobao Grocery d. PingDuoDuo Grocery g. Fresh Hema j. ShiXiangHui
b. Orange Optimization e. Xingsheng Optimization h. Meituan Optimization k. others:
c. JingDong Grocery f. Elema Grocey i. ShiHuiTuan

Section 2:
Suppose the following sentence describes your shopping experience. What is your degree of agreement:
(1: strongly disagree 2: somewhat disagree 3: neutral 4: somewhat agree 5: strongly agree)

Construct	Statement	1 Strongly disagree	2 Somewhat disagree	3 Neutral	4 Somewhat agree	5 Strongly agree
Information quality						
Accuracy	The information provided on the platform is accurate					
Reliability	The information provided on the platform is reliable					
Understandability	The information provided on the platform is clear and understandable					
Completeness	The information on the platform is complete for my purchase decision					
Personalization	The information provided on the platform creates a sense of personalization					
Relevancy	The information provided at the platform is relevant					
Relevant Information	I will consider the shopping experiences reviews of other customer before buying					
Website design						
Structure	I like the lay out of the platform					
Navigation	The page leads me easily to the information I need					
Ease of use	The platform is easy to use					
Aesthetic characteristics	The website is visually appealing.					
Merchandise attributes						
Price	The general pricing of the platform goods is relatively lower compared with traditional food markets					
Variety	The product range of the platform is complete					
Quality	The quality of the products on the platform is good					
Safety	The products on the platform are safe					

Security						
Authorization	I think it's reasonable and acceptable for the platform to ask for some authorization					
Security	I feel safe in my transactions with the online shop.					
Privacy	I trust the platform to keep my personal information safe					
Payment						
Flexibility	The platform has flexible payment options					
Speed	It did not take a long time to complete the purchase process					
Convenience	My purchase was completed easily					
Delivery						
	The product is delivered by the time promised by the company					
	The item sent by the site are well packaged and perfectly sound					
	I am satisfied with the delivery mode of the platform (home delivery/ self pick-up)					
Customer Service						
	Inquiries are answered promptly					
	The service personnel are ready and willing to help me					
	I am satisfied with the refund and return policies of the platform					
Satisfaction						
Experience	Overall, my purchase experience with this platform is excellent					
Service Quality	The overall quality of the service provided by the platform is excellent					
Overall Feelings	My overall feelings toward this platform are very satisfied					
Behavioral Intention						
	I will continue to shop online at this retailer					
	I will use this retailer website more often for online purchases					
	I encourage others to shop online at this retailer					
E-WOM						
	I always share my knowledge and information.					
	I strongly recommend people buy products online from this company					
	I have spoken favorably of this company to others.					

Appendix 1 Questionnaire Constructs and Items

Constructs		Items	Sources
Information quality	Accuracy	The information provided on the platform is accurate	Bailey and Pearson (1983) Strong et al. (1997), Wang (1998), Wang and Strong (1996), Wand and Wang (1996)
	reliability	The information provided on the platform is reliable	Strong et al. 1997, (Wang 1998), Wang and Strong (1996), Wand and Wang (1996)
	Understandability	The information provided on the platform is clear and understandable	Bailey and Pearson (1983), Strong et al. (1997), Wang (1998), Wang and Strong (1996) , Wand and Wang (1996)
	Completeness	The information on the platform is complete for my purchase decision	Bailey and Pearson 1983, Strong et al. 1997, Wang 1998 , Wang and Strong 1996 , Wand and Wang 1996
	personalization	The information provided on the platform creates a sense of personalization	Gilmore and Pine (2000), McKenna (2000), Parasuraman et al. (1988, 1991), Pitt et al. (1995, 1997), Schubert and Selz (1997), Zeithaml et al. (1988, 1990, 1993)
	relevancy	The information provided at the platform is relevant	Bailey and Pearson (1983), Strong et al. (1997), Wang (1998), Wang and Strong (1996), Wand and Wang
	Relevant information	I will consider the shopping experiences reviews of other customer before buying	Ng (2013), Zhang et al. (2014)
Website design	Structure	I like the lay out of the platform	Manes (1997)
	Navigation	The page leads me easily to the information I need	Pastrick (1997).
	Ease of use	The platform is easy to use	Chen and Chang (2003)
	Aesthetic characteristics	The website is visually appealing.	Blut (2016), Holloway and Beatty (2008)
Merchandise attributes	price	The general pricing of the platform goods is relatively lower compared with traditional food markets	Chen and Chang (2003)
	variety	The product range of the platform is complete	Szymanski and Hise (2000)
	quality	The quality of the products on the platform is good	Lim (2006), Hwang (2013), Mutum (2014)
	safety	The products on the platform are	Namkung & Jang, 2007
security	authorization	I think it's reasonable and acceptable for the platform to ask for some authorization	Culnan (1999); Friedman et al. (2000), Grewal et al., (2004) Yianakos (2002); Grabner-Kraeuter (2002)

	security	I feel safe in my transactions with the online shop.	Blut (2016), Holloway and Beatty (2008)
	privacy	I trust the platform to keep my personal information safe	Blut (2016), Holloway and Beatty (2008)
payment	flexibility	The platform has flexible payment options	Jiang et al (2013)
	speed	It did not take a long time to complete the purchase process	Beauchamp and Ponder (2010)
	convenience	My purchase was completed easily	Beauchamp and Ponder (2010)
delivery		The product is delivered by the time promised by the company	CNNIC (2004)
		The item sent by the site are well packaged and perfectly sound	CNNIC (2004)
		I am satisfied with the delivery mode of the platform (home delivery/ self pick-up)	CNNIC (2004)
Customer service		Inquiries are answered promptly	Lohse and Spiller (1998)
		The service personnel are ready and willing to help me	Lohse and Spiller (1998)
		I am satisfied with the refund and return policies of the platform	Blut (2016), Holloway and Beatty (2008)
Satisfaction	experience	Overall, my purchase experience with this platform is excellent	Blut (2016)
	Service quality	The overall quality of the service provided by the platform is excellent	Blut (2016)
	Overall feelings	My overall feelings toward this platform are very satisfied	Blut (2016)
Behavioral Intention		I will continue to shop online at this retailer	Jiang et al. (2013)
		I will use this retailer website more often for online purchases	Jiang et al. (2013)
		I encourage others to shop online at this retailer	Jiang et al. (2013)
E-WOM		I always share my knowledge and information.	Park et al (2013)
		I strongly recommend people buy products online from this company	Goyette et al (2010)
		I have spoken favorably of this company to others.	Goyette et al (2010)

Appendix 2

Sub-sample ANOVA						
		quadratic sum	df	mean square	F	sig
Information quality	between groups	0.037	1	0.037	0.047	0.829
	within the group	209.420	264	0.793		
	total	209.456	265			
Website design	between groups	1.154	1	1.154	1.395	0.239
	within the group	218.423	264	0.827		
	total	219.577	265			
Merchandise attributes	between groups	0.223	1	0.223	0.287	0.593
	within the group	205.337	264	0.778		
	total	205.560	265			
Security	between groups	0.830	1	0.830	0.817	0.367
	within the group	268.021	264	1.015		
	total	268.850	265			
Payment	between groups	9.081	1	9.081	11.189	0.001
	within the group	214.261	264	0.812		
	total	223.342	265			
Delivery	between groups	3.241	1	3.241	4.124	0.043
	within the group	207.478	264	0.786		
	total	210.718	265			
Consumer service	between groups	0.255	1	0.255	0.325	0.569
	within the group	207.539	264	0.786		
	total	207.794	265			
Consumer satisfaction	between groups	1.345	1	1.345	1.719	0.191
	within the group	206.640	264	0.783		
	total	207.985	265			
Behavioral intention	between groups	0.558	1	0.558	0.614	0.434
	within the group	239.837	264	0.908		
	total	240.395	265			
E-WOM	between groups	0.049	1	0.049	0.062	0.804
	within the group	208.771	264	0.791		
	total	208.820	265			

Appendix 3 Demographic Differences Test

Gender Difference

		Levine variance equality test		T-test for mean equality						
									confidence interval	
		F	sig	t	df	Sig. (Double tail)	Mean difference	Standard error difference	lower limit	upper limit
Information quality	Assumed equal	7.683	0.006	2.199	263	0.029	0.25007	0.11374	0.02611	0.47403
Website design	Equal variance is not			2.345	225.425	0.020	0.25007	0.10665	0.03991	0.46024
Merchandise attributes	Assumed equal	7.452	0.007	1.583	263	0.115	0.18511	0.11697	-0.04520	0.41542
Security	Equal variance is not			1.736	240.981	0.084	0.18511	0.10661	-0.02490	0.39511
Payment	Assumed equal	5.580	0.019	1.533	263	0.126	0.17361	0.11323	-0.04936	0.39657
Delivery	Equal variance is not			1.612	217.110	0.108	0.17361	0.10772	-0.03870	0.38591
Consumer service	Assumed equal	0.809	0.369	1.046	263	0.297	0.13578	0.12986	-0.11991	0.39148
Consumer satisfaction	Equal variance is not			1.064	198.192	0.289	0.13578	0.12765	-0.11595	0.38752
Behavioral intention	Assumed equal	0.979	0.323	0.831	263	0.407	0.09836	0.11831	-0.13459	0.33131
E-WOM	Equal variance is not			0.853	203.196	0.395	0.09836	0.11528	-0.12894	0.32565

Age Difference

		quadratic sum	df	mean square	F	sig
Information quality	between groups	2.248	5	0.450	0.564	0.727
	within the group	207.209	260	0.797		
	total	209.456	265			
Website design	between groups	2.370	5	0.474	0.567	0.725
	within the group	217.207	260	0.835		
	total	219.577	265			
Merchandise attributes	between groups	2.686	5	0.537	0.688	0.633
	within the group	202.874	260	0.780		
	total	205.560	265			
Security	between groups	7.261	5	1.452	1.443	0.209
	within the group	261.590	260	1.006		
	total	268.850	265			
Payment	between groups	2.692	5	0.538	0.634	0.674
	within the group	220.650	260	0.849		
	total	223.342	265			
Delivery	between groups	3.274	5	0.655	0.821	0.536
	within the group	207.444	260	0.798		
	total	210.718	265			
Consumer service	between groups	4.382	5	0.876	1.120	0.350
	within the group	203.412	260	0.782		
	total	207.794	265			
Consumer satisfaction	between groups	2.825	5	0.565	0.716	0.612
	within the group	205.160	260	0.789		
	total	207.985	265			
Behavioral intention	between groups	3.689	5	0.738	0.810	0.543
	within the group	236.706	260	0.910		
	total	240.395	265			
E-WOM	between groups	3.115	5	0.623	0.787	0.560
	within the group	205.705	260	0.791		
	total	208.820	265			

Education difference						
		quadratic sum	df	mean square	F	sig
Information quality	between groups	0.261	2	0.130	0.164	0.849
	within the group	209.196	263	0.795		
	total	209.456	265			
Website design	between groups	1.308	2	0.654	0.788	0.456
	within the group	218.270	263	0.830		
	total	219.577	265			
Merchandise attributes	between groups	0.825	2	0.412	0.530	0.589
	within the group	204.735	263	0.778		
	total	205.560	265			
Security	between groups	5.205	2	2.603	2.596	0.076
	within the group	263.645	263	1.002		
	total	268.850	265			
Payment	between groups	0.582	2	0.291	0.343	0.710
	within the group	222.760	263	0.847		
	total	223.342	265			
Delivery	between groups	0.799	2	0.399	0.500	0.607
	within the group	209.919	263	0.798		
	total	210.718	265			
Consumer service	between groups	0.196	2	0.098	0.124	0.884
	within the group	207.599	263	0.789		
	total	207.794	265			
Consumer satisfaction	between groups	0.467	2	0.234	0.296	0.744
	within the group	207.518	263	0.789		
	total	207.985	265			
Behavioral intention	between groups	0.970	2	0.485	0.533	0.588
	within the group	239.425	263	0.910		
	total	240.395	265			
E-WOM	between groups	0.414	2	0.207	0.261	0.770
	within the group	208.406	263	0.792		
	total	208.820	265			