

How do consumers choose offline shops on online platforms? An investigation of interactive consumer decision processing in diagnosis-and-cure markets

Jennifer JooYeon Lee

Metropolitan College, Boston University, Boston, Massachusetts, USA, and

Zecong Ma

Greehey School of Business, St Mary's University, San Antonio, Texas, USA

Choosing
offline shops
on online
platforms

Received 2 March 2020
Revised 4 March 2021
18 June 2021
18 June 2021
14 July 2021
25 July 2021
Accepted 25 July 2021

Abstract

Purpose – The purpose of this paper is twofold: (1) to understand the process and consequences of the two-way communication between consumers and businesses on online-to-offline (O2O) diagnosis-and-cure services platforms and (2) to examine how consumer request-specific factors and service quote-specific factors influence consumer decisions in the interactive marketing context.

Design/methodology/approach – The study analyzes a dataset of 17,878 service requests and 57,867 price quotes obtained from an O2O platform bridging consumers and automotive repair shops. On the platform, consumers request service quotes by uploading the description of automotive damage and multiple service providers suggest price quotes. The authors formulated a logit model to examine consumer decisions of responding service quotes.

Findings – This paper finds that (1) consumers receiving more severe diagnostic results are more likely to respond to the price quotes, and (2) diagnostic severity and inconsistency moderate the impacts of geographic distance, shop size, and quote price on consumers' responses to the service quotes.

Research limitations/implications – This paper fills the gap in the literature by advancing the consumer decision processing model to address the interactive shopping experience on O2O diagnosis-and-cure services platforms. The findings are limited by the data and the research context.

Practical implications – For marketing practitioners, the empirical results imply specific positioning and targeting strategies for markets with informational and geographic barriers to expand the market scope and customer base.

Originality/value – The present work is the first to examine the consumer decision process on O2O diagnosis-and-cure service platforms. It adds value to the literature by investigating how consumers update their problem awareness through the service request-specific factors (i.e. diagnostic severity and diagnostic inconsistency) and how the request-specific factors moderate the impacts of the quote-specific factors (i.e. shop distance, shop size and quote price) on consumers' responses to price quote. The conceptual model and empirical findings provide theoretical and practical values for e-commerce researchers and practitioners.

Keywords Mobile marketing, Web 2.0, Online consumer behaviour, Services marketing

Paper type Research paper

1. Introduction

The advances of the internet and information technologies have enabled firms to communicate efficiently with consumers (Rust and Huang, 2014). In the physical goods market, for instance, digital retailers can directly transact with customers, integrating multiple channels and streamlining the distribution process (Cao and Li, 2018). Thanks to the enhanced operational efficiency, successful online retailers, such as Amazon, can offer products at lower prices (Burt and Sparks, 2003). As a result, digital retailers are rapidly



growing to takeover brick-and-mortar businesses, thereby substituting the mediating channels, such as local retailers. Consequently, the development of digital transactions is often understood as a competitive threat to the traditional marketplace (Reinartz *et al.*, 2019). Under certain circumstances, however, firms' online and offline presences complement each other, achieving a synergistic effect (Verhoef *et al.*, 2015; Shankar *et al.*, 2010). Evidence exists in the personal service markets, such as restaurants, taxis, and healthcare services, where service providers utilize the internet network to improve consumers' offline experiences.

Such complementarity is the driver of online-to-offline (O2O) business models, typically operationalized as interactive websites or mobile applications (Tsai *et al.*, 2015). O2O businesses are different from multichannel retailers offering products simultaneously through online and offline outlets (Zhang *et al.*, 2019). Instead, they follow a two-step process where consumers' need and product information is initially communicated through the online platform, and then the product is transacted upon the offline visit (Du and Tang, 2014; Xiao and Dong, 2015). This interactive process differs from the passive broadcast advertising and one-way persuasive communication traditionally used by retailers (Wang, 2021). Businesses understanding consumers' demands and behaviors in real-time and consumers collecting product-related information have become increasingly critical success factors in the current interactive market (Steuer, 1992). For this reason, O2O platforms are especially suitable for diagnosis-and-cure services such as automotive repair and healthcare, in which critical information related to service is distributed asymmetrically between the consumers and the service providers (experts), and the customized services are provided in-person upon consumers' visits to the physical stores.

Despite the rich literature on the emergence of interactive platforms (e.g. Xiao and Dong, 2015; Chen *et al.*, 2016; Zhang *et al.*, 2019; Banerjee and Bhardwaj, 2019; Roh and Park, 2019), there is a limited understanding of the process and consequences of the two-way communication between consumers and businesses on O2O diagnosis-and-cure services platforms. To address this gap in the literature, we apply the classic consumer decision processing model to the context of diagnosis-and-cure services and O2O platforms. First, we specify two consumer request-specific variables, diagnostic severity and diagnostic inconsistency, to investigate the effect of the customized diagnoses provided for each service request. We further introduce three quote-specific variables, i.e. shop distance, shop size, and quoted price, and examine how diagnostic severity and inconsistency moderate their impacts on consumer decisions. Finally, we empirically test the proposed impacts of the request- and quote-specific factors using a unique mobile-based dataset collected in the automotive repair market and find evidence supporting most of our hypotheses.

2. Theoretical background and hypotheses

As an emerging trend of interactive marketing, the O2O platform created an interconnected ecosystem with an online network of offline service providers and consumers (Wang, 2021). Existing studies on the O2O business model have investigated various aspects, including reputation management (e.g. Xiao and Dong, 2015), information quality and service quality (e.g. Chang *et al.*, 2018; Du and Tang, 2014), pricing strategies (e.g. He *et al.*, 2016; Long and Shi, 2017), compensation design (Banerjee and Bhardwaj, 2019), power structure (e.g. Chen *et al.*, 2016), and moral obligation (Roh and Park, 2019). Previous marketing literature on open platform models has focused mainly on the effect of consumer reviews. These studies include how consumer reviews affect aggregated sales (e.g. Zhu and Zhang, 2010; Berger *et al.*, 2010), consumer perception and attitude (e.g. Mudambi and Schuff, 2010; Pentina *et al.*, 2018; Lee *et al.*, 2008; Vermeulen and Seegers, 2009), and purchase behavior (e.g. Adjei *et al.*, 2010). Some studies analyzed the detailed review contents (e.g. message valence, Chevalier and Mayzlin, 2006; Vermeulen and Seegers, 2009; Berger *et al.*, 2010; Lee *et al.*, 2008), and others provided a

more general view through meta-analyses (e.g. [Floyd et al., 2014](#); [Rosario et al., 2016](#); [Chen and Xie, 2008](#)). However, we find a lack of attention on the O2O platform models in the context of diagnosis-and-cure services and an absence of empirical study on the determinants of consumer decisions based on industrial data.

In the following sections, we propose a consumer decision processing model specifically for O2O diagnosis-and-cure services platforms and propose hypotheses to examine the antecedents of consumers' responses to service quotes.

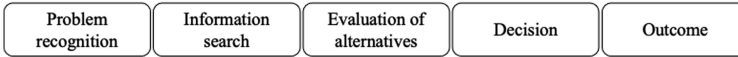
2.1 Consumer decision processing on O2O diagnosis-and-cure services platforms

Diagnosis-and-cure services, such as home repair and healthcare, are delivered through the two steps of seller activities: diagnosis and cure. In the diagnosis phase, service providers collect information from consumers, examine their problems, and suggest specific solutions. In the cure phase, the solutions are implemented. Throughout the process, services are customized to each consumer based on the service providers' judgment ([Lee, 2017](#)). Therefore, it is common for diagnosis-and-cure services providers to use online channels for lead generation, i.e. initiation of consumer interest or inquiry of a product, rather than sales conversion ([Banerjee and Bhardwaj, 2019](#)). On an interactive platform, service providers can conduct preliminary diagnoses by examining consumer-uploaded photos and literal descriptions of the issue (e.g. dents and scratches on a car) and advise repair solutions and provide cost estimations. The consumers can then decide whether to respond to the quotes to receive the repair services at offline facilities.

The main goal of the current research is to understand the consumer decision process in the interactive marketing context described above. Consumer decision processing models have long been a core theory of consumer behavior research. The traditional models analyze consumers' decision-making process following the five stages: problem recognition, information search, evaluation of alternatives, decision, and outcomes (e.g. [Dewey, 1910](#); [Engel et al., 1978](#); [Engel et al., 1986](#)). More recently, research has introduced additional stages to the model (e.g. [Kotler and Keller, 2012](#)'s disposal stage) or discussed the psychological process for each stage of the model (e.g. [Belch and Belch, 2009](#)'s motivation-perception-attitude formation-integration-learning process). Also, there have been studies that contribute to the application of the model to the digital market context (e.g. [Darley et al., 2010](#); [Ashman et al., 2015](#); [Teo and Yeong, 2003](#)). Despite the recent development of the literature, most research has focused on the online physical goods market and adopted the five-stage model to understand online consumers. However, the existing consumer decision processing model has limitations when applied to O2O diagnosis-and-cure services platforms, where consumers rely on experts' judgment to assess the problem and constantly update the problem recognition based on customized diagnostic results received online. For instance, when the diagnostic results are severer than expected, consumers will realize that the problem they face requires more services with higher costs, which consequently affects their evaluation and decision stages. Thus, we suggest adding a stage – update of problem recognition – to the classic consumer decision process model to account for how diagnostic results from service experts help consumers update their problem recognition between information search and alternative evaluation (see [Figure 1](#)). At the problem update stage, each consumer request may receive one or multiple diagnostic quotes, based on which two key factors – diagnostic severity and diagnostic inconsistency – are perceived by consumers and affect their subsequent decision-making. We specify the two factors based on utility theories.

According to the online and offline shopping literature, acquisition utility is the benefits consumers perceive (e.g. service quality) and the costs they need to give up (e.g. price) when acquiring the service. On the other hand, transaction utility is the benefits consumers receive (e.g. convenient information searching) and the costs they need to bear (e.g. traveling to the

Online consumer decision process (Ashman, Solomon, and Wolny 2015)



Updated consumer decision process on O2O diagnosis-and-cure service platforms

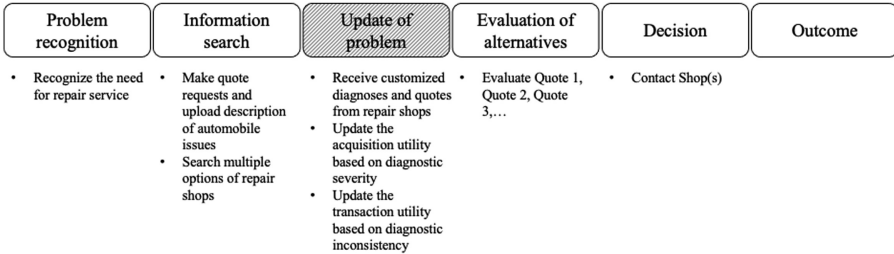


Figure 1. Consumer decision processing on O2O diagnosis-and-cure services platforms

store) when executing the service (Baltas *et al.*, 2010; Chintagunta *et al.*, 2012; Gupta and Kim, 2010; Vroegrijk *et al.*, 2013; Campo and Breugelmans, 2015). In our research context, consumers receive customized quotes to update their acquisition utility based on their perception of damage severity (i.e. average quoted price). Based on the diagnoses and the quoted prices received through the platform, consumers can make inferences about the automotive damage situation unique to themselves. When consumers are provided with higher-priced quotes, their expected acquisition utility increases as they perceive higher benefits, i.e. having more serious car damage fixed (Campo and Breugelmans, 2015). Therefore, we expect consumers who received more severe diagnoses to be more likely to respond to the quote providers.

H1. On O2O diagnosis-and-cure services platforms, consumers are more likely to respond to a service quote when their customized diagnostic results are more severe.

On the other hand, consumers may update the perception of transaction utility based on the inconsistency of quoted prices. When consumers are provided with inconsistent price quotes (i.e. high SD among quoted prices), their expected transaction utility decreases due to increased search costs (Chintagunta *et al.*, 2012; Campo and Breugelmans, 2015). Under this situation, consumers may consider the O2O platform an inefficient or unreliable channel for assessing their problems. As a result, they will be less likely to respond to service quotes received on the platform.

H2. On O2O diagnosis-and-cure services platforms, consumers are less likely to respond to a service quote when their customized diagnostic results are more inconsistent.

2.2 Quote-specific factors and the moderating effects of diagnostic severity and inconsistency

In this section, we discuss the three factors that are specific to each quote (shop distance, shop size, and quoted price) and investigate the moderating effects of diagnostic severity and inconsistency.

2.2.1 Shop distance. The development of e-commerce has deconstructed the geographic barriers in the physical goods market. However, research in marketing has documented geographic impact on consumer behaviors in the online context (e.g. Bell and Song, 2007; Choi *et al.*, 2010) and the importance of geographic segmentation for stores with online and offline presence (e.g. Dholakia *et al.*, 2010; Ngwe, 2017). Furthermore, since the cure phase of

diagnosis-and-cure services is still primarily restricted to in-person servicing at brick-and-mortar stores, geographic distances to the store can contribute to high transaction costs (Chintagunta *et al.*, 2012; Campo and Breugelmans, 2015) and should be one of the main factors for consumers to consider in the online diagnosis phase. Generally, a longer distance to the physical shop decreases consumers' willingness to purchase consumer goods. This phenomenon is more likely when other alternatives are available nearby (e.g. Ailawadi *et al.*, 2008; Briesch *et al.*, 2009).

Nevertheless, although store location matters for diagnosis-and-cure services, the use of O2O platforms may mitigate its effect by providing additional information and encouraging store visits. In other words, O2O platforms help the stores with distant locations promote themselves and initiate communication with consumers, mitigating the geographic disadvantage. In general, geographic barriers affect consumer's buying process in two aspects; (1) It requires more cost (e.g. time, effort, and money) to travel to a distant store; and (2) Long-distance obstructs the offline information flow, thus offline word-of-mouth and reputation are constrained within communities to a certain degree (Bala and Goyal, 1998). An O2O model mitigates the geographic barriers for both. First, consumers can save costs by initiating interaction with the store and receiving customized evaluations (preliminary diagnoses and price quotes) without visiting the physical location. Moreover, store information and consumer ratings and reviews are shared with consumers regardless of the distance to the store.

This mitigating effect of O2O platforms on geographic barriers is especially significant when consumers receive more severe diagnostic results through the platform. Consumers' expected acquisition utility increases as they perceive higher benefits from having more severe car damage fixed (Campo and Breugelmans, 2015). The increase in acquisition utility can offset the perceived transaction costs of visiting a more distant store when consumers evaluate alternative quotes. Thus, we expect that the negative impact of shop distances weakens as the severity of diagnoses increase.

H3. On O2O diagnosis-and-cure services platforms, the negative effect of shop distances on consumers' probability of responding to service quotes weakens as their customized diagnostic results are more severe.

On the other hand, when consumers face higher uncertainties of the diagnostic results, they will perceive high transaction costs, such as expected search costs, to determine the reasons for such discrepancy. Consequently, consumers may become more sensitive to additional traveling and delivery costs (Chintagunta *et al.*, 2012). Thus, we expect the negative impact of shop distances to strengthen as diagnostic inconsistency increases.

H4. On O2O diagnosis-and-cure services platforms, the negative effect of shop distances on consumers' probability of responding to service quotes strengthens as their customized diagnostic results are more inconsistent.

2.2.2 Shop size. Two critical dimensions determining service quality are the physical environment and people (Yarimoglu, 2014). The physical environment considers designing servicescape and providing tangible evidence of service performances, such as space and layout, furnishings, equipment, and staff clothing. The people dimension accounts for interactions between customers, service providers, and other customers (Parasuraman *et al.*, 1985, 1988; Frost and Kumar, 2000). Unfortunately, on O2O platforms, the physical environment and people factor cannot be directly assessed at the online diagnosis stage. Alternatively, consumers may assess the two factors based on the measures of shop sizes. For example, the legal facility area of the service shop can communicate the space of the physical environment, whereas the number of employees can communicate the availability of service personnel. Thus, a larger shop size generally improves consumers' perception of service

quality when receiving diagnoses online and encourages them to contact the diagnostic quote providers on O2O platforms.

However, when the diagnostic results are severer, consumers will engage in more rigorous information searching and focus more on the process perspective of the service, i.e. reliability, problem-solving, and outcome quality (Yarimoglu, 2014). Therefore, consumers' preference for larger shops may weaken as diagnostic results become more severe.

- H5.* On O2O diagnosis-and-cure services platforms, the positive effect of shop sizes on consumers' probability of responding to service quotes reduces as their customized diagnostic results are more severe.

Prior research suggests that during initial contact, when buyers have little or no previous transaction experience with the retailer, they may base their trust on the sellers' reputation and contextual cues, such as store size and display, product assortment, or the seller's publicized good-will (Lewicki and Bunker, 1996; Riquelme *et al.*, 2019). When receiving inconsistent diagnoses, consumers perceive higher uncertainty on each quote and thus could rely more on the shop size as a cue to assess the service providers' trustworthiness. As a result, the positive effect of shop sizes will strengthen.

- H6.* On O2O diagnosis-and-cure services platforms, the positive effect of shop sizes on consumers' probability of responding to service quotes strengthens as their customized diagnostic results become more inconsistent.

2.2.3 Quoted price. Due to the customized nature of diagnosis-and-cure services, their prices vary for each diagnostic case, and their quality is unknown *a priori* to consumers. Accordingly, consumers face uncertainty regarding the type of service necessary and the reasonable range of prices. Previous studies found that this information asymmetry between buyers and sellers generates high transaction costs for consumers (e.g. Anderson, 1988; Wathne and Heide, 2000; Read *et al.*, 2009; Das and Rahman, 2010). O2O commerce fundamentally changes the price competition in the traditional channel supply chain (Zhang *et al.*, 2015). An O2O platform creates an open space for both consumers and service providers by enabling consumers' easy comparison of prices among different seller alternatives. Specifically, on O2O diagnosis-and-cure services platforms, consumers sequentially receive multiple price quotes from the providers. Under this circumstance, the previous price quotes naturally serve as the references for the ones to come. The challenge confronted by the consumers is similar to the "optimal stopping problem (Seale and Rapoport, 1997)," which states that the binary decision to either stop or continue the search depends on the relative ranks of the options.

When consumers perceive severe diagnostic results based on received service quotes, they tend to be less sensitive to the quoted prices for two reasons. First, severe diagnoses increase the consumer's level of involvement, i.e. the internal state of personal relevance or importance regarding the purchase (Park and Young, 1986) and thus reduce price sensitivity (Gotlieb *et al.*, 1992). Second, higher expected acquisition benefits perceived from more severe diagnoses can compensate for the acquisition costs of quoted prices.

- H7.* On O2O diagnosis-and-cure services platforms, the negative effect of quoted prices on consumers' probability of responding to service quotes weakens as their customized diagnostic results become more severe.

The moderating effect of diagnostic inconsistency is, however, unclear. On the one hand, the literature on Agency Theory and Signaling Theory suggests that firms can provide signals to alleviate consumer perceived uncertainty on product quality (e.g. Akerlof, 1970; Mishra *et al.*, 1998; Kirmani and Rao, 2000). Among various types, premium prices are commonly used as a revenue-risking, default-contingent signal (Kirmani and Rao, 2000; Rao and Monroe, 1989).

On O2O platforms, consumers receiving highly inconsistent diagnoses are likely to use prices as a cue to judge the service quality due to higher perceived uncertainty, thus becoming less sensitive to quoted prices. On the other hand, when consumers face higher uncertainties of the diagnostic results, they will perceive higher transaction costs and become more sensitive to the acquisition costs of prices (Chintagunta *et al.*, 2012). Thus, the moderating effect of diagnostic inconsistency depends on the relative strengths of these two effects.

3. Model

Since our data include a binary outcome (i.e. responded to a quote or not), we formulate the consumer decision making using a logit model (e.g. Guadagni and Little, 1983; Malhotra, 1984; Train, 2009). Let Y_{ij} denote whether individual i responds to the j th quote she has received. We assume that the individual's response decision is driven by the latent utility u_{ij} , which has the following relationship with Y_{ij} :

$$Y_{ij} = \begin{cases} 1 & \text{if } u_{ij} > 0, \\ 0 & \text{otherwise.} \end{cases}$$

To test our hypotheses, we specify u_{ij} as:

$$\begin{aligned} u_{ij} = & \beta_0 + \beta_1 \text{DiagSeverity}_i + \beta_2 \text{DiagInconsist}_i + \beta_3 \text{ShopDistance}_{ij} + \beta_4 \text{ShopClass}_{ij} \\ & + \beta_5 \text{QuotedPrice}_{ij} + \beta_6 \text{TimeElapsed}_{ij} + \beta_7 \text{NoQuotes}_{ij} \\ & + \beta_8 \text{ShopDistance}_{ij} \cdot \text{DiagSeverity}_i + \beta_9 \text{ShopClass}_{ij} \cdot \text{DiagSeverity}_i \\ & + \beta_{10} \text{QuotedPrice}_{ij} \cdot \text{DiagSeverity}_i + \beta_{11} \text{ShopDistance}_{ij} \cdot \text{DiagInconsist}_i \\ & + \beta_{12} \text{ShopClass}_{ij} \cdot \text{DiagInconsist}_i + \beta_{13} \text{QuotedPrice}_{ij} \cdot \text{DiagInconsist}_i + \varepsilon_{ij}. \end{aligned}$$

In the equation above, DiagSeverity_i is the severity of diagnostic results to the individual's automobile, measured by the mean price of all quotes that individual i has received upon her request. DiagInconsist_i is the degree of diagnostic inconsistency measured by the SD of quoted prices for individual i . ShopDistance_{ij} is the distance between the area where individual i requested service and the area where the repair shop of quote j is located. Since we expect a diminishing effect of the distance variable on consumers' response behavior, ShopDistance_{ij} is log-transformed for the model estimation. ShopClass_{ij} measures the size of the repair shop. It is a binary variable indicating whether quote j came from a "first-class" shop identified by the O2O platform. First-class shops are of larger sizes than the rest, with legal facility areas larger than one thousand square meters and three or more employees. QuotedPrice_{ij} is the price of the j th quote individual i has received (hereafter quote j). In addition, we control for two additional variables: 1. TimeElapsed_{ij} , the time between the individual's request for quotes and her reception of quote j and 2. NoPrevQuotes_{ij} , the number of quotes the individual received before quote j . We expect that consumers are less likely to respond to a slower service quote or a service quote with more competition.

With the assumption of the type I extreme value distribution for the error term ε_{ij} in the utility specifications above, the probability that individual i responds to quote j_i is given by:

$$\Pr(Y_{ij} = 1) = \frac{\exp\{u_{ij}\}}{1 + \exp\{u_{ij}\}}.$$

4. Data

The dataset for the empirical analysis is obtained from a mobile application for auto repair launched in 2013 in a developed country in Asia. The application works on both Android and iOS devices. This O2O platform bridges the communication between consumers and automotive repair shops for repair jobs ranging from minor exterior damages to heavier damages. It allows consumers to make repair requests by uploading photos and literal descriptions of the automobile damages and receive quotes from repair shops accordingly. Various types of shop information are also available to consumers on the application, such as the name, location, shop size, quoted price, customer reviews, and contact information. If consumers are interested in the quotes offered, they can contact the repair shops and make appointments through the application. Overall, there are 17,878 requests and 57,867 quotes in the data from September 1st to November 31st in 2015. Every request received at least one quote. A total of 205 repair shops provided services through the app across 125 areas in the country when the data were collected. We present descriptive statistics of the data in [Table 1](#).

5. Results

We applied the maximum likelihood estimation method to estimate the parameters in our logit model. The estimation results are presented in [Table 2](#). To begin with, we examine the seven main effects of DiagSeverity_i , DiagInconsist_i , ShopDistance_{ij} , ShopClass_{ij} , QuotedPrice_{ij} , TimeElapsed_{ij} , and NoPrevQuotes_{ij} , respectively. The impact of DiagSeverity_i is positive and statistically significant ($\beta_1 = 1.631 \times 10^{-3}$, $p < 0.001$). The result suggests that more severe

Table 1.
Descriptive statistics
of data

Variables	Mean	Median	Std. dev.
Diagnostic severity (US \$)	375.54	302.27	288.86
Diagnostic inconsistency (US \$)	103.03	64.28	159.64
Distance (kilometer)	10.15	4.63	170.96
Shop class (0 or 1)	0.47	0	0.50
Quoted price (US \$)	375.54	298.18	330.05
Time taken to receive quotes (hour)	4.41	0.58	10.50
No. of previous quotes	1.78	1	1.92

Table 2.
Parameter estimates

Description	Estimate	Std. err.	P-value
Intercept	-1.095***	4.108×10^{-2}	<0.001
DiagSeverity	1.631×10^{-3} ***	1.479×10^{-4}	<0.001
DiagInconsist	1.787×10^{-4}	2.157×10^{-4}	>0.4
ShopDistance	-0.2062***	1.686×10^{-2}	<0.001
ShopClass	0.1373***	3.990×10^{-2}	<0.001
QuotedPrice	-1.583×10^{-3} ***	1.033×10^{-4}	<0.001
TimeElapsed	-9.134×10^{-3} ***	1.610×10^{-3}	<0.001
NoQuotes	-0.2656***	8.892×10^{-3}	<0.001
ShopDistance \times DiagSeverity	9.963×10^{-5} **	4.138×10^{-5}	<0.02
ShopClass \times DiagSeverity	1.911×10^{-4} *	1.017×10^{-4}	<0.06
QuotedPrice \times DiagSeverity	-2.890×10^{-8} *	1.812×10^{-8}	<0.09
ShopDistance \times DiagInconsist	-1.865×10^{-4} **	8.438×10^{-5}	<0.03
ShopClass \times DiagInconsist	-5.150×10^{-4} ***	1.893×10^{-4}	<0.01
QuotedPrice \times DiagInconsist	1.953×10^{-7} ***	4.128×10^{-8}	<0.001

Note(s): * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

diagnostic results motivate consumers to respond to the quotes, supporting H1. The impact of DiagInconsist_i is found to be insignificant ($\beta_2 = 1.787 \times 10^{-4}$, $p > 0.4$), suggesting that the impact of diagnostic inconsistency may depend on consumer characteristics or purchase situation. For instance, when facing high diagnostic inconsistency, consumers with extroverted personalities and no prior car repair experiences may be more likely to communicate with multiple service providers while their introverted, more experienced counterparts may consider the O2O platform unreliable and switch to other channels to assess the damage further. Thus, H2 is not supported. The impact of ShopDistance_{ij} is negative and statistically significant ($\beta_3 = -0.2062$, $p < 0.001$). The result suggests that consumers prefer service providers close by, which is consistent with the findings in the previous studies (e.g. Briesch *et al.*, 2009). ShopClass_{ij} shows a positive and statistically significant impact ($\beta_4 = 0.1373$, $p < 0.001$), suggesting that sizable shops are more favored by consumers and confirming the positive impact of store sizes suggested by previous studies (e.g. Yarmoglu, 2014). QuotedPrice_{ij} was found to be negative and statistically significant ($\beta_5 = -1.583 \times 10^{-3}$, $p < 0.001$), which implies that lower prices attract consumer responses and is consistent with the findings in previous studies (e.g. Chu *et al.*, 2010). The negative and statistically significant coefficients of TimeElapsed_{ij} ($\beta_6 = -9.134 \times 10^{-3}$, $p < 0.001$) and NoQuotes_{ij} ($\beta_7 = -0.2656$, $p < 0.001$) suggest that consumers are more likely to respond when quotes are sent promptly and when there are fewer competing quotes.

Next, we examine the moderating effect of DiagSeverity_i by interpreting the coefficient estimates of its interaction terms. First, we find a positive and statistically significant interaction between ShopDistance_{ij} and DiagSeverity_i ($\beta_8 = 9.963 \times 10^{-5}$, $p < 0.02$), indicating that consumers' sensitivity to travel distances is abated when the diagnostic results are more severe. Second, the interaction between ShopClass_{ij} and DiagSeverity_i is found to be negative and marginally significant ($\beta_9 = -1.911 \times 10^{-4}$, $p < 0.06$), suggesting that the advantage of larger shops is weakened as consumers experience more severe problems with their vehicles. Third, the interaction between QuotedPrice_{ij} and DiagSeverity_i was found to be negative and one-tail significant ($\beta_{10} = -2.890 \times 10^{-8}$, $p < 0.09$). In sum, our estimation results provide empirical evidence fully supporting H3 and marginally supporting H5 and H7.

Last, we examine the moderating effect of DiagInconsist_i . First, we find the interaction between ShopDistance_{ij} and DiagInconsist_i negative and statistically significant ($\beta_{11} = 1.865 \times 10^{-4}$, $p < 0.03$), suggesting that faraway shops become even less attractive when consumers perceive higher transaction costs. Second, the interaction between ShopClass_{ij} and DiagInconsist_i is found to be positive and statistically significant ($\beta_{12} = 5.150 \times 10^{-4}$, $p < 0.05$), suggesting that the advantage of larger shops is strengthened as consumers experience more inconsistent diagnoses on the O2O platform. Lastly, the positive and statistically significant interaction between QuotedPrice_{ij} and DiagInconsist_i ($\beta_{13} = 1.953 \times 10^{-7}$, $p < 0.001$) indicates that large inconsistency in diagnoses can mitigate the negative impact of quoted prices, which implies that quoted prices may serve as a quality signal in the presence of higher perceived uncertainty. *Ceteris paribus*, an \$8,105 DiagInconsist_i ($-\beta_5/\beta_{13}$) will reduce the impact of quoted prices to 0 [1]. In sum, our estimation results provide empirical evidence supporting H4 and H6.

6. Discussion

This research examines how consumer request-specific and quote-specific factors influence the initiation of customer-business contact. Based on our empirical analysis, the main findings of our research are as follows: (1) On O2O diagnosis-and-cure services platforms,

consumers are more likely to respond to a service quote when their customized diagnostic results are more severe. (2) The negative effect of shop distances on consumers' probability of responding to a service quote weakens as their customized diagnostic results are more severe but strengthens as their customized diagnostic results are more inconsistent. This result suggests that consumers may be willing to travel farther to increase the acquisition utility when facing more severe problems. On the other hand, the faraway shops become less attractive when consumers face high transaction costs induced by inconsistent quoted prices. (3) The positive effect of shop sizes on consumers' probability of responding to a service quote reduces as their customized diagnostic results are more severe but strengthens as their customized diagnostic results become more inconsistent. The advantage of larger shops weakens as consumers experience more severe vehicle problems. This finding may be due to consumers' preference for specialized shops when they are rigorously searching information to solve severe problems and focusing on the process perspective of the service (i.e. reliability, problem-solving, and outcome quality; Yarimoglu, 2014). However, the advantage of larger shops strengthens as consumers experience more inconsistent quotes, as consumers' primary concern becomes the uncertainty over the service providers. When receiving inconsistent diagnoses, consumers perceive higher uncertainty on each quote thus rely on the shop size as a cue to assess the service providers' trustworthiness. Previous research supports our result as they find that when buyers have little previous transaction experience with the provider, they may build trust based on the shop's reputation and contextual cues, such as store size and display, product assortment, or the seller's publicized good-will (Lewicki and Bunker, 1996; Riquelme *et al.*, 2019). (4) The negative effect of quoted prices on consumers' probability of responding to a service quote weakens as their customized diagnostic results become more severe and weakens as their customized diagnostic results become more inconsistent. This finding implies that quoted prices may serve as quality signals in the presence of higher perceived uncertainty due to inconsistent quotes.

7. Conclusions

7.1 Theoretical contributions

This research advances the long-lived consumer decision processing model to address the interactive marketing process on the O2O diagnosis-and-cure services platform. Our model extends the literature by suggesting a six-stage consumer decision process: problem recognition, information search, update of problem recognition, evaluation of alternatives, decision, and outcome. We suggest that consumers first update the expected benefits and costs of the repair service based on the diagnostic severity and the transaction costs based on the diagnostic inconsistency. The updated problem recognition subsequently influences consumers' evaluation of alternative service quotes and their decisions of responding to service providers.

We empirically tested the impact of different types of consumer request-specific information (damage severity and damage inconsistency) and quote-specific information (shop distance, shop size, and quoted price) on consumer decisions. We also find the moderating effects of request-specific information, advancing the understanding of digital platforms and digital consumers. Our study results emphasize the importance of efficient communication of information especially at the diagnostic stage, which helps consumers initiate transactions via the O2O platforms.

7.2 Managerial implications

Throughout the globe, O2O platforms are transforming diagnosis-and-cure services shops from brick-and-mortar to brick-and-mobile, contributing value to both consumers and service providers. For marketing practitioners, our empirical results imply positioning and targeting

strategies for O2O diagnosis-and-cure businesses, which are generalizable to other markets with informational limitations and geographic barriers. We find that consumers receiving severe diagnoses are less sensitive to shop distances, shop sizes, and quoted prices. Accordingly, we suggest the shops located in the city outskirts, smaller shops, and premium shops to specialize in severe repair jobs such as broken axles and bent, twisted frames, or rolled-over cars. On the other hand, consumers receiving inconsistent diagnoses are more sensitive to shop distances and shop sizes but less sensitive to quoted prices. Therefore, we suggest the shops in the city outskirts and the smaller shops focus more on providing detailed and professional diagnoses than to be involved with fierce price competition. That way, the shops are likely to increase consumer's expected acquisition utility without raising the perceived transaction costs. We also find that shop distances reduce the likelihood of consumers' responses to quotes in the O2O context. The finding suggests that the service providers focus more on promoting and investing (e.g. advertising and providing preliminary diagnoses) in online consumers at nearby locations. In addition, to stay competitive on an O2O platform, a diagnosis-and-cure services provider should designate personnel to manage diagnosis requests and provide timely responses to high-value prospect customers.

Furthermore, since inconsistencies in diagnoses could lower consumers' perceived efficiency and reliability of the digital platform, the platform should also find additional methods to reduce consumers' limited information. Examples include the platform granting certifications to shops with high service quality and high consumer satisfaction, or training artificial intelligence to conduct diagnoses based on the big data of previous diagnostic requests, quotes, and consumer decisions. More generally, we suggest the firms with offline presence provide customized diagnoses considering each consumer's situation, location, and involvement level by taking advantage of the convenience of digital communication. Such efforts can provide consumers with more personalized and relevant experiences, yielding increased expected acquisition utility. A higher acquisition utility will help offline firms overcome informational limitation and geographic barriers and expand their market scope and customer base.

7.3 Limitation and future research

Our findings are limited by the data. If available, additional data on consumers' final purchase decisions and the prices paid can further advance our understanding of the consumer decision process on O2O diagnosis-and-cure services platforms. Moreover, consumer reviews are not included in our analysis due to the limited number of reviews available from our data source. As previous studies indicate, peer reviews and word-of-mouth are the critical determinants of consumer decisions, long-term growth of sales, thus success of O2O platforms (Adjei *et al.*, 2010). Therefore, we call for research examining the effects of online review contents coupled with the variables investigated in this paper to study the consumer behaviors on O2O diagnosis-and-cure services platforms more comprehensively.

Our data is provided by an O2O platform exclusively operating in an Asian developed country and the majority of the mobile app users are in the metropolitan areas. As a result, the social, economic, and industrial characteristics of the empirical research context may affect the generalizability of our findings. Moreover, consumer's individual characteristics such as personality, stress level, and purchase situation may influence how they interpret, process, and respond to the diagnostic results and other shop information. Accordingly, using survey or experimental data, future research may explore the role of consumer individual characteristics in their decision-making process on O2O diagnosis-and-cure services platforms. Future possibility also includes the examination of other types of diagnosis-and-cure services, such as healthcare and home repair. We find potential for research advance through the testing of the current hypotheses in different services context.

Note

1. Empirically, we find the maximum value of DiagInconsist_i to be \$6,364. Thus, in this situation, only less than one quarter of QuotedPrice_{ij} 's impact remains due to the moderating effect of DiagInconsist_i .

References

- Adjei, M.T., Noble, S.M. and Noble, C.H. (2010), "The influence of C2C communications in online brand communities on customer purchase behavior", *Journal of the Academy of Marketing Science*, Vol. 38 No. 5, pp. 634-653.
- Ailawadi, K.L., Pauwels, K. and Steenkamp, J.B.E. (2008), "Private-label use and store loyalty", *Journal of Marketing*, Vol. 72 No. 6, pp. 19-30.
- Akerlof, G.A. (1970), "The market for 'Lemons': asymmetrical information and market behavior", *The Quarterly Journal of Economics*, Vol. 83 No. 3, pp. 488-500.
- Anderson, E. (1988), "Transaction costs as determinants of opportunism in integrated and independent sales forces", *Journal of Economic Behavior and Organization*, Vol. 9 No. 3, pp. 247-264.
- Ashman, R., Solomon, M.R. and Wolny, J. (2015), "An old model for a new age: consumer decision making in participatory digital culture", *Journal of Customer Behaviour*, Vol. 14 No. 2, pp. 127-146.
- Bala, V. and Sanjeev, G. (1998), "Learning from neighbours", *The Review of Economic Studies*, Vol. 65 No. 3, pp. 595-621.
- Baltas, G., Argouslidis, P.C. and Skarmeas, D. (2010), "The role of customer factors in multiple store patronage: a cost-benefit approach", *Journal of Retailing*, Vol. 86 No. 1, pp. 37-50.
- Banerjee, S. and Bhardwaj, P. (2019), "Aligning marketing and sales in multi-channel marketing: compensation design for online lead generation and offline sales conversion", *Journal of Business Research*, Vol. 105, pp. 293-305.
- Belch, G. and Belch, M. (2009), *Advertising and Promotion: An Integrated Marketing Communications Perspective*, 8th ed., Irwin, Homewood, Illinois.
- Bell, D.R. and Song, S. (2007), "Neighborhood effects and trial on the internet: evidence from online grocery retailing", *Quantitative Marketing and Economics*, Vol. 5 No. 4, pp. 361-400.
- Berger, J., Sorensen, A.T. and Rasmussen, S.J. (2010), "Positive effects of negative publicity: when negative reviews increase sales", *Marketing Science*, Vol. 29 No. 5, pp. 815-827.
- Briesch, R.A., Chintagunta, P.K. and Fox, E.J. (2009), "How does assortment affect grocery store choice?", *Journal of Marketing Research*, Vol. 46 No. 2, pp. 176-189.
- Burt, S. and Sparks, L. (2003), "E-commerce and the retail process: a review", *Journal of Retailing and Consumer Services*, Vol. 10 No. 5, pp. 275-286.
- Campo, K. and Breugelmans, E. (2015), "Buying groceries in brick and click stores: category allocation decisions and the moderating effect of online buying experience", *Journal of Interactive Marketing*, Vol. 31, pp. 63-78.
- Cao, L. and Li, L. (2018), "Determinants of retailers' cross-channel integration: an innovation diffusion perspective on omni-channel retailing", *Journal of Interactive Marketing*, Vol. 44, pp. 1-16.
- Chang, Y.-W., Hsu, P.-Y. and Yang, Q.-M. (2018), "Integration of online and offline channels: a view of O2O commerce", *Internet Research*, Vol. 28 No. 4, pp. 926-945.
- Chen, X., Wang, X. and Jiang, X. (2016), "The impact of power structure on the retail service supply chain with an O2O mixed channel", *Journal of the Operational Research Society*, Vol. 67 No. 2, pp. 294-301.
- Chen, Y. and Xie, J. (2008), "Online consumer review: word-of-mouth as a new element of marketing communication mix", *Management Science*, Vol. 54 No. 3, pp. 477-491.

-
- Chevalier, J.A. and Mayzlin, D. (2006), "The effect of word of mouth on sales: online book reviews", *Journal of Marketing Research*, Vol. 43 No. 3, pp. 345-354.
- Chintagunta, P.K., Chu, J. and Cebollada, J. (2012), "Quantifying transaction costs in online/off-line grocery channel choice", *Marketing Science*, Vol. 31 No. 1, pp. 96-114.
- Choi, J., Hui, S.K. and Bell, D.R. (2010), "Spatiotemporal analysis of imitation behavior across new buyers at an online grocery retailer", *Journal of Marketing Research*, Vol. 47 No. 1, pp. 75-89.
- Chu, J., Arce-Urriza, M., Cebollada-Calvo, J.J. and Chintagunta, P.K. (2010), "An empirical analysis of shopping behavior across online and offline channels for grocery products: the moderating effects of household and product characteristics", *Journal of Interactive Marketing*, Vol. 24 No. 4, pp. 251-268.
- Darley, W.K., Blankson, C. and Luethge, D.J. (2010), "Toward an integrated framework for online consumer behavior and decision making process: a review", *Psychology and Marketing*, Vol. 27 No. 2, pp. 94-116.
- Das, T.K. and Rahman, N. (2010), "Determinants of partner opportunism in strategic alliances: a conceptual framework", *Journal of Business and Psychology*, Vol. 25 No. 1, pp. 55-74.
- Dewey, J. (1910), "Teaching to teach with purpose and passion", in *How We Think*, DC Heath and Co, Boston.
- Dholakia, U.M., Kahn, B.E., Reeves, R., Rindfleisch, A., Stewart, D. and Taylor, E. (2010), "Consumer behavior in a multichannel, multimedia retailing environment", *Journal of Interactive Marketing*, Vol. 24 No. 2, pp. 86-95.
- Du, Y. and Tang, Y. (2014), "Study on the development of O2O e-commerce platform of China from the perspective of offline service quality", *International Journal of Business and Social Science*, Vol. 5 No. 4, pp. 308-312.
- Engel, J.F., Blackwell, R.D. and Miniard, P.W. (1986), *Consumer Behavior*, 5th ed., Dryden, Hinsdale, Illinois.
- Engel, J.F., Kollat, D.T. and Blackwell, R.D. (1978), *Consumer Behavior*, 3rd ed., Dryden, Hinsdale, Illinois.
- Floyd, K., Freling, R., Alhoqail, S., Cho, H.Y. and Freling, T. (2014), "How online product reviews affect retail sales: a meta-analysis", *Journal of Retailing*, Vol. 90 No. 2, pp. 217-232.
- Frost, F. and Kumar, M. (2000), "Intservqual – an internal adaptation of the GAP model in a large service organization", *Journal of Services Marketing*, Vol. 14 No. 5, pp. 358-377.
- Gotlieb, J.B., Schlacter, J.L. and Louis, R.D.S. (1992), "Consumer decision making: a model of the effects of involvement, source credibility, and location on the size of the price difference required to induce consumers to change suppliers", *Psychology and Marketing*, Vol. 9 No. 3, pp. 191-208.
- Guadagni, P.M. and Little, J.D.C. (1983), "A logit model of brand choice calibrated on scanner data", *Marketing Science*, Vol. 2 No. 3, pp. 203-238.
- Gupta, S. and Kim, H.W. (2010), "Value-driven internet shopping: the mental accounting theory perspective", *Psychology and Marketing*, Vol. 27 No. 1, pp. 13-35.
- He, Z., Cheng, T.C.E., Dong, J. and Wang, S. (2016), "Evolutionary location and pricing strategies for service merchants in competitive O2O markets", *European Journal of Operational Research*, Vol. 254 No. 2, pp. 595-609.
- Kirman, A. and Rao, A.R. (2000), "No pain, no gain: a critical review of the literature on signaling unobservable product quality", *Journal of Marketing*, Vol. 64 No. 2, pp. 66-79.
- Kotler, P. and Keller, K.L. (2012), *Marketing Management*, 14th ed, Pearson Education, London.
- Lee, J., Park, D.H. and Han, I. (2008), "The effect of negative online consumer reviews on product attitude: an information processing view", *Electronic Commerce Research and Applications*, Vol. 7 No. 3, pp. 341-352.
- Lee, J.J. (2017), "Opportunism, distortions, and governance in asymmetric buyer-seller relationships: theory and empirical evidence", Doctoral dissertation, Binghamton University, New York.

-
- Lewicki, R.J. and Bunker, B.B. (1996), "Developing and maintaining trust in work relationships", *Trust in Organizations: Frontiers of Theory and Research*, Vol. 114, p. 139.
- Long, Y. and Shi, P. (2017), "Pricing strategies of tour operator and online travel agency based on cooperation to achieve O2O model", *Tourism Management*, Vol. 62, pp. 302-311.
- Malhotra, N.K. (1984), "The use of linear logit models in marketing research", *Journal of Marketing Research*, Vol. 21 No. 1, pp. 20-31.
- Mishra, D.P., Heide, J.B. and Cort, S.G. (1998), "Information asymmetry and levels of agency relationships", *Journal of Marketing Research*, Vol. 35 No. 3, pp. 277-295.
- Mudambi, S.M. and Schuff, D. (2010), "Research note: what makes a helpful online review? A study of customer reviews on Amazon.com", *MIS Quarterly*, Vol. 34 No. 1, pp. 185-200.
- Ngwe, D. (2017), "Why outlet stores exist: averting cannibalization in product line extensions", *Marketing Science*, Vol. 36 No. 4, pp. 523-541.
- Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1985), "A conceptual model of service quality and its implications for future research", *Journal of Marketing*, Vol. 49 No. 4, pp. 41-50.
- Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1988), "SERVQUAL: a multiple-item scale for measuring consumer perceptions of service quality", *Journal of Retailing*, Vol. 64 No. 1, pp. 12-40.
- Park, C.W. and Young, S.M. (1986), "Consumer response to television commercials: the impact of involvement and background music on brand attitude formation", *Journal of Marketing Research*, Vol. 23 No. 1, pp. 11-24.
- Pentina, I., Bailey, A.A. and Zhang, L. (2018), "Exploring effects of source similarity, message valence, and receiver regulatory focus on yelp review persuasiveness and purchase intentions", *Journal of Marketing Communications*, Vol. 24 No. 2, pp. 125-145.
- Rao, A.R. and Monroe, K.B. (1989), "The effect of price, brand name, and store name on buyers' perceptions of product quality: an integrative review", *Journal of Marketing Research*, Vol. 26 No. 3, pp. 351-357.
- Read, S., Dew, N., Sarasvathy, S.D., Song, M. and Wiltbank, R. (2009), "Marketing under uncertainty: the logic of an effectual approach", *Journal of Marketing*, Vol. 73 No. 3, pp. 1-18.
- Reinartz, W., Wiegand, N. and Imschloss, M. (2019), "The impact of digital transformation on the retailing value chain", *International Journal of Research in Marketing*, Vol. 36 No. 3, pp. 350-366.
- Riquelme, I.P., Román, S., Cuestas, P.J. and Iacobucci, D. (2019), "The dark side of good reputation and loyalty in online retailing: when trust leads to retaliation through price unfairness", *Journal of Interactive Marketing*, Vol. 47, pp. 35-52.
- Roh, M. and Park, K. (2019), "Adoption of O2O food delivery services in South Korea: the moderating role of moral obligation in meal preparation", *International Journal of Information Management*, Vol. 47, pp. 262-273.
- Rosario, B.A., Sotgiu, F., De Valck, K. and Bijmolt, T.H. (2016), "The effect of electronic word of mouth on sales: a meta-analytic review of platform, product, and metric factors", *Journal of Marketing Research*, Vol. 53 No. 3, pp. 297-318.
- Rust, R.T. and Huang, M.H. (2014), "The service revolution and the transformation of marketing science", *Marketing Science*, Vol. 33 No. 2, pp. 206-221.
- Seale, D.A. and Rapoport, A. (1997), "Sequential decision making with relative ranks: an experimental investigation of the 'secretary problem'", *Organizational Behavior and Human Decision Processes*, Vol. 69 No. 3, pp. 221-236.
- Shankar, V., Venkatesh, A., Hofacker, C. and Naik, P. (2010), "Mobile marketing in the retailing environment: current insights and future research avenues", *Journal of Interactive Marketing*, Vol. 24 No. 2, pp. 111-120.
- Steuer, J. (1992), "Defining virtual reality: dimensions determining telepresence", *Journal of Communication*, Vol. 42 No. 4, pp. 73-93.

- Teo, T.S. and Yeong, Y.D. (2003), "Assessing the consumer decision process in the digital marketplace", *Omega*, Vol. 31 No. 5, pp. 349-363.
- Train, K.E. (2009), *Discrete Choice Methods with Simulation*, Cambridge University Press, Cambridge.
- Tsai, T.M., Wang, W.N., Lin, Y.T. and Choub, S.C. (2015), "An O2O commerce service framework and its effectiveness analysis with application to proximity commerce", *Procedia Manufacturing*, Vol. 3, pp. 3498-3505.
- Verhoef, P.C., Kannan, P.K. and Inman, J.J. (2015), "From multi-channel retailing to omni-channel retailing: introduction to the special issue on multi-channel retailing", *Journal of Retailing*, Vol. 91 No. 2, pp. 174-181.
- Vermeulen, I.E. and Seegers, D. (2009), "Tried and tested: the impact of online hotel reviews on consumer consideration", *Tourism Management*, Vol. 30 No. 1, pp. 123-127.
- Vroegrijk, M., Gijsbrechts, E. and Campo, K. (2013), "Close encounter with the hard discounter: a multiple-store shopping perspective on the impact of local hard-discounter entry", *Journal of Marketing Research*, Vol. 50 No. 5, pp. 606-626.
- Wang, C.L. (2021), "New frontiers and future directions in interactive marketing: inaugural editorial", *Journal of Research in Interactive Marketing*, Vol. 15 No. 1, pp. 1-9.
- Wathne, K.H. and Heide, J.B. (2000), "Opportunism in interfirm relationships: forms, outcomes, and solutions", *Journal of Marketing*, Vol. 64 No. 4, pp. 36-51.
- Xiao, S. and Dong, M. (2015), "Hidden semi-Markov model-based reputation management system for online to offline (O2O) e-commerce markets", *Decision Support Systems*, Vol. 77, pp. 87-99.
- Yarimoglu, E.K. (2014), "A review on dimensions of service quality models", *Journal of Marketing Management*, Vol. 2 No. 2, pp. 79-93.
- Zhang, J., Chen, H. and Wu, X. (2015), "Operation models in O2O supply chain when existing competitive service level", *International Journal of u-and e-Service, Science and Technology*, Vol. 8 No. 9, pp. 279-290.
- Zhang, S., Pauwels, K. and Peng, C. (2019), "The impact of adding online-to-offline service platform channels on firms' offline and total sales and profits", *Journal of Interactive Marketing*, Vol. 47 No. 8, pp. 115-128.
- Zhu, F. and Zhang, X. (2010), "Impact of online consumer reviews on sales: the moderating role of product and consumer characteristics", *Journal of Marketing*, Vol. 74 No. 2, pp. 133-148.

Corresponding author

Zecong Ma can be contacted at: zma1@stmarytx.edu

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgrouppublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com