

THE RELATIONSHIP BETWEEN MOBILE RETAIL SERVICE QUALITY, CUSTOMER SATISFACTION AND BEHAVIOR INTENTIONS

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ABSTRACT

This research investigated relationships between service quality, customer satisfaction and behavior intentions in the context of mobile retailing in China. Specifically, we explored relationships between four dimensions of mobile retail service quality (i.e., contact, responsiveness, fulfillment and efficiency), customer satisfaction and three types of behavior intentions (i.e., repurchase intentions, word-of-mouth and price sensitivity). Data were collected by surveying nearly 500 consumers who have at least three months of mobile shopping experience. Findings suggest that the fulfillment dimension has the largest positive effects on customer satisfaction, followed by efficiency and responsiveness. The contact dimension had only a marginally significant effect on customer satisfaction. Customer satisfaction was found to be a positive predictor of behavior intentions, such as making repurchases and sharing word-of-mouth, and a negative predictor of price sensitivity. The findings generated by this research provide theoretical and practical insights about the role of service quality in mobile retailing.

Keywords: Service Quality, Mobile Retailing, Mobile Shopping, China.

INTRODUCTION

The China Internet Network Information Center (CNNIC, 2017) reported that as of December 2016, the number of Chinese users who visit the internet via mobile phones had increased to 695 million, accounting for 95.1% of the total internet users. Because a wired internet infrastructure is not yet fully constructed in China, most Chinese consumers access the internet through mobile phones, rather than through personal computers. Thus, smartphones are the primary channel of online shopping for users in China. The number of mobile consumers in China has dramatically grown. On Singles' Day 2014, Alibaba, the largest mobile commerce platform in China, announced that transactions through Alibaba's mobile channel accounted for 43% of all transactions, increased sharply by 21% from 2013 (Ma, 2017). In 2015, Alibaba's orders through mobile channels made up 68.6% of gross merchandise volume (GMV) that was about \$9.8 billion. The total mobile GMV increased 158% from 2014 to 2015. Mobile shopping has become a major form for retailing in China.

More and more retailers are blending mobile channels to engage and retain their consumers. This also leads to the fierce competition in the mobile marketplace. The success of mobile retailers depends on the satisfaction the customers experience while shopping in their mobile applications or websites (Duhan & Singh, 2019). To obtain competitive advantage among rivals, mobile retailers need to earn customer satisfaction.

Most previous research on service quality has taken place in the context of bricks-and-mortar businesses. This research project examines relationships between service quality, customer

satisfaction and behavior intentions in the context of Chinese mobile retailing. The article is organized as follows. First, we review the literature associated with service quality, customer satisfaction and behavior intentions, particularly as these constructs might apply to mobile retailing. Second, we postulate hypotheses based on this literature review. Third, we describe the methods used to conduct the study. Fourth, we present the study's results. Finally, we present conclusions, theoretical implications, managerial implications and limitations.

LITERATURE REVIEW

Priporas & Pantano (2016) describe mobile retailing as a new type of customer purchasing experience, where customers purchase products via their smartphones and pick them up at the store or at home. Customers can access existing e-retailing websites and applications via mobile phones or smart pads. Increasingly, retailers are committed to capturing potential consumers from the mobile commerce market. According to the report of China Internet Network Information Center (CNNIC 2017), the number of Chinese mobile e-retailing applications is more than 408,000, and 506 million Chinese consumers shop online via mobile phone, and mobile shoppers accounting for nearly 95% of total online shoppers in China. The rapidly increasing number of mobile retailing apps has created fierce competition among mobile retailers in the Chinese marketplace.

Service Quality

Service quality has been shown to predict customer satisfaction and customer loyalty in a variety of contexts (Brady & Robertson 2001; Wang et al., 2015), including mobile telephone service (Lim et al., 2006; Özer et al., 2013), retail banking (Coetzee & Coetzee, 2019; Hamzah et al., 2017; Jham, 2018; Narteh, 2018), internet banking (Ramseook-Munhurrun & Naidoo, 2011), online food ordering (Sharma & Kumar, 2019), and retail pharmacies (Chen & Fu, 2015).

The most widely used tool for evaluating service quality is SERVQUAL (Calabrese & Scoglio, 2012). Parasuraman and his co-authors first proposed a model of service quality in Parasuraman et al. (1985); the authors refined the SERVQUAL measure in subsequent publications (e.g., Parasuraman et al., 1991; Parasuraman et al., 1988; see also Buttle, 1996; Coulthard, 2004; Ladhari, 2010; Wang et al., 2015). SERVQUAL assesses five dimensions of service quality: reliability (i.e., ability to perform the promised service dependably and accurately); assurance (knowledge and courtesy of employees and their ability to convey trust and confidence); tangibles (appearance of physical facilities, equipment, personnel and communication materials); empathy (caring, individualized attention to customer); and responsiveness (willingness to promptly help customers).

While SERVQUAL has been applied in the context of bricks-and-mortar shopping experiences (Gaur & Agrawal, 2006); it may not be suitable to measure the service quality in online shopping experiences (Kaatz, 2020). Parasuraman et al. (2005) developed and tested a scale, E-S-QUAL, to measure the quality of customer service delivered by websites. E-S-QUAL (i.e., efficiency, fulfillment, reliability and privacy) is intended to assess basic dimensions of service quality, but also unique dimensions of online service quality. Parasuraman et al. (2005) further developed the E-RecS-QUAL (i.e., responsiveness, compensation and contact) to also assess service recovery in the context of electronic commerce. SERVQUAL and its offspring has been criticized for their perception-minus-expectation measurement of service quality and because replications reveal an inconsistent factor structure (Kaatz, 2020). Several studies present alternative scales for assessing service quality in the context of online shopping; after conducting

a meta-analysis of these studies, Blut et al. (2015) concluded that four dimensions underlie electronic service quality: website design, fulfillment, customer service and security/privacy.

Service attributes of mobile retailing should combine attributes of *retail* service quality with attributes of *mobile* service quality. In previous research, various measures have used to measure mobile service quality. For example, Lim et al. (2006) proposed multiple dimensions of consumers' perceived quality of mobile services, including price plans, data services, network quality, entertainment services, customer service, messaging services, billing system, and locator services. On the basis of mobile service quality dimensions proposed by Brady & Cronin (2001) and Lu et al. (2009) created m-service quality measures consisting of interaction quality, physical quality and outcome quality. These studies were conducted in the context of telecommunication carriers' service. Thus, their findings and measures may not generalize to mobile retailing.

M-S-QUAL, developed by Huang et al. (2015), was designed to assess service quality experienced during m-commerce shopping experiences. The measure has two parts one for assessing shopping for virtual products and another for assessing shopping for physical products. The authors identified five factors (contact, responsiveness, fulfillment, privacy and efficiency) relevant to the process of shopping for a virtual product and four factors (contact, responsiveness, fulfillment and efficiency) relevant to the process of shopping for a physical product.

Because physical products dominate the retail market, research reported here will rely on the four dimensions of M-S-QUAL relevant to shopping for physical products (i.e., contact, responsiveness, fulfillment and efficiency). *Contact* refers to the availability of online representatives and telephone assistance. *Responsiveness* refers to the effectiveness of the procedures of handling problems and return choices on the mobile platforms or applications. *Fulfillment* refers to the degree to which the mobile retailers' promises of item availability and order delivery are fulfilled. Finally, *efficiency* refers to whether the platform responds quickly and whether the consumers perceive ease to use (Huang et al., 2015). While M-S-QUAL was first presented in 2015, the construct has received little attention in the literature. Other than the original publication (Huang et al., 2015), the authors could not locate a single published study where M-S-QUAL was applied. While Huang et al. (2015) refer to their construct as "*mobile service quality*," we use the label "*service quality in the context of mobile retailing*" in order to distinguish it from service quality associated with mobile telephone service.

Previous studies provide evidence for the importance of individual constructs that are shared by M-S-QUAL (i.e., contact, responsiveness, fulfillment and efficiency) in the retail sector. For example, Dolen et al. (2004) found that contact employee performance is a crucial element influencing encounter satisfaction and relationship satisfaction in retailing. Responsiveness was found to predict customer loyalty in the context of mobile retailing (Lin, 2012). Fulfillment was found to significantly affect customer satisfaction in online and offline retailing (Rao et al., 2011). Finally, the evidence provided by Lee & Wong (2016) suggests that efficiency positively influences customer satisfaction in mobile commerce. While these studies provide evidence supporting the influence of specific dimensions of M-S-QUAL, to our knowledge, no further research has comprehensively applied Huang, Lin & Fan (2015)'s four factors (contact, responsiveness, fulfillment and efficiency) in the context of mobile retailing.

Customer Satisfaction

Customer satisfaction is considered a main link in the long-term relationship between companies and consumers. Customer satisfaction leads to lower switching rates (Sabir et al., 2013), higher likelihood of repurchase, particularly in-service contexts Szymanski & Henard, (2001), and

increased loyalty (Curtis et al. 2011). Lovelock, Walker & Patterson (2001) defined customer satisfaction as a consumers' emotional responses in which the needs, expectations, and desires of consumers have been met or exceeded during the whole process of customer experience. In mobile commerce, Lin & Wang (2006) pointed out that customer satisfaction can be defined as the total response of consumers to the consuming experiences in the mobile shopping environment.

Previous research has identified a positive correlation between service quality and customer satisfaction (Brady & Robertson, 2001). For example, Hisam et al. (2016) identified service quality as one of the major determinants of customer satisfaction in selected retail stores, while Sagib & Zapan (2014) found that service quality predicted customer satisfaction in the context of mobile banking. Although many previous studies explored the relationships between the retail sector's service quality and customer satisfaction, those studies emphasized traditional retailing (Yu & Ramanathan, 2012; Hisam et al., 2016) and in e-retailing (Herington & Weaven, 2009). We hope to fill a research gap by exploring service quality and customer satisfaction in the increasingly important context of mobile retailing.

Behavior Intentions

Previous research has explored relationships among service quality, customer satisfaction, and behavior intentions. Service quality has been found to be positively and directly related to behavior outcomes (Bitner, 1990). When customers' perceived quality of service delivery is high, their intentions to repurchase, diffuse positive word-of-mouth, and recommend tends to increase. Consequently, the higher the service quality perceived by consumers in shopping experience, the more likely they are to repurchase the product/service (Yu & Ramanathan, 2012).

However, Taylor & Baker (1994) found that customer satisfaction had more dramatic effects than service quality on behavior intentions. Some scholars argue that customer satisfaction mediates in the relationship between service quality and behavior intentions (Olorunniwo & Hsu, 2006; Caruana, 2002). In addition, empirical results indicate that enhanced service quality will drive higher overall satisfaction, which in turn will trigger favorable intentions and/or behaviors (Brady & Robertson, 2001; Yu & Ramanathan, 2012). Thus, customer satisfaction is deemed as a critical mediator in the relationship between service quality and behavior intentions.

Moreover, customer satisfaction is identified to be significantly related with behavior intentions. When customers feel higher satisfaction with mobile service providers, their willingness to repurchase (Wang et al., 2019) and to share positive word-of-mouth (Thakur, 2018) is likely to increase. Furthermore, Natarajan et al. (2017) found that satisfaction dramatically affects customers' price sensitivity during the course of mobile shopping. Therefore, this research assumes that customer satisfaction will predict three behavior intentions, including repurchase intentions, word-of-mouth intentions, and price sensitivity.

HYPOTHESES

In this section, we present hypotheses derived from a theoretical model (see Figure 1). The model is based on the literature discussed above on service quality, customer satisfaction and behavior intentions in context of mobile retailing. We postulate four service quality dimensions (i.e. contact, responsiveness, fulfillment and efficiency) as antecedents of customer satisfaction. Secondly, we postulate customer satisfaction as a predictor of behavior intentions (i.e., repurchase intentions, word-of-mouth and price sensitivity).

As discussed above, if customers perceive that service quality delivered by a mobile retailer is higher, they will express more satisfaction with mobile retailer. As discussed above, the four dimensions of mobile service quality (i.e. contact, responsiveness, fulfillment and efficiency) also have impacts on fulfilling customer satisfaction. In the subsection that follow, we will postulate the relationships between these four dimensions with customer satisfaction.

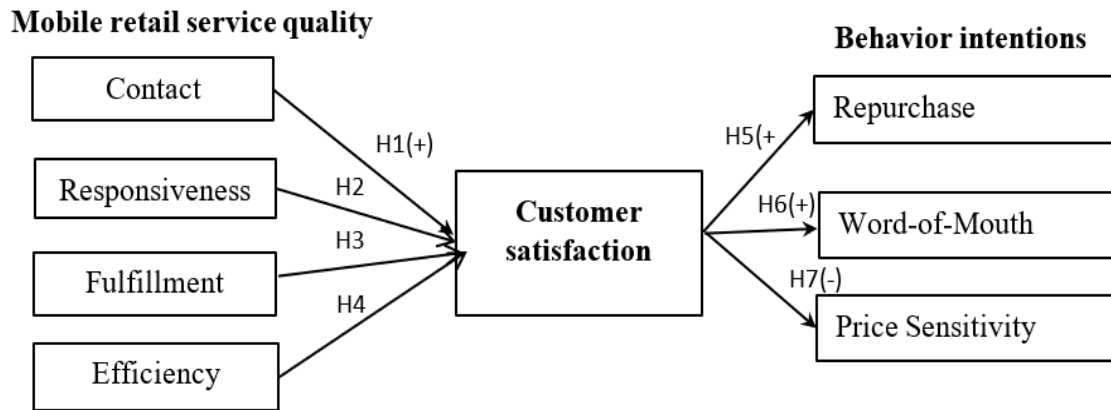


FIGURE 1
THEORETICAL MODEL

Contact

Contact refers to the availability of online representatives and telephone assistance (Huang et al., 2015). In retail environments, customer contact with employees is the primary way for customers to communicate with marketers during pre-purchase, purchase and post-purchase. Although technology has transformed commerce, it cannot replace all of the ways that companies address customers' individual issues and all of the ways that companies show care for customers (Güngör, 2007). Dolen et al. (2004) stated that service providers strongly influence customer experience and customer satisfaction by having competent and close contact with their consumers. Even though customers can engage with mobile retail applications to shop anywhere and anytime, it is essential that mobile retailers provide contact services with high quality. When retail companies enable customers to speak to a live person to help them solve specific problems, handle their complaints and provide personalized advice, the levels of customer satisfaction will be higher. Therefore, this study proposes that:

H1: The contact dimension of service quality will be positively associated with customer satisfaction in the context of mobile retailing.

Responsiveness

Responsiveness refers to the effectiveness of the procedures for handling problems and return choices on the mobile platforms or applications (Huang et al., 2015). Richins (1983) discovered that customer satisfaction is positively correlated with the perceptions of consumers toward the retailer's responsiveness to complaints and problems. Lin (2012) found that responsiveness affected customer loyalty in the context of online and mobile retailing. Despite the convenience and flexibility of mobile shopping for customers, product delivery is often costly, slow and has a

high failure rate. It is difficult to keep quality of physical products consistent (Huang et al., 2015). Effective problem-handling and complaints-handling processes that enable consumers have a direct contact with representatives of the firms to solve their problems and complaints immediately can neutralize negative feelings and enhance the customer's experience. Thus, this study proposes that:

H2: The responsiveness dimension of service quality will be positively associated with customer satisfaction in the context of mobile retailing.

Fulfillment

Fulfillment refers to the degree to which the mobile retailers' promises of item availability and order delivery are fulfilled (Huang et al., 2015). The importance of fulfillment has been emphasized by many researchers. Oliver (1997) argued that satisfaction is a customer's response to fulfillment. Using archival data on 260 e-tailers, Rao et al. (2011) found that quality of fulfillment leads to customer satisfaction and retention. Thus, this study proposes that:

H3: The fulfillment dimension of service quality will be positively associated with customer satisfaction in the context of mobile retailing.

Efficiency

Efficiency refers to whether the platform responds quickly and whether the consumers perceive it as easy to use (Huang et al., 2015). In mobile commerce, the efficiency of using mobile phones as a medium to connect to a mobile store for making purchases will positively influence customer satisfaction (Cho, 2009). Shankar et al. (2010) argued that it is essential for retailers to provide effective mobile services to meet their customers' needs by improving the convenience of shopping. If transactions can be done continuously and sustainably, and mobile retailers do not waste customers' cost, energy and time, this will create a satisfying experience for consumers. Thus, this study proposes that:

H4: The efficiency dimension of service quality will be positively associated with customer satisfaction in the context of mobile retailing.

As discussed above, customer satisfaction plays a mediating role in the relationship between mobile service quality and behavior intentions, and it is directly associated with behavior intentions. After assessing the correlations between service quality, customer satisfaction, perceived value and behavior intentions, Kuo et al. (2009) found that service quality has an indirect correlation with the post-purchase intentions through customer satisfaction in mobile value-added services. They stated that service quality will positively influence consumers' perceived value and customer satisfaction, which in turn, will have positive effects on their post-purchase intentions toward mobile value-added services. For example, satisfied customers will have higher willingness to repurchase the same products in the same stores and to share positive word-of-mouth with their acquaintances. Their sensitivity to price will also be lower. Therefore, in this study, the researcher intends to investigate the direct relationships between customer satisfaction and behavior intentions.

Customer Satisfaction and Repurchase Intention

Customer satisfaction is critical for business success, especially when it comes to retailing. Customers with higher levels of satisfaction are more loyal toward retailers and are more likely to repurchase in the retailers' shops (Khan, 2012). Similarly, in mobile retailing context, repurchase intentions indicate the consumers' willingness to use their mobile phones to buy a product provided by the same mobile retailers from the same mobile websites or applications in the future. In the context of mobile commerce, previous research suggests a direct positive correlation between customer satisfaction and repurchase intentions (Zhao et al., 2012; Thakur, 2018). Thus, this study proposes that:

H5: Customer satisfaction will be positively related to repurchase intention in the context of mobile retailing.

Customer Satisfaction and Word-of-Mouth

Word-of-mouth (WOM) refers to communication between customers about a product/service offering. Brown et al. (2005) who conducted research to examine the antecedents of positive WOM intentions in the retailing context discovered that customer satisfaction is significantly associated with positive WOM intentions. In the context of mobile commerce, Kalinić et al. (2020) found that customer satisfaction predicts word-of-mouth intentions. Thus, this study proposes that:

H6: Customer satisfaction will be positively related to intention to share positive word-of-mouth in the context of mobile retailing.

Customer Satisfaction and Price Sensitivity

Price sensitivity refers to the consumers' reaction toward prices and price variations (Goldsmith et al., 2005). Low et al. (2013) found that customers who are satisfied with products on offer at retail stores are less price sensitive. In the context of mobile telephone service, Munnukka (2005) found that satisfaction with mobile services is a strong predictor of price sensitivity. Consequently, we expect that customer satisfaction will be inversely related to price sensitivity. Thus, this study proposes that:

H7: Customer satisfaction will be negatively related to price sensitivity in the context of mobile retailing.

METHODS

Data was collected via an online survey conducted in China. In this section, we describe the items included in the survey, the process for pretesting the survey, and the method of recruiting respondents for the main study.

Measures

The questionnaire included 27 items adapted from previous studies; some questions were revised to suit the mobile retailing context. All items were assessed using a 7-Point Likert-type scale (7="strongly agree"; 1="strongly disagree").

Fifteen items, derived from Huang, Lin and Fan (2015), were used to measure *service quality in the context of mobile retailing*. Five items assessed efficiency (e.g., "The retailer's mobile shopping application or site allows me to access it quickly"; "The retailer's mobile

shopping application or site does not crash”). Four items assessed fulfillment (e.g., “*The mobile retailer delivers products when promised*”; “*The mobile retailer provides truthful products*”). Three items assessed contact (e.g., “*The mobile retailer’s service agents provide me with personalized recommendations and advice*”; “*The mobile retailer provides me with a telephone number to reach the company for solving specific problems*”). Three items assessed responsiveness (e.g., “*The mobile retailer handles product returns well*”; “*The mobile retailer provides me with a meaningful guarantee*”). All fifteen items were combined to assess overall mobile service quality.

Customer satisfaction was measured with three items adapted from Marinkovic & Kalinic (2017) and Wang et al. (2019). The three items are: “*I am quite satisfied with m-commerce services*”; “*My experience with using m-commerce is positive*”; and “*The mobile application does a satisfactory job of fulfilling my needs.*”

To assess *repurchase intentions*, three items were adapted from Thu, (Jebarajakirthy & Thaichon, 2016; Wang et al., 2019). The three items are: “*I intend to continue to purchase products on the retailer’s mobile shopping applications or sites in the future*”; “*I intend to continue to purchase products on the mobile retailer’s shopping applications or sites rather than switching to any alternative shopping channel*”; and “*I intend to consider this retailer’s mobile shopping application or sites as my first choice of shopping channel to purchase products.*”

Word-of-mouth intentions were measured using three items adapted from Thakur (2018). The three items are: “*I am willing to recommend to my friends for purchasing products in the mobile retailer’s shopping applications or sites*”; “*I am willing to recommend mobile retailer’s shopping applications or sites to other customers for making purchases*”; and “*I am willing to point out the positive aspects of mobile retailer’s shopping applications or sites for making purchases, if anybody criticizes it.*”

Price sensitivity was assessed using three items adapted from Goldsmith et al. (2005), as cited in Natarajan et al. (2017). The three items are: “*I do not mind paying more to purchase a product on a mobile retailer’s shopping applications or sites*”; “*I do not mind spending a lot of money to purchase a product on mobile retailer’s shopping applications or sites*”; and “*Even though I know that purchasing a product through mobile retailer’s shopping applications or sites is likely to be more expensive, it does not matter to me.*” These items were reverse-coded so that a higher value meant that a consumer is more sensitive to price (or less willing to pay a price premium).

In addition to the items described above, the questionnaire queried for respondents’ demographic information (i.e., gender, age, disposable income and education, and consumers’ shopping habits).

All items were translated from English to Mandarin Chinese by the first author, who is fluent in both languages. Translations were then edited and revised by two people who are professionally employed as English teachers in China.

Pretest

A pretest with a small sample was conducted to assess the quality of measurement items. The pretest questionnaire was distributed to a convenience sample of 384 potential respondents through the social media, WeChat. Of the potential respondents that received the request, 97 (54 females, 43 males) responded. Thus, the pretest achieved a 25.26% response rate.

Using the pretest responses, the reliability of scales was estimated using Cronbach’s α , (Cronbach 1951). Cronbach’s α coefficients for mobile service quality (0.90), efficiency (0.75),

fulfillment (0.79), contact (0.70), repurchase intentions (0.71), WOM (0.72) and price sensitivity (0.85) were all greater than 0.7. Cronbach's Alpha coefficients for responsiveness and customer satisfaction were 0.68 and 0.69, respectively. Pretest results suggest that the measures have high internal consistency.

Sample for the Main Study

To be included in the sample, potential respondents had to have at least three months of mobile shopping experiences in mobile retail shops in China. Respondents were informed about this criterion when response was requested, and they were further screened using a screening question when they opened the questionnaire.

With the help of Tiancheng data studio, the questionnaire was sent to 1866 potential respondents via different social media, such as WetChat groups, QQ groups, and Sina Weibo. Of potential respondents that received the request, 494 responded to the questionnaire. Thus, the main study achieved a response rate of 26.5%.

Cronbach's α coefficients were calculated using data from the main study. These were found to be slightly lower than coefficients based on pretest results. The coefficients were: efficiency 0.67, fulfillment 0.77, contact 0.67, responsiveness 0.73, customer satisfaction 0.68, repurchase intentions 0.65, WOM 0.72, and price sensitivity 0.79.

RESULTS

In this section, we will briefly outline the profiles of the survey respondents and then will present hypothesis test results.

Description of the Sample

Respondents' demographic characteristics are presented in Table 1. Of the total 494 respondents, 264 respondents (53.4%) are female and 230 respondents (46.6%) are male. The largest group of respondents are aged from 25 to 34 years old (225; 45.6%). With regards with education background, a large group of respondents (220; 44.5%) obtained a bachelor's degree. In terms of monthly disposable income, a large group of respondents (207; 41.9%) reported disposable income from CNY 4000 to CNY 6000 in a month.

	Characteristics	Frequency	Percent%
Gender	Female	264	53.40%
	Male	230	46.60%
Age	Below 18 years old	2	0.40%
	18-24	111	22.50%
	25-34	225	45.60%
	35-45	123	24.90%
	46-55	31	6.30%
	Above 55	2	0.40%
Education	Less than high school degree	2	0.40%
	High school degree or equivalent	27	5.50%
	Some college but no degree	50	10.10%

	Associate degree	151	30.60%
	Bachelor degree	220	44.50%
	Graduate degree and above	44	8.90%
Monthly Disposable Income	Less than CNY 2000	18	3.60%
	CNY 2000-CNY 4000	110	22.30%
	CNY 4000-CNY 6000	207	41.90%
	CNY 6000- CNY 10000	126	25.50%
	More than CNY 10000	33	6.70%
Note: CNY1000 equals approximately USD143			

Hypothesis Tests

Hypotheses were tested through two separate regression analyses. Results of the regression analysis of the service quality on customer satisfaction are presented in Table 2. The service quality dimension of contact (H_1) is found to be a marginally significant ($p \leq 0.10$) positive predictor of customer satisfaction. Service quality dimensions of responsiveness (H_2), fulfillment (H_3) and efficiency (H_4) were found to be highly significant ($p \leq 0.01$) positive predictors of customer satisfaction. Thus, hypothesis 1 is marginally supported, while hypotheses 2 through 4 are supported.

Independent Variables	Beta	t-value	p-value
Constant		6.71	<0.001
Contact	0.07	1.95	0.052
Responsiveness	0.13	2.87	0.004
Fulfillment	0.47	10.04	<0.001
Efficiency	0.25	6.65	<0.001
R ² =0.61, Adjusted R ² =0.61; n=494			

The results of the regression analysis of the customer satisfaction on each of the three dimensions of behavior intentions (i.e., repurchase intentions, word-of-mouth intentions, price sensitivity) are presented in Table 3. In these analyses, customer satisfaction is found to be a highly significant ($p \leq 0.01$) predictor of repurchase intentions (H_5), word-of-mouth intentions (H_6), and price sensitivity (H_7). Thus, hypotheses 5 through 7 are supported.

Independent Variables	Model	Beta	p-value	R ²	Adjusted R ²
Repurchase Intentions	Constant		<0.001	0.61	0.61
	Customer Satisfaction	0.78	<0.001		
Word-of-mouth	Constant		<0.001	0.38	0.38
	Customer Satisfaction	0.62	<0.001		
Price Sensitivity	Constant		<0.001	0.19	0.19
	Customer Satisfaction	-0.44	<0.001		

DISCUSSION

In this section, we will summarize the study's results, and we will discuss the study's

theoretical and managerial implications, the study's limitations, and directions for future research. As a predictor of customer satisfaction, *fulfillment* (i.e., the degree to which the mobile retailers' promises of item availability and order delivery are fulfilled) had a higher β value than other service quality dimensions. In other research, order fulfillment has been found to be one of the most critical determinants of customer satisfaction (Rao et al., 2011). This result suggests that mobile retailers should improve item availability and order fulfillments in order to improve customer satisfaction.

The service quality dimension with the second largest magnitude of positive effects on customer satisfaction was *efficiency* (i.e., whether the platform responds quickly and whether the consumers perceive it as easy to use). Lee & Wong (2016) also identified efficiency as playing an essential role in improving customer satisfaction in mobile commerce. This result suggests that mobile retailers should concentrate on improving the ease and speed of visiting their websites or applications for customers.

Another dimension of service quality that was found to be a highly significant predictor of customer satisfaction was *responsiveness* (i.e., the effectiveness of the procedures of handling problems and return choices on the mobile platforms or applications). This result is consistent with Lin (2012) who reported that customers' perception of responsiveness was a key driver of customer satisfaction. Recovery response time has been found to be critical in affecting customer satisfaction in e-tailing contexts (Crisafulli & Singh, 2017). This result suggests that mobile retailers should deliver products as promised accurately, and should immediately respond to customers who report problems or ask questions.

The *contact* (i.e., the availability of online representatives and telephone assistance) dimension of service quality had only a marginally significant effect on customer satisfaction. This marginally significant result may indicate that the Chinese mobile commerce sector is relatively mature; many Chinese mobile retailers have established effective contact centers and the level of contact assistance available is relatively high. Customers may perceive that contact service is a basic service that every mobile retailer provides. However, other research (e.g., Dolen et al., 2004) has found that the performance of contact employees has positive effects on customer satisfaction. In the online retailing context, Parasuraman et al. (2005) also found that contact quality significantly influenced overall customer satisfaction in E-RecS-QUAL model. Thus, mobile retailers should not neglect contact quality in their operations.

Customer satisfaction was found to be a significant predictor of three behavior intentions studied here. As suggested by its β values, customer satisfaction appears to have the greatest influence on repurchase intentions, followed by positive WOM and price sensitivity. These results are similar to those reported in previous studies. When customer satisfaction is higher, customers are more likely to repurchase (Chong, 2013; Wang et al., 2019), and to share positive WOM with their friends and other customers (Thakur, 2018). Meanwhile, customers' price sensitivity (Natarajan et al., 2017) will be lower with the increasing customer satisfaction. Thus, mobile retailers who satisfy their customers at a high level can expect to earn positive outcomes such as repurchase, positive word-of-mouth, and less price sensitivity.

Theoretical Implications

Although the relationships between service quality, customer satisfaction and behavior intentions have been widely examined, there is a lack of research conducted in the context of mobile retailing. To our knowledge, this is the first study to assess dimensions of M-S-QUAL

other than the original article that proposed the measure (Huang et al., 2015). This study examined to what extent each of four M-S-QUAL dimensions (i.e., contact, fulfillment, responsiveness and efficiency) influences customer satisfaction in the context of Chinese mobile retailing. M-S-QUAL bridges gaps left by SERQUAL and E-S-QUAL as these latter two models are more appropriate for measuring service quality in bricks-and-mortar retailing and electronic retailing. This study applies the concepts of service quality, customer satisfaction and behavior intentions to the mobile retailing context.

Managerial Implications

To increase the likelihood of business success in mobile retail market, mobile retailers should adopt a customer-centric perspective. Our findings demonstrate that customer satisfaction is positively related to repurchase intentions and to word-of-mouth intentions, while it is negatively associated with price sensitivity. Stated another way, when customer satisfaction with mobile retailers is higher, customers are more likely to repurchase products on the same mobile retailers' store rather than switching to other mobile retailers. Higher customer satisfaction also leads customers to recommend a mobile retailer to their friends and other potential customers. In addition, if customer satisfaction with mobile retailers is high, those customers will be willing to pay a higher price for products in the mobile retailers' stores. Mobile retailers should place customer satisfaction in the heart of business because doing so can lead to favorable customer behavior outcomes, which will help those retailers compete with rivals in mobile retail market.

Our results also suggest that mobile retailers should enhance service quality with a view toward improving customer satisfaction. Findings regarding four dimensions of service quality (i.e. contact, fulfillment, efficiency and responsiveness) also provide practical insights for mobile retailers. Fulfillment is the strongest predictor of customer satisfaction, suggesting that mobile retailers must establish effective delivery systems. Because efficiency is also a particularly strong predictor, it is essential for mobile retailers to make sure that customers can easily and quickly access the mobile shopping applications and sites without technical problems. Responsiveness is also a significant predictor, pointing to the importance for mobile retailers of quickly and efficiently responding to customers when they have problems, complaints or questions. Finally, contact is a marginally significant predictor, suggesting that mobile retailers should not ignore the importance of online representatives and telephone assistance.

Limitations and Directions for Future Research

Most studies of service quality have been done in Western contexts (Liang et al., 2013). Thus, one of the contributions that this study makes is extending the study of service quality into an Asian context. However, the study relied on a convenience sample. We are unable to assume to what extent the sample is representative of all Chinese consumers. Consumers from different regions of China, and from urban vs. rural areas, have different needs and values. Future research might compare consumers between rural areas and urban areas and between geographic regions in China to generate practical insights for regional practitioners.

The results of this study may not be generalizable to other countries. Unlike many developed markets (e.g. United States of America), where big-box retailers (e.g., Walmart & Target) dominate retail, the Chinese retail market is highly dynamic and fragmented (Lu & Zhao, 2010). Furthermore, cultural differences might affect the values and habits of mobile customers. Future research is needed to explore service quality in retail contexts in other countries. However, China

is a large market where mobile retailing is popular and is thus an appropriate context for the study.

Reliability estimates calculated based on responses to the main study were lower than ideal. Cronbach's α was below 0.70 for four constructs assessed in the main study. The reliability estimates for the pretest results were higher than for the main study. This is particularly concerning for the M-S-QUAL constructs as those are central to the study. Future research might explore ways to revise the scale to improve their consistency.

In adapting the M-S-QUAL model developed by Huang et al. (2015) to measure service quality in a mobile retailing context, this study examined the four dimensions (i.e. contact, responsiveness, fulfillment and efficiency) designed to assess service quality when shopping for physical products. Future research could further examine relationships between service quality, customer satisfaction and behavior intentions in contexts where customers are shopping for virtual products, such as digital copies of music or books.

CONCLUSION

This study is only a modest step in the exploration of service quality in the context of mobile marketing. Future research is needed to further explore the topic in a more nuanced and complex ways. For example, recent work by Kaatz suggests that customer perceptions of service quality in the context of mobile retail may be affected by perceptions of risk (performance risk and security risk), and on customer location and time of day for shopping. As mobile technologies continue to develop and become more complex, measures to assess customer satisfaction may also need to become more complex. For example, mobile retailing may rely on automated or expedited checkout, digital mapping, selection of delivery services, and/or downloads of digital products; factors defining service quality may need to be adapted to incorporate these elements. Future research is also needed to examine service quality in the context of business-to-business vs. business-to-consumer mobile retail, and in the context of small-to medium-sized enterprises.

Mobile retail is a part of omnichannel retail. Future research should examine the relationship between service quality in one channel with service quality in another channel. For example, Zhang and his team found that integration, i.e., the ability of an omnichannel retailer to combine multiple services and associated service channels to deliver a superior and seamless across channels experience to its customers, is an important predictor of perceived service quality in an omnichannel context.

Service quality in the context of mobile retailing fits within the broader context of retail and communication technology. In many countries, large segments of consumers gain access to the internet by using mobile devices and have skipped ("*leapfrogged*") the traditional means of access: personal computers; some argue that mobile internet access offers lower levels of functionality when compared to personal computer-based access. Central governments have a responsibility to regulate any communication technology and should do so in a way that maximizes access.

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