The Antecedents of Consumer's Perceived Value and Repurchase Intention in the O2O Food Delivery Service Value Chain

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Abstract

In this study, we try to discover some success factors, for the entire value chain of the O2O food de-livery industry in China, from ordering to delivery. We study the influence of three aspects of the value chain, namely, (1) the mobile platform, (2) the restaurant and food and (3) the delivery service, on the perceived value and repurchase intention of customers. Using structural equation modeling, we develop a structural research model with seven sets of hypotheses relating various independent variable constructs (platform, restaurant, and delivery) and dependent constructs (perceived value and repurchase intention). We find that usefulness of mobile app, the food condition and the availability of offline restaurants were significant antecedents for perceived value and repurchase intention. In addition, fair pricing was a signifi-cant antecedent for repurchase intention.

Keywords: O2O food delivery service value chain, Perceived Value, Repurchase Intention, Mobile Platform, Structural Equation Model

1. Introduction

Due to the rapid growth in mobile communications, in the last decade, many online services have been proliferating around the world. These new online services are also receiving increasing attention by researchers who are interested in learning about the antecedents of successful online ventures (Bouzaabia et al. 2013; Zulkarnain et al. 2015; Alalwan, 2020). One of the online services that has been booming, in the last decade, particularly in China, has been the Online-to-Offline (O2O) mobile food delivery service. This increasingly popular service in China has been instrumental in bringing about significant changes in food consumption habits and the lifestyle of Chinese people in general(Cho et al., 2019). With the help of modern technology, the O2O food delivery industry is providing the world with more convenience. Instead of lining up in long queues at a restaurant, consumers now have the option of having the food delivered to them, with just a few clicks on a mobile app on their phones.

Not only has the consumer base for the O2O food service expanded, but also the frequency of online orders per customer has increased, making the O2O food industry a multibillion-dollar industry. For example, in terms of the user base, according to reports by the IiMedia Group, the number of O2O food service users increased from 63 million in 2011 to 477 million in 2020, a 657% increase over nine years, and is expected to continue to grow in the future. In terms of revenues, the same source, i.e., the IiMedia Group, reported an increase in industry revenues, from 21.68 billion CNY (3.4 billion USD) in 2011 to 664.62 billion CNY (100 billion USD) in 2020; an almost 3,000% increase over the past nine years. Fig. 1-1 illustrates these trends graphically over the past nine years. The growth received a further boost due to the ongoing pandemic. In spite of the huge scale of this industry, researchers, both domestic and international, have so far, mainly focused on consumer satisfaction with the mobile platforms (the mobile applications), instead of considering the overall experience with the entire value chain from ordering to delivery to consumption. This study investigates the overall O2O food delivery service value chain, that includes three service aspects, viz., the mobile platform experience, the restaurant/food service experience, and the delivery service experience.

Fig. 1-1 The output value and online user size of China's catering industry in the O2O market

In terms of major platforms in the O2O food industry space in China, prior to 2017, there were three major players, viz., Meituan Waimai, Eleme Waimea and Baidu Waimai. In 2017, Eleme Waimea acquired Baidu Waimai to become the largest platform, with a market share of 55%. Meituan Waimai had a market share of 40.8% (Source: IiMedia Group).

To stay competitive, in this rapidly growing market, firms must focus on several aspects of the value chain, including the food options and food inventory, delivery service quality, the app platform service experience, food quality and safety etc. With the rapid development of information technology, consumers often rely on online reviews and product information before making purchase decisions. So, to remain competitive, the apps must also provide customer reviews and product information. Further, the industry players must make sure their services are such that they continue to receive positive customer reviews.

Most of the research, in the online food industry literature, has focused mainly on customers' experience with the mobile platform or the food quality. For instance, the study by Cho et al. (2019) assessed the quality of five representative food delivery applications on perceived value, attitudes towards the platform and willingness to continue to stay with the platform. Wang et al. (2016) also focused on the positive relationship between building long-term trust with the online platform and the perceived value by consumers and its implications for customer retention. Most studies have, for the most part, ignored the impact of some of the other aspects that may affect customer satisfaction and loyalty, such as the offline condition of food upon delivery, and service quality of the restaurant and also the food transportation process(Xiao et al., 2017).

Like in any service industry, it is important to know how to enhance consumer experience. In the rapidly increasing O2O food delivery industry, the question of how to improve consumers' experience is extremely important for the enterprises. So far, to the best of our knowledge, there has been no research to test how the relevant factors in the complete food delivery supply chain affect consumers' perceived value and their repurchase intentions and their positive recommendation to others about their experience with the services.

Research has shown that consumer behavior generally involves a purpose, such as fulfilling a need or a want. The means-end chain (MEC) theory (Murfield et al. 2017) describes consumer behavior through a hierarchy of goals or purpose. The core of the MEC theory is about the relationship between benefits and behaviors; the consumer's behavior is driven with the intention to realize some value or benefit. The MEC theory was the pioneering theory that helped us understand how products/services

can better enable consumers to realize value through consumption(Fang et al., 2016). In some studies of online purchasing and repurchase intentions, MEC theory provides a suitable framework for connecting consumer value to behavior(Chiu et al., 2014). Ha and Jang (2013) also use the MEC theory to identify consumer dining preferences in different segments of restaurants.

The MEC theory provides the theoretical lens for getting deeper insights into why consumers buy products or services and what factors evoke repeat purchase behavior. By adopting the MEC theory, this study aims to design a comprehensive framework that considers impacts from various aspects, such as the mobile platform, the restaurant, and the delivery, on the perceived value and repurchase intentions of the customer. We explore the following research questions:

(1) How does the quality of the mobile application platform, offline restaurant and delivery services affect customer's perceived value in O2O food delivery industry?

(2) How does the quality of the mobile application platform, offline restaurant, and delivery services affect customer's repurchase intentions?

(3) How does customer's perceived value affect repurchase intentions?

In the next section, we will describe the logistics of the O2O food delivery service. In the following section, i.e., Section 3, we provide a review of the relevant literature on the O2O food delivery service industry. In Section 4, we develop the relevant hypotheses to answer the research questions we discussed above. Our research methodology and the data collection process will be described in Section 5. In section 6, we will describe the analysis of our data collected and discuss the results. This will be followed by some discussion and managerial implications in Section 7. Finally, in Section 8, we will summarize our study and provide some conclusions.

2. Literature Review

2.1 O2O food delivery process

In an O2O food delivery process, consumers order food through a mobile application and have the food delivered to them, within a certain time, in good condition, ready for consumption. In the conventional telephone ordering service, the restaurants were responsible for (i) answering the phone to take orders and (ii) preparing and packaging the food and (iii) delivering the food. But in the O2O food delivery business model, the mobile app platform acts as the intermediary between the consumer and the restaurants and provides delivery services from the restaurant to the consumer(Maimaiti et al., 2018). Participating offline restaurants can register themselves on the mobile platform service, which allows them to display their location information,

food menu, service time and information about special deals to users through mobile apps. When customers use the mobile apps, based on their location, they automatically see nearby restaurants and their food options. Consumers can then either choose to go to the physical restaurant for a dine-in experience or order the food for delivery after looking at reviews and deals, prices and menu options. They can also make online payments through the O2O platform(Xiao et al., 2017). Using such services, independent operators can expand their market reach. According to Price (1997), when independent operators become part of a consortium, they can improve their position.

Fig. 2-1 shows the complete O2O food delivery system. Consumers can register an account on the platform and then (1) Consumer opens the mobile application and searches for food information and places an order and makes online payment; (2) The platform passes the order information to the restaurant; (3) Restaurant prepares the food offline; (4) The Delivery person receives food from the restaurant, along with the delivery information and delivers food to the consumer. It may be pointed out that food delivery providers are also considering delivering food using drones (Hwang and Choe, 2019); (5) After receiving the food, consumers may evaluate or review the restaurant food quality and the delivery quality on the platform; (6) Finally,

restaurant and platform delivery staff can reply to customers' comments and improve food and delivery service quality. In this section, we review some past studies and describe some theoretical concepts relevant to this study.
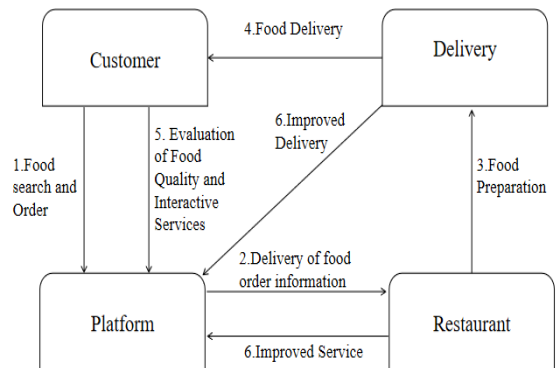
Fig. 2-1 O2O Food Delivery System

2.2 App related factors

Online food delivery services have been enabled by technology. Technology is used both at front of house and back of house. The mobile platform for ordering food is the most critical front of house element of the food delivery supply chain (Muhittin, 2019). The essential a2tributes of any mobile app are ease-of-use (ESU) and usefulness (USF) and the technology acceptance model (TAM) describes how new innovations or new technologies are accepted through ESU and USF(Roh and Park, 2019). ESU is a measure of how easy and convenient it is for the users to use the technology. USF refers to the degree of performance im-

provement perceived by the user through the use of this technology(Davis et al., 1989). In addition to these generic factors, i.e., ESU and USF, we also need to consider factors such as information security, payment convenience, and delivery service, for the case of O2O food delivery service(Zulkarnain et al., 2015). Furunes and Mkono (2019) found that "food delivery mediated through mobile apps is likely to expand as more households are lured by its convenience."

Most of the research focuses on the relationship between app platform and trust(Cho et al., 2019; Kapoor and Vij, 2018; Pigatto et al., 2017; Roh and Park, 2019; Xiao et al., 2017). In addition, there are some studies on O2O commerce (Chen et al., 2019; Kang and Namkung, 2019; Wu et al., 2015), food quality, and interactive services(Suhartanto et al. 2019). Alsetoohy and Ayoun (2018) and Alsetoohy et al. (2019) have also studied the adoption of technology in hotel food supply management.

2.3 Food and restaurant and delivery related factors

We found that restaurants with delivery services generally have more orders than restaurants without delivery services. Previous literature has also shown that delivery services are an important means for businesses to improve their business performance(Cho, Jang and Han, 2017). The booming food delivery industry offers new job post and employment opportunities, including managers and food deliveryman on the O2O platform (Maimaiti et al., 2018). Real-time update tracking map location information and tracking order status can add value to the guests' experience (Alalwan, 2020). Therefore, we consider the quality of delivery services as an important research factor.

When we consider offline service factors in the food industry, the restaurant attributes are basically represented by food quality and price. Food quality is determined in terms of its freshness, nutritious value, aesthetic presentation, and some more characteristics important for repurchase decision(Zulkarnain et al., 2015). According to Sulek and Hensley (2004), food quality can be assessed by factors such as attractiveness of the picture, taste, diversity, and health characteristics. Due to the importance of food quality, there have been a number of empirical studies that correlate food quality with consumer satisfaction (Suhartanto et al., 2019Zulkarnain et al., 2015)Giritlioglu et al. (2014) developed an instrument to assess food service quality and identified key aspects of food quality that affected customer perceptions.

2.4 Perceived value

Perceived value (PV) is a broad concept used in marketing. Zeithaml (1988) defines

PV as the customer's perception of value of a product or a service. It also takes into account the trade-off of payment (cost) and value (benefit) obtained in return(Sweeney and Soutar, 2001). The perceived cost and benefit of products or services plays a role in the evaluation of the overall effectiveness of the product or service(Chen et al., 2019). Value is an important link between perceived performance and behavioral intention(Patterson and Spreng, 1997). Many researchers, in the food delivery services have studied antecedents of perceived value and purchase intention. For example, DiPietro et al. (2013) studied whether adoption of green practices in upscale food service improved customer perceptions and purchase intentions. Similarly, Chen and Hu (2010) studied the attributes that determine customer perceived value of the Australian coffee industry. Liu et al. (2019) studied the effect of innovation on the perceived experiential value in the hospitality industry. Based on previous studies, PV and customer perception of product service quality are closely related(García-Fernández et al., 2018).

2.5 Repurchase intention

In previous studies, repurchase intention refers to the subjective possibility of customers repurchasing products from the same online store(Chiu et al., 2014). MEC theory offers a basic framework for studying perceived value on customer behavior. (Gutman, 1997)Using the MEC theory, Chiu et al. (2014) identified a significant relationship between perceived value and repurchase intention. They found that perceived value is the driving force for customer behavior. Ryu et al. (2012) also found that perceived value determined satisfaction, which, in turn, determined behavioral intention. Kang et al. (2018) found that satisfaction with social networking sites acted as a mediator between overall flow experience and offline purchase intention. Lee et al., (2002) found that customers search for information about product quality from many sources, before making purchase decision. Therefore, any study that only studies the impact of the mobile app platform would be incomplete.

3. Hypotheses Development

This study is based on the MEC theory, in which Perceived Value (PV) is the desired outcome of consumer behavior. PV is regarded as the trade-off between cost (payment) and benefit of getting something in return(Zeithaml, 1988). We measure customer's PV with customer evaluation of benefits and cost. Starting from placing the order and throughout the entire process of O2O food delivery, we observe the influence of three elements, namely, Platform, Restaurant and Delivery on Perceived Value and Repurchase Intention (RP).

3.1 Hypotheses related to mobile app platform attributes:

Based on the conceptual framework proposed by Roh and Park (2019), we use two platform attributes, viz., 'ease of use' (ESU) and "usefulness" (USF). ESU is a measure of how easy and convenient it is to use the platform for the user. USF describes the degree to which the user expects to perform the same task more effectively, by using the mobile application platform. Based on past research (Roh and Park, 2019), we hypothesize that a greater ESU and USF lead to better perceived value and positively impact customer repurchase intentions. Thus, the hypotheses related to the platform are as follows:

H1. Platform attributes positively influence perceived value.

H1a. Ease of use has a positive effect on perceived value.

H1b. Usefulness has a positive effect on perceived value.

H2. Platform attributes positively influence repurchase intentions.

H2a. Ease of use has a positive effect on repurchase intentions.

H2b. Usefulness has a positive effect on repurchase intentions.

3.2 Hypotheses related to restaurant attributes:

Previous studies (Qin and Prybutok, 2009) have found a positive relationship between the quality of food and service with perceived value. Cho et al. (2019) discovered that price and product quality are positively related to customer PV. Thus, our hypotheses related to the restaurant are as follows:

H3. Restaurant attributes have a positive effect on perceived value.

H3a. Price fairness has a positive effect on perceived value.

H3b. Food quality has a positive effect on perceived value.

H4. Restaurant attributes positively influences repurchase intentions.

H4a. Price fairness positively influences repurchase intentions.

H4b. Food quality positively influences repurchase intentions.

3.3 Hypotheses related to delivery services quality attributes:

Based on the study by Murfield et al. (2017), Logistics service quality (LSQ) has three attributes, viz., availability (AV), timeliness (TL), and food condition (CO). AV is defined as offline delivery distribution mode and logistics information. TL is defined as the speed of delivery and CO has been defined as the state of food upon arrival.

H5. Delivery services quality positively in fluences perceived value.

H5a. Timeliness positively influences perceived value.

H5b. Availability positively influences perceived value.

H5c. Food Condition positively influences perceived value.

H6. Delivery services quality has a positive effect on repurchase intentions.

H6a. Timeliness positively influences re- purchase intentions.

H6b. Availability positively influences repurchase intentions.

H6c. Condition positively influences re-purchase intentions.

And finally, we hypothesize that Perceived Value acts as a mediating variable between the platform, restaurant, and delivery quality, and repurchase intentions. Therefore, PV influences repurchase intentions.

H7. Perceived value positively influences repurchase intentions.

We will now describe how we conducted our empirical research to test these hypotheses. The structural model of the proposed research framework is shown in Fig. 3-1.
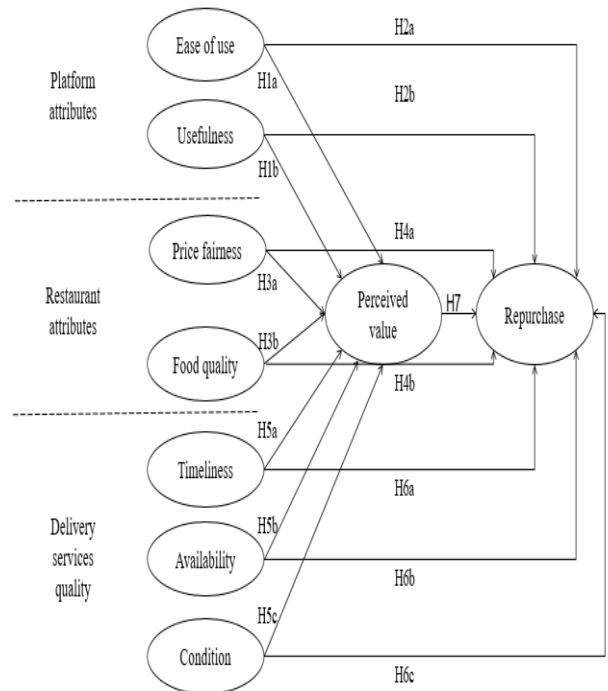
Fig. 3-1 Proposed research framework

4. Research Methodology

4.1 Survey method

To test our hypotheses, we conducted a survey to collect data through an online survey questionnaire. The online survey is an appropriate instrument for this type of study, especially since our target users are all comfortable with online environment, because they use their mobile devises for O2O food delivery services. Further, the online survey allows better randomness of the sample, because the respondents are likely to be spread across geographical boundaries, and across ages and gender and professions.

4.2 Survey design

Our questionnaire was first designed in English, but since our target users were all from China, the questions were translated in Chinese. Before conducting the surveys for all the users, we tested our questionnaire on about ten smartphone users, who also actively used O2O food delivery services to help us identify any ambiguity in interpretation of the questions and ensured readability and consistency of the questions. Based on this pretest, the language of questions in our questionnaire was deemed appropriate.

All items were measured using a 7-point Likert scales. The questionnaire is divided into four sections: Respondents' basic information, processes of O2O food delivery service, customer perceived value and intention for future purchase. To ensure the reliability and validity of the questionnaire and to ensure that the sample is representative of the target population, we had two screening measures. First, we included some filter questions, to ensure that all the respondents were using mobile food delivery app. Second, we excluded the questionnaires in which the respondents did not spend much time (Leiner, 2013), because clearly, they did not read all the questions carefully. The online tool allows us to know the time taken by the respondent. If the responded finished the questionnaire in less than two minutes, we eliminated the re-sponse.

5. Data Analysis and Results

5.1 Descriptive statistics on respondents

In this study, we collected a total of 293 survey responses, conducted through online survey. We analyzed the data using SmartPLS3.0 software to test the hypotheses outlined in the Structural model shown in Fig. 3-1. After screening the data for non-users of O2O food delivery service and fast responses, we were left with 251 valid questionnaires. Tab. 5-1 summarizes the basic demographic information of the respondents.

We discovered that the majority (83.7%) of users of the O2O food delivery services were people in the age group of 18-29 years and, almost 90% of the users were single.

Tab. 5-1 Summary of demographics of the respondents

Measure	Items	Frequency	Percentage
Gender	Male	112	44.62%
	Female	139	55.38%
Age	< 18	18	7.17%
	18-29	210	83.67%
	30-39	15	5.98%
	40-49	6	2.39%
	50~	2	0.80%
Marital status	Married	26	10.36%
	Single	225	89.64%
Education level	Secondary (high school)	24	9.56%
	college	24	9.56%
	Bachelor's degree	141	56.18%
	Master and Doctoral degree	62	24.70%
Income	Less than 284$	51	20.32%
	285~711$	58	23.11%
	712~1423$	108	43.03%
	1423$~	34	13.55%
Ordering frequency	Less than 1	78	31.08%
(Times in one week)	1-3	114	45.42%
	4-6	44	17.53%
	> 7	15	5.98%
Platforms (Multiple selection)	Meituan Waimai	210	86.78%
	Baidu Waimai (Eleme)	162	66.95%
	Others	15	6.2%

Sample N=251.

5.2 Data measurement validity tests

Before pursuing the SEM analysis, we first performed tests for reliability, convergent validity, and discriminant validity.

Convergent Validity Test

For convergent validity, in Tab. 5-2, we show the Composite Reliability (CR) score, the Average Variance Extracted (AVE) and the Cronbach's α values for all the constructs. Tab. 5-2 also shows the factor loadings of all the factors for all the constructs. According to previous studies, for convergent validity, the CR value needs to be above 0.7 (Fornell and Larcker, 1981; Hair et al. 1998), the AVE value needs to more than 0.5, Cronbach's α need to be more than 0.7 and all of the factor loadings need to be more than 0.7. Our test results show that our data meets all the requirements for convergent validity.

Tab. 5-2 Reliability and convergent validity tests

Variables	Construct	Items	α	CR	AVE	Loading
Platform	ESU	ESU1	0.850	0.899	0.689	0.816
		ESU2				0.864
		ESU4				0.818
		ESU6				0.823
	USF	USF1	0.906	0.934	0.781	0.885
		USF2				0.887
		USF4				0.899
		USF5				0.863
Restaurant	PR	PR1	0.962	0.971	0.870	0.884
		PR2				0.932
		PR3				0.948
		PR4				0.945
		PR5				0.953
	FQ	FQ1	0.925	0.941	0.729	0.901
		FQ2				0.912
		FQ3				0.827
		FQ4				0.856
		FQ5				0.877
		FQ6				0.736
Delivery Service	TL	LSQ-TL1	0.927	0.948	0.820	0.909
		LSQ-TL2				0.923
		LSQ-TL3				0.917
		LSQ-TL4				0.871
	AV	LSQ-AV1	0.904	0.928	0.722	0.827
		LSQ-AV2				0.864
		LSQ-AV3				0.830
		LSQ-AV4				0.870
		LSQ-AV5				0.857
	CO	LSQ-CO1	0.926	0.944	0.771	0.878
		LSQ-CO2				0.906
		LSQ-CO3				0.853
		LSQ-CO4				0.909
		LSQ-CO5				0.844
Perceived value	PV	PV1	0.949	0.961	0.832	0.905
		PV2				0.878
		PV3				0.921
		PV4				0.913
		PV5				0.921
Repurchase	RP	RP1	0.947	0.959	0.824	0.885
		RP2				0.909
		RP3				0.915
		RP4				0.937
		RP5				0.913

α=Cronbach's α.

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Discriminant Validity Test

For discriminant validity tests, the various correlation coefficients should be < square root of AVE(Fornell and Larcker, 1981; Segars and Grover, 1998). The test results for discriminant validity are shown in Tab. 5-3. We find that our data exhibits discriminant validity properties as well.

Tab. 5-3 Discriminant validity test

Construct	ESU	USF	PR	FQ	TL	AV	CO	PV	RP
ESU	0.830								
USF	0.802	0.884							
PR	0.650	0.455	0.933						
FQ	0.379	0.366	0.654	0.854					
TL	0.488	0.515	0.535	0.571	0.905				
AV	0.589	0.621	0.521	0.566	0.741	0.850			
CO	0.510	0.572	0.534	0.615	0.747	0.809	0.878		
PV	0.650	0.719	0.523	0.457	0.638	0.766	0.707	0.912	
RP	0.635	0.697	0.630	0.531	0.626	0.747	0.656	0.864	0.908

The underscore numbers are the square roots of the AVE.

5.3 The structural equation model

For the proposed research framework model (Fig. 3-1), the most appropriate analysis approach is the partial least square structural equation modeling (SEM)(Anderson and Gerbing, 1988). Fig. shows our structural equation model along with the path coefficient values and R^2 values for PV and RP. The greater the R^2, the better the model explanation(Fornell and Larcker, 1981; Pavlou and Fygenson, 2006).
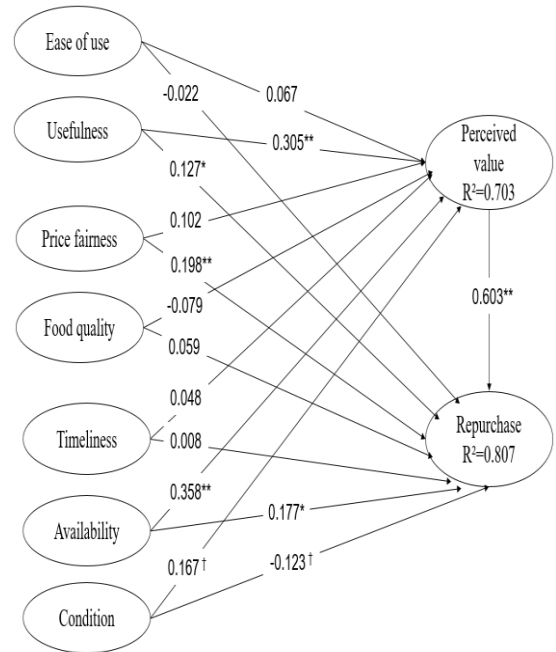
$^{†}p<0.10, *p<0.05, **p<0.01$

Fig. 5-1 Structural equation model with coefficients and R-squares

Goodness-of-fit measures

The R-square value for predicting the perceived value using ESU, USF, PR, FQ, TL, AV and CO, was 0.703, which is considered very good. The R-square value for predicting repurchase intention, using ESU, USF, PR, FQ, TL, AV, CO and PV, was 0.807, which is also considered very good. The standardized root mean squared residual (SRMR) came out to be 0.052. The model is considered a good fit model if the SRMR value is below 0.08. The Normed Fit Index (NFI) value for the model came out to be 0.87. Like the R-square value, the NFI of a perfect model is 1. An NFI value of 0.87 is considered a good fit.

5.4 Results

Tab. 5-4 summarizes the results for all 15 hypotheses. We found support for hypotheses H1b (USF → PV), H4a (PR → RP), H5b (AV → PV), and H7 (PV → RP) at a significance level of 0.01. H2b (USF → RP) and H6b (TL → RP) were supported at a significance level of 0.05 and H5c (CO → PV) and H6c (CO → RP) were supported at a significance level of 0.10. We did not find significant support for hypotheses H1a (ESU → PV), H2a (ESU → RP), H3a (PR → PV), H3b (FQ → PV), H4b (FQ → RP), H5a (TL → PV), and H6a (TL → RP).

Tab. 5-4 The hypothesis test results

Hypothesis	Causal Path	Path coefficients	t-Value	Hypothesis Supported
H1a	ESU → PV	0.067	0.989	X
H1b	USF → PV	0.305**	3.707	O
H2a	ESU → RP	-0.022	0.379	X
H2b	USF → RP	0.127*	2.081	O
H3a	PR → PV	0.102	1.419	X
H3b	FQ → PV	0.079	1.378	X
H4a	PR → RP	0.198**	4.085	O
H4b	FQ → RP	0.059	1.177	X
H5a	TL → PV	0.048	0.736	X
H5b	AV → PV	0.358**	3.912	O
H5c	CO → PV	0.167†	1.781	O
H6a	TL → RP	0.008	0.147	X
H6b	AV → RP	0.177*	2.502	O
H6c	CO → RP	0.123†	1.867	O
H7	PV → RP	0.603**	9.641	O

†p<0.10. *p<0.05, **p<0.01.
O= Hypothesis Supported, X= Hypothesis not supported.

Of all the 15 hypotheses, the hypothesis H7 (PV → RP) was the most significant with a p-value approaching zero. Also, the path coefficient value was also the highest of all at 0.6. Hypothesis H4a (PR → RP)

was the next most significant hypothesis, and this hypothesis also had a high path coefficient value (0.198). The next most significant hypothesis was H5c (AV → PV), also with a high path coefficient value (0.358), followed by H1b (USF → PV) which also had a high path coefficient value (0.305). So, most of the significant hypotheses also had high path coefficient values. The seven non-significant hypotheses also had low path coefficient values, ranging from 0.008 to 0.102). So, incidentally, the statistically significant hypotheses were also practically significant, and the statistically insignificant hypotheses were not very practically significant.

In terms of significant indicators, usefulness of platform (USF), offline delivery availability (AV) and food condition (CO) were significant indicators for both perceived value and repurchase intention. Price fairness (PR) was a very significant indicator for repurchase intention, but not so significant for perceived value. Perceived value (PV) was very significant indictor for repurchase intention (H7). Ease of use (ESU), Timeliness (TL) and food quality (FQ) were not significant indicators for either PV or RP.

5.5 Discussion of theoretical and managerial implications

From the consumers' point of view, the significant attributes for perceived value

are (i) usefulness of the platform, (2) of-fline delivery availability and (3) food condition. Significant attributes for repurchase intentions are (1) usefulness of the platform, (2) price fairness, (3) offline delivery availability and (4) food condition. In terms of restaurants' attributes, price fairness was a very strong indicator for repurchase decision, although not a significant indicator for perceived value. It may be inferred that while for one-time purchase, price fairness may not be as important, but in the long run, price fairness becomes a very important factor. For one-time purchase, the customer may be willing to pay more, to test the food, but may not sustain the high price in the long run. Since the long-term profits for a restaurant come from repeat business rather than one-time business, managers need to pay attention to price fairness.

In terms of platform variables, since USF was found to be practically and statistically significant for both perceived value and repurchase intentions, managers show pay the most attention to this factor. App designers should focus most on improving the usefulness of the app, to be competitive. This means that the app should provide a lot of useful information to the customers, such as restaurant locations, menu, prices, special deals, customer reviews, and recommendations based on prior purchasing habits. Consumers expect a certain level of usefulness and unless the expectations are

matched, users will not subscribe to the app. Gunden et al. (2020a) studied customer intentions to use online food delivery systems and found that matching of performance expectations was the strongest predictor of intention to use online food delivery services. Gunden et al. (2020b) also studied how browsing behavior of consumers influence consumer's persuasion in online food delivery systems. Since usefulness was found to be such a strong indicator of success, managers should also think of innovative ways to further enhance the usefulness of their apps. For example, they could include tips on eating healthy. Based on their study, Okumus and Bilgihan (2014) recommended that restaurants should consider developing apps that includes nutritional data about their menu items. Such usefulness will increase the intention to use the app.

Surprisingly, ESU was not found to be statistically significant either for perceived value or for repurchase intention. One could infer that even if a platform is not very easy to use for the first time, the user learns to use the platform and it becomes easy for them after using the platform for a few times and then the lack of ease of use is no longer an issue. Since our respondents were all users of O2O apps, the ESU criterion was not very important. It is more important, therefore, to focus on the usefulness of the app, rather than the ease of use. It is also possible,

that most popular apps are already easy to use and that apps that were not easy to use never became successful. So given that all apps are probably equally easy to use, the ease-of-use criteria is no longer very important, but the usefulness of the app continues to be a very significant and important criteria.

In terms of the attributes for delivery, the availability of offline restaurants was a significant attribute for both perceived value and repurchase intentions. This could be because customers like a break from their work to go out for a change. Food condition was a significant attribute for both perceived value as well as repurchase intention, which makes sense. Clearly, restaurants must ensure that the food is delivered in good condition.

Since hypothesis H7 (PV → RP) was the most significant hypothesis and had the highest path coefficient value, and since repurchase intention is the most critical for long-term profitability, managers should do everything possible to enhance customers' perceived value. Therefore, they should concentrate on these antecedents the most – usefulness of the app, availability of offline food options, and food condition and of course price fairness since it directly impacts repurchase intention. All these four antecedents also had the highest path coefficient values.

Since the survey was conducted only in China, the results cannot be generalized globally. It is possible that due to cultural differences and work-culture differences and demographic differences, the results might be different in other countries. Although we had a large sample (251), a bigger sample would yield more reliable results.

6. Conclusions

In this study, we were interested in discovering the relevant antecedents of a consumer's perceived value and repurchase intention in the O2O food delivery service industry. The O2O food delivery service industry is a multi-billion dollars industry (about 100 billion USD) in China and is growing very rapidly. To be competitive in this industry, it is very important that the managers understand the factors valued by the customers so that they can focus on those factors. To the best our knowledge, this is the first study that attempts to find the success factors for the entire value chain, from ordering the delivery. We study three aspects of the value chain, namely, the platform, the restaurant, and the delivery service. We developed seven sets of hypotheses and a structural equation model that incorporates these seven sets of hypotheses. We tested our structural model through survey data, administered online in several geographical areas of China. We collected usable data from 251 users of O2O services. They were asked questions about their perceived

value and repurchase decision and their satisfaction with the app, the restaurant food, and the delivery service. We found that usefulness of the app, offline restaurant availability and the food condition were important and statistically significant antecedent for both perceived value and repurchase decision. In addition, price fairness was an important and statistically significant antecedent for repurchase decisions. Based on our findings, the managers should make sure the food is always delivered in good condition and they should continue to focus on providing usefulness in the O2O mobile apps. This means, they should continue to provide customer reviews, product information and more product options. Further, we found that not all customers are necessarily interested in having their food delivered. They also like to order food to offline restaurants, as it allows them to go out. Lastly, to earn repeat customers, which is very critical in food industry in general, price fairness was extremely important factor.

Future researchers can study the O2O Food delivery service markets in other markets, such as the European Union and the United States because the O2O food delivery services are becoming more common in those markets.

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O2O 음식배달서비스에서 있어서의 소비자의 지각된 가치와 재구매 의도에 대한 선행요인 연구

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요 약

O2O(Online-to-Offline) 음식배달 서비스 산업은 특히 중국에서 매우 빠르게 성장하는 산업이다. 이렇게 크고 빠르게 성장하는 산업의 경우 관리자가 성공을 위한 선행요인을 이해하는 것은 중요하다.

본 연구에서는 세 가지 측면, 즉 (1) 모바일 플랫폼, (2) 레스토랑 및 음식, (3) 배달 서비스가 고객의 지각된 가치와 재구매 의도에 미치는 영향을 파악하고자 한다. 구조방정식 모형을 사용하여 여러 독립 변수(플랫폼, 레스토랑 및 배달)와 종속 변수(지각된 가치 및 재구매 의도)에 관련된 가설들을 검정하고자 하였다.

모바일 앱 플랫폼 속성 관련 가설로는 사용 편의성과 유용성이 지각된 가치와 재구매 의도에 미치는 영향을 각각 검정하였고, 레스토랑 속성 관련 가설로는 가격 공정성과 음식 품질이 지각된 가치와 재구매 의도에 미치는 영향을 각각 검정하였다. 배달 서비스 품질 속성 관련 가설로는 적시성과 가용성 및 음식 상태 등이 지각된 가치와 재구매 의도에 미치는 영향을 각각 검정하였다.

분석 결과 모바일 앱의 유용성, 음식 상태 및 오프라인 레스토랑의 가용성이 지각된 가치와 재구매 의도에 중요한 선행요인임을 알게 되었다. 또한 공정한 가격은 재구매의도에 중요한 선행요인이었다. 이러한 결과를 토대로 관리자는 고객 리뷰와 음식 정보 및 식당에 대한 정보를 제공하여 앱을 최대한 유용하게 할 필요가 있음을 알 수 있었다. 그리고 음식이 최상의 상태로 배달되도록 해야 하며, 재구매율을 높이기 위해서는 음식 가격이 공정하게 책정되는 것이 중요함을 알 수 있었다.

표제어: O2O 음식배달 서비스, 지각된 가치, 재구매 의도, 모바일 플랫폼, 구조방정식 모형

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