Consumer Behavior and Mobile Payment: An Empirical Study of the Restaurant Industry

ABSTRACT

This study analyzes the rapid development of mobile payment in the fast-food restaurant industry and the effect it has on consumer behavior. Moreover, this work examines the influence of mobile payment users' motivation on satisfaction and the effects of motivation and satisfaction on continuance intention. A total of 547 questionnaires were collected in Shenzhen China prior to the late 2019 COVID-19 pandemic outbreak. The findings indicate that motivation and satisfaction each has a significant positive, direct effect on the continuance intention of mobile payment usage. The results show that intrinsic motivation, notably the *Perceived Enjoyment* factor, has a greater impact than satisfaction on continuance intention. Respondents are less satisfied with *Perceived Privacy* and *Perceived Security* but show greater satisfaction with *Perceived Service Quality*. *Perceived Enjoyment* and *Perceived Service Quality* can evoke the intention to continue to use mobile payment. The results of this research provide useful information for mobile payment providers and fast-food restaurant owners to further improve their services. The proposed consumer behavior framework of the continuance intention of mobile payment service usage can be used as a basis for hospitality researchers to refine research on mobile payment technology and service management.

Keywords Consumer behavior, Continuance intention, Mobile payment, Motivation, Restaurant industry, Satisfaction

Introduction

The evolution of technology has affected our daily lives, and with the proliferation of mobile phones, laptops, and other electronic devices, communication and entertainment have become almost limitless. In recent years, those technologies have been adopted to perform certain tasks such as making payments or conducting various financial transactions. Mobile phones offer numerous functions and have so much potential that they could be used as wallets and execute all payments (De Kerviler, Demoulin & Zidda, 2016). The increase in mobile phone ownership and adoption has led to the growth of mobile payment services, which have become among the most essential personal and professional consumer activities in recent years (Liebana-Cabanillas *et al.*, 2017).

Mobile payment is believed to be safe, easy to use, effective, and an extremely important tool for the hospitality industry (Cobanoglu *et al.*, 2015). Mobile payment has numerous advantages over traditional payment methods, such as mobility and flexibility in various contexts, including for retail stores and fast-food restaurants (I-Research, 2017). Relative to using cash, mobile payment is more convenient and enables faster payment at anytime from anywhere (Pham & Ho, 2015; Teo *et al.*, 2015). Recently, Boden, Maier, and Wilken (2020) conducted an empirical study exploring mobile payment as a new payment method. They found that *Convenience* was a key driver of increased *Willingness to Pay* for mobile payment and thus recommended that major credit card companies such as Visa, MasterCard, and American Express develop mobile payment apps to increase the adoption of this new technology.

Consumers are increasingly accepting and adopting mobile payment as part of their everyday lives (Oxford Economics *et al*., 2017). In 2019, the global mobile payment market stood at USD 1.18 trillion and was predicted to grow to USD 8.94 trillion by 2027 (Fortune Business Insights, 2020). In 2019, the highest percentages of smartphone users adopting a mobile payment platform were from China (82%), Denmark (40.9%), India (37.6%), and South Korea (36.7%) (Clark, 2019). Industry experts predicted the global number of mobile payment users to grow from 440 million users in 2018 to 760 million users by 2020 (Clement, 2020). China is one of the top Asian countries in terms of the number of mobile payment users, and the trend is increasing (2018b). In March 2020, mobile payment users reached 776.08 million mainland China residents (Daxue Consulting, 2020). According to the Global and China Mobile Payment Industry Report, 2019–2025 (ResearchInChina, 2019), the 2018 third-party mobile payment transactions in China accounted RMB 190.5 trillion, and China's mobile payment market is expected to reach RMB 1,800 trillion by 2025.

Many Chinese consumers have adopted urbanized lifestyles that generate higher demand for fast-food services. Fast-food restaurants provide a comfortable dining environment, trendy food items, speedy food service, and food quality assurance. IBIS World forecasts that over the next five years (2020–2025), China's fast food restaurant industry will continue to grow strongly (IBISWorld, 2020). Nevertheless, growth in large cities might slow down because of the increase in the number of new restaurants, thereby resulting in growing competition and market saturation. The use of technology such as mobile payment helps fast-food restaurants maintain their competitiveness and improve consumer experience. Improved consumer experience and greater convenience can facilitate the rise in fast-food restaurant sales and order

volumes. Fast-food restaurants that employ mobile payment or similar technology can manage consumer payment faster allow for faster and higher rate of table turnover. Consumers may even be more willing to place huge orders frequently (Gundaniya, 2020). Furthermore, a recent study confirmed the existence of consumer intention to recommend mobile payment technology in social networks; thus, fast-food restaurants marketers can utilize the construct of consumers' propensity to recommend a mobile payment technology to generate higher rates of positive recommendations in social networks or in their social marketing campaigns (Oliveira, Thomas, Baptista and Campos, 2016).This work investigates the determinants of the continuance intention of mobile payment service and identifies the essential factors of consumer motivation for and satisfaction with the continued usage of mobile payment.

Many studies on consumer adoption of mobile payment technology used theoretical models, such as the *Technology Acceptance Model* (TAM) (Dewan & Chen, 2005; Gerpott & Kornmeier, 2009; Mallat & Dahlberg, 2005; Pu *et al.*, 2020), *Unified Theory of Acceptance and Use of Technology* (UTAUT) *Model* (Xu, 2014; Chen, 2012), and *UTAUT2 Model* (Oliveira et.al., 2016). Most studies targeted mobile payment users' acceptance (Morosan & DeFranco, 2016; Thakur, 2013), satisfaction (Cyr, 2008; Eid, 2011), and motivation (Jin & Villegas, 2008). Few investigations focused on the continued usage of mobile payment and its relationship with motivation and satisfaction. The study of the relationships of the three constructs are important for three reasons. First, the identification of consumer need provides useful information for

restaurant management to optimize their service strategies. Second, the positive influence of motivation on satisfaction can aid restaurant management in understanding how to maximize consumer satisfaction. Satisfaction can lead to continued usage of mobile payment and would help generate repeat businesses and foster consumer loyalty. Finally, the testing of the casual relationships among the constructs could facilitate the elucidation of consumer behavior and intentions to continue to use mobile payment. In other words, the model will serve as the basis for developing more precise applications related to consumer behavior, particularly those concerning motivation and satisfaction with mobile payment. The present study concentrates on mobile payment users in the fast-food restaurant industry and explores the determinants of the continued usage intention of mobile payment. The purposes of this study are to investigate a) the perceived importance of motivation and satisfaction as well as the continuance intention for mobile payment usage and b) the effect of mobile users' motivation in terms of *Perceived Enjoyment* (intrinsic motivation) and *Perceived Usefulness* (extrinsic motivation) on users' satisfaction aspects such as *Perceived Security*, *Perceived Privacy*, and *Service Quality*. This work thus identifies the effects of users' motivation and satisfaction on their continuance intention. This article extends the research on hospitality consumer behavior and mobile payment. Practical suggestions and recommendations are provided for fast-food restaurant owners and mobile payment system providers in relation to improving revenue and developing more effective digital marketing and customer loyalty programs.

Literature Review

Mobile Payment

Mobile payment is a payment service performed from or via a mobile device and is also referred to as mobile money, mobile money transfer and mobile wallet (Wikipedia, 2017). Ondrus and Pigneur (2005) defined a wireless transaction via mobile payments as the monetary value from one party to the other that uses a device to conduct financial transactions over a wireless network for payment completion. Mobile payment has also been considered as a special form of electronic payment (Schierz, Schilke & Wirtz, 2010). Given the widespread use of mobile devices and the need for convenience and timely payment by users, mobile payment has currently become an important channel for financial transactions (Yang, Lu, Gupta, Cao & Zhang, 2012). Mobile payment generally includes two major types: remote payment and proximity payment. Remote payment connects users to remote payment servers for payment transactions. Examples include mobile banking and mobile payment services. By contrast, proximity payment involves instant payment via mobile phones such as for dining in restaurants, public transportation and small groceries items. The technology used include Radio Frequency Identification (RFID) or Near Field Communications (NFC) (Zhou, 2013).

Consumer Continuance Intention of Mobile Payment Usage

Fishbein and Ajzen (1975) defined intention as subjective willingness to perform an action. Subsequently, Ajzen (1985) added the perceptual behavior control factor to the Theory of Planned Behavior (TPB), thereby deriving the concept from the Theory of Rational Behavior. The TPB can thus more accurately predict willingness to use information systems and other

behavioral information. Ajzen (1989) identified intention as a direct precondition for actual behavior: the more willing an individual is to participate in an activity or achieve a goal, the more accurately their behavior can be predicted. Favorable behavioral intention is often associated with customer engagement by service providers who work to motivate customers to leave positive comments, recommend their service to other customers, stay loyal to them (i.e., through repeat purchases), and make more purchases or pay additional fees (Zeithaml, Berry, & Parasuraman, 1996). Nysveen, Pedersen, and Thorbjørnsen (2005b) developed an integrative model to explain customer intention to use mobile services and identified four factors: motivation impact (such as expressiveness, pleasure, ease of use, and usefulness), attitude impact, normative stress, and perceived control. These factors are found to have strong positive effects on customer intention to use mobile services. However, the actual monetary transaction to obtain a mobile device and the satisfaction of using it were not tested together. This study attempted to fill this knowledge gap through a closer examination of the motivation influence on mobile payment usage.

Direct Effect of Consumer Motivation

Lepper, Greene, and Nisbett (1973) made the earliest attempt to explore human motivation and ways to change human behavior. Subsequently, Deci (1975) differentiated motivation into intrinsic and extrinsic motivation. Intrinsic motivation refers to behavior that is personally rewarding, whereas extrinsic motivation refers to behavior to obtain perceived

value or external rewards (Davis, Bagozzi, & Warshaw, 1992). This work borrowed the concepts of intrinsic and extrinsic motivation within the Self Determination Theory (Ryan and Deci, 2017). Intrinsic motivation refers to undertaking activities for natural interest and enjoyment (Deci and Ryan, 2000) as represented by *Perceived Enjoyment* in this work. Extrinsic motivation pertains to participation according to a sense of value i.e., that is worthwhile to use, even if it is not enjoyable (Ryan and Deci, 2020), as represented by *Perceived Usefulness*.

An intrinsic motivation to feel pleasure, fun, and happiness can motivate certain behaviors (Lee *et al*., 2005). Davis *et al*. (1992) suggested that intrinsic pleasure could urge users to adopt related technologies and increase willingness to use technology. Similarly, Venkatesh *et al*. (2002) indicated that new technology users who are driven by intrinsic motivation tend to reduce their perceived difficulty while experiencing greater pleasure. Hence, as an intrinsic motivation, *Perceived Enjoyment* can affect information acceptance behavior (Allama *et al*., 2019; Atkinson & Kydd, 1997; Davis *et al*., 1992; Moon & Kim, 2001; Van der Heijden, 2003; Venkatesh, 2000).

Perceived Usefulness is an extrinsic motivation (Fagan *et al*., 2008; Nysveen & Pedersen, 2005a) that can motivate an individual to perform a task and affect their willingness to use a new technology (Davis, 1989; Davis *et al*., 1992; Lee *et al*., 2005; Li & Wen, 2019). *Perceived Usefulness* has been shown to be a significant predictor of intention to use mobile payments in general and Near Field Communication (NFC) -based mobile payments in particular (Kim *et al*., 2010; Liébana-Cabanillas *et al*., 2017; Liébana-Cabanillas *et al*., 2018). Previous motivation studies provided theoretical evidence that *Perceived Enjoyment* (intrinsic motivation) and *Perceived Usefulness* (extrinsic motivation) of mobile payment are factors that can affect satisfaction and continuous intention. The application of the expectation-disconfirmation model by Oliver (1980) suggested that consumers develop expectations as a

reflection of their intrinsic needs prior to the consumption of a product. When motivations or expectations are realized, consumers achieve satisfaction. For instance, Babin, B. J., Griffin and Babin, L. (1994) revealed that internal reference points such as motivation can influence consumer satisfaction in their study of the effect of motivation in processing consumers' satisfaction reactions. A research on understanding culinary tourist motivation and satisfaction confirmed the hypothesis that motivation is a predictor of satisfaction (Agyeiwaah, Otoo, Suntikul, and Huang, 2019). Obtaining a clear picture of the motivation of fast-food consumers in using mobile payment is vital as it can significantly predict their satisfaction. Hence, the following hypothesis is posited:

H_1: Mobile payment users' motivation has a positive effect on their satisfaction.

The intention to use mobile services is significantly affected by the direct motivational influence of enjoyment and usefulness (Nysveen, et.al., 2015b). Another investigation on the impact of college students' motivation on continuance intention to use English mobile learning systems established that extrinsic motivations had a substantial direct effect on users' continuance intention (Chang, Liang, Yan and Tseng, 2013). In this work, mobile payment consumers are motivated by the benefits of mobile payment in terms of improving transaction performance, saving time, enabling users them to obtain attractive discounts, and enhancing their social activities. This research theorizes that motivations or expectations can also lead to continuance usage.

H_2: Mobile payment users' motivation has a positive effect on continued usage intention.

Direct Effect of Consumer Satisfaction

Consumer satisfaction indicates the degree to which a product or experience matches

expectations and can be regarded as a change in attitude through the consumption experience. More explicitly, satisfaction can be considered a function of expectation: met or exceeded expectations can result in attitude changes and increased willingness to buy (Davras & Caber, 2019; Gerdt *et al*., 2019; Hunt, 1977; Oliver, 1980). Oliver (2010) defined satisfaction as the psychological state in which needs are met. Satisfaction is a psychological outcome of product evaluation, service evaluation, and consumer judgment of whether a product or service matches the consumer's needs.

Satisfaction is understood in terms of the difference between expectations and actual results. If a customer's perception of function is higher than their expectation, then the customer will be satisfied (Namkung & Jang, 2007). As Spreng, MacKenzie, and Olshavsky (1996) pointed out, overall satisfaction can involve satisfaction with the product itself (attribute satisfaction) or with the information provided when selecting products (information satisfaction). When consumer satisfaction depends on the value of a product, companies should use pricing strategies to make their products more competitive. In general, customers compare the prices and value of products when making purchases (Ravald & Grönroos, 1996).

In the marketing literature, consumer satisfaction can be measured as either a general positive attitude or other attributes such as purchase process, decision, functional attributes, aesthetic attributes, psychosocial attributes, service attributes, and environmental attributes (Czeplel and Rosenberg, 1977). Yoon and Uysal (2005) also suggested that satisfaction must be considered in multiple dimensions. The satisfaction constructs manipulated in this study elaborated the mobile payment process attribute which includes perceived security, perceived privacy, and service quality.

Research on consumer satisfaction with e-commerce and mobile devices has generated interesting results. For instance, Eid (2011) found that the factors influencing Saudi customers' e-commerce website service satisfaction were user interface quality, information quality, perceived security, and privacy. Kim, Chung, and Lee (2011) highlighted that perceived security has a crucial influence on customer satisfaction. Moreover, leakage of customer personal information during or after a transaction has a significant impact on customer satisfaction (Berezina, Cobanoglu, Miller, & Kwansa, 2012; Tran, 2020).

In the restaurant context, factors that influence customer satisfaction include perceived service value, service quality, utilitarian value, hedonic value, and service environment (Babin, Lee, Kim, & Griffin, 2005). Wu and Liang (2009) identified other factors affecting customer satisfaction, including interaction with service personnel and other customers, restaurant environment, experience value (including customer experience ROI), service, and escape from reality. Moreover, factors such as the restaurant service environment, service consistency, match between the restaurant theme and food service, appearance, and decor can also shape customer satisfaction and joy (Lin & Mattila, 2010). Thus, customer satisfaction is affected by numerous service and situational factors in different restaurant settings.

This study proposes three consumer digital experience factors affecting fast-food restaurant customers' satisfaction: *Perceived Privacy* (Eid, 2011), *Perceived Security* (Kim *et al*., 2011), and *Perceived Service Quality*, the latter of which includes *Service Content Quality*, *Navigation and Visual Design Quality*, *Management and Customer Service Quality*, and *System Reliability and Connectivity Quality* (Kuo, Wu, & Deng, 2009). A recent study conducted in Malaysia on customer satisfaction with fintech mobile payment services used the three factors of security, privacy, and service quality among others such as ease of use, information presentation, and convenience (Alwi, Alpandi, Salleh, & Najihah, 2019).

Consumers using mobile payment perceived the importance of the security aspect and the safety of the monetary transaction as well as service quality. Service quality factors are further categorized as *Navigation and Visual Design Quality* and can enhance mobile payment experiences. *Management and Customer Service* and *System Reliability and Connection Quality* are the human and technical aspects of the services. *Service Content Quality* involve completeness and being up to date. When consumers experience satisfaction, they are more likely to continue to use mobile payment. According to previous literature, consumers' usage intentions are directly influenced by satisfaction (Chen *et al*., 2012, Lin *et al*., 2008). Thus, the following hypothesis is proposed:

H_3: Mobile payment users' satisfaction has a positive effect on continuance intention.

On the basis of a comprehensive review of previous studies, this study developed the research framework shown in Figure 1.

Please insert Figure 1 here

Methodology

This research probed the factors that affect the motivation, satisfaction, and continuance intention of mobile payment users and the relationships between them in the fast-food restaurant industry. The survey instrument items were adapted from previous studies: 5 items for *Perceived Usefulness* and 4 items for *Perceived Enjoyment* were adapted from Davis (1989), Moon and Kim (2001), and Venkatesh (2000); 4 items for *Perceived Security* and 4 items for *Perceived Privacy* were adapted from Kim *et al.* (2011) and Eid (2011); 16 items for *Perceived Service Quality* were adapted from Kuo *et al.* (2009); and 3 items for *Continuance Intention* were adapted from Kuo *et al.* (2009). The measurement items were tested in three rounds of focus group interviews with mobile payment users in mainland China. The interviews involved

18 participants who were recorded with their consent. All selected participants had at least three years' experience using mobile payment to purchase meals. The results of the focus group discussions confirm the validity of the questionnaire items on motivation, satisfaction, and continuance intention regarding semantic expression in the Chinese language and fast-food consumers' actual usage experience of mobile payment. As a new item, the provision of discounts by restaurants to incentivize consumers to use mobile payment was added to the motivation dimension.

The survey questionnaire includes four sections. Section One consists of the Motivation dimension which comprise two factors: *Perceived Usefulness* and *Perceived Enjoyment*. Section Two explores the Satisfaction dimension which consists of three factors: *Perceived Security, Perceived Privacy*, and *Service Quality*. Section Three consists of the continued usage intention dimension. Section 4 presents the respondents' demographic information.

The actual survey was conducted in Shenzhen, mainland China because of the prosperous economic environment and the popularity of fast-food restaurants in the city. Shenzhen is also a pioneer city in the development of science and technology and in the application of new technologies. Mobile payment technology was promoted and adopted much earlier in Shenzhen than in other Chinese cities, and the city is expected to include mobile payment users. A pilot study was conducted using a convenience sample of 80 participants to assess the reliability of the measurements and ensure that the wording of the questionnaire was clear. The reliability analysis confirmed that the Cronbach's alpha coefficients for all attributes supported internal consistency and were acceptable, as they ranged from 0.838 to 0.947.

The main study was conducted in Shenzhen prior to the occurrence of the COVID-19 pandemic. All participants were fast-food mobile payment users and have completed the questionnaires at various fast-food restaurants, such as McDonalds, KFC, and Kungfy. A total of 565 survey questionnaires were completed, of which 18 were discarded given missing information. The 547 valid questionnaires were analyzed using SPSS 21.0 and Amos 22.0.

Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were used to test the relationships between the observed and latent variables, thereby enabling the conceptualization of the latent variable structure (Byrne, 2001). Data were also analyzed using structural equation modeling to reveal the unobserved latent variables in the relations, account for the measurement effort in the estimation process, estimate multiple and interrelated relationships, and assess the model fit (Hair, Anderson, Tatham, & Black, 1995; Hair, Anderson, Tatham, & Black, 1998).

Findings and Discussions

Respondent Profiles

Over half of the 547 respondents were male (52.1%). Most participants were aged 21–30 (62.5%), 30.4% were above 30 years old, and only 7.1% were aged below 20. Most participants were university- or college-educated (62.5%), but many others completed graduate school (12.1%) or graduated from vocational schools, senior high schools, or secondary schools or below (25.7%). About half of the respondents earned RMB 2000–6000/month (51.4%), 19.6% earned less than RMB 2000/month, and 29% earned more than RMB 6000/month.

Findings of Structural Equation Modeling

The structural equation modeling findings indicated that all constructs in the proposed model achieved acceptable levels of reliability, as the Cronbach's alpha coefficients all exceeded 0.70 (Fornell & Larcher, 1981). The corresponding values as shown in Table 1 are as follows: *Perceived Usefulness* (0.901), *Perceived Enjoyment* (0.901), *Perceived Security* (0.838), *Perceived Privacy* (0.879), *Service Content Quality* (0.888), *Navigation and Visual Design Quality* (0.878), *Management and Customer Service Quality* (0.902), *System Reliability and Connection Quality* (0.876), and *Continuance Intention* (0.947). The standardized factor loadings of items ranged from 0.687 to 0.847 and were all statistically significant ($p < 0.001$). The average variance extracted (AVE) of the latent constructs ranged from 0.568 to 0.857, and all exceeded 0.50.

According to the model evaluation criteria discussed, $X^2/df = 1.86$, RMSEA = 0.040, GFI = 0.937, AGFI = 0.922, NFI = 0.973, CFI = 0.973, and the overall fit of the proposed model was acceptable (Table 1). Thus, the model is appropriate for testing the hypothesized paths.

Please insert Table 1 here

Please insert Table 2 here

The results provide strong support for the proposed structural model and the hypothesized relationships. *Motivation* was found to have a positive, direct effect on *Satisfaction*. Furthermore, *Motivation* and *Satisfaction* were found to have positive, direct effects respectively on *Continuance Intention*. Thus, the three hypotheses were supported. The

predicted relationships, standardized path loadings, and hypothesis test outcomes are shown in Table 2. All the structural model evaluation indices and standardized path coefficients between the constructs of motivation, satisfaction, and service quality are displayed in Figure 2.

Please insert Figure 2 here

Mobile Payment Users' Motivation and Relationship with Satisfaction

The study results showed that mobile payment users' motivation had a positive impact on satisfaction. The stronger the users' motivation, the higher their satisfaction with mobile payment. *Perceived Enjoyment* and *Perceived Usefulness* influenced users' satisfaction. An intrinsic motivation, *Perceived Enjoyment*, contributed more to predict satisfaction than *Perceived Usefulness*. The mobile payment process can help keep consumers happy and satisfied, and that intrinsic motivation influences satisfaction in terms of *Perceived Service Quality*, *Perceived Security*, and *Perceived Privacy*. This finding is consistent with those of previous studies by Nusair and Kandampully (2008) and Safa and Solms (2016). Gloria and Achyar (2018) confirmed that satisfaction is strongly affected by *Perceived Enjoyment*, and they further suggested that *Perceived Enjoyment* could be increased by enhancing user experience and offering additional features.

Mobile Payment Users' Motivation and the Relationship with Continuance Intention

The findings confirmed that the motivation factors of *Perceived Enjoyment* and *Perceived Usefulness* with *Perceived Enjoyment* contributed more to the prediction of continuance intention. The respondents' enjoyable experiences also influenced them to recommend mobile payment to their family and friends. This result is consistent with the

findings of Sørebø, Halvari, Gulli, and Kristiansen (2009) that motivation to use mobile payment is more likely to affect continuance intention. Moreover, the positive influence of *Perceived Usefulness* on continuance intention is consistent with the arguments of Li and Fang (2019) and Bhattacherjee (2001). The results echo those of Cobanoglu *et al*. (2015) who confirmed that mobile payment usage in the restaurant industry is safe, easy, and effective.

Mobile Payment Users' Satisfaction and the Relationship with Continuance Intention

The findings confirmed the mobile payment satisfaction factors of *Perceived Security*, *Perceived Privacy*, and *Perceived Service quality*. Of the three factors, *Perceived Service Quality* contributed most to satisfaction, followed by *Perceived Security* and *Perceived Privacy*. Satisfaction has a positive impact on users' continuance intention to use mobile payment for future meal purchases in fast-food restaurants. Greater user satisfaction with service quality, security, and privacy will lead to greater continuance intention.

Perceived Service Quality was subdivided into *Service Content Quality*, *Navigation and Visual Design Quality*, *Management and Customer Service Quality*, and *System Reliability and Connection Quality*. Of the four sub-factors, *Navigation and Visual Design Quality* contributed the most to predicting satisfaction. Mobile payment users had higher expectations of *Navigation and Visual Design Quality* in terms of ease of use, visible and noticeable value-added services, user-friendly layouts for convenient browsing, and clear information displayed on the homepage. Meeting the expectations of *Navigation and Visual Design Quality* can thus significantly increase satisfaction. *Service Content Quality* had the lowest mean score among the *Perceived Service Quality* factors, but it contributes to predicting user satisfaction. Consumers want more up-to-date and detailed service content from mobile payment providers and fast-food restaurants to help them manage their spending better. Aspects of *Perceived*

Service Quality such as *Management and Customer Service* and *System Reliability and Connection Quality* are important to service recovery: should any problem occur, the provision of these services is essential to regaining consumer satisfaction and trust.

The mobile payment users in this study had the least satisfaction with *Perceived Privacy*, particularly regarding the risk of the leak of personal information and did not feel safe when sending personal information to mobile payment companies, an outcome which is in line with the findings of Kuo *et al*. (2009). The challenges of security and privacy (Ekanayake, Halgamuge, & Syed, 2018; Oliveira *et al*., 2016; Singh, Halgamuge, Ekici, & Jayasekara, 2018) are among the most significant barriers to the adoption of mobile payment applications. The result of this study suggested that this important issue should be addressed by mobile payment providers to regain or to build confidence on mobile payments for continued usage.

Finally, the effects of motivation and satisfaction on continuance intention suggested that motivation has a greater positive effect than satisfaction. When the fast-food consumer respondents were motivated by *Perceived Enjoyment*, they used mobile payment more frequently than cash, and their satisfaction and continuance intention were higher. The understanding of motivation influence of *Perceived Enjoyment* can facilitate the design of effective mobile payment services that can meet consumers' expectations and preferences, thereby producing happier customers and more sales. Satisfaction has a positive influence on *Continuance Intention*, and the *Service Quality* factor contributes to *Satisfaction* and can

influence *Continuance Intention*. Improved *Navigation and Visual Design Quality* and *Service Quality Content* can lead to higher service quality, consumer satisfaction, and continuance intention. In summary, *Perceived Enjoyment* and *Perceived Service Quality* can predict the *Continuance Intention* of mobile payment usage.

Conclusions and Implications

This study examined mobile payment users' motivation, satisfaction, and continuance intention in the context of fast-food restaurants in China. An integrated framework was adopted to include motivation, satisfaction, and continued usage intention for mobile payment. The findings confirmed the relationships between motivation, satisfaction, and continuance intention. The results contribute to both the academic and practical fields.

This study theoretically contributes to the consumer behavior and mobile payment literature in several ways. First, this work examines the two types of motivations depicted in the Self Determination Theory, namely, the intrinsic and extrinsic motivations of Perceived Enjoyment and Perceived Usefulness. In doing so, this article extends Self Determination Theory to determine the effectiveness of motivation on satisfaction and continuance intention of mobile payment in the context of fast-food restaurants. This investigation confirms the importance of *Perceived Enjoyment*, an intrinsic motivation in the fast-food restaurant users' experiences. Second, this research adds to the growing body of literature on mobile payment for the fast-food restaurants, a feature which is limited in extant restaurant research. This study extends this stream of literature by examining the important factors that can predict continuance intention. The findings herein strongly support the notion that motivation and satisfaction are critical for fast-food restaurants to influence consumers to use mobile payment.

The following practical recommendations are drawn from the study results for the three

fast-food restaurant mobile payment stakeholders of mobile payment service providers, system designers, and restaurant owners.

First, mobile payment providers should seek to maintain their competitiveness by improving their payment process, such as by providing instant small discounts or special promotions as exemplified by flash sales to motivate consumers to act quickly.

Second, *Perceived Enjoyment* has a greater impact on continuance intention in the fast-food business. Thus, mobile payment service providers should enhance their web page design to attract targeted consumers to use mobile payment by launching fun activities, such as opportunities to obtain rewards or discounts by playing games. Moreover, the language and pictures on the web pages should link to current offers so that customers experience up-to-date and vivid pages.

Third, mobile payment service providers should clearly present instructions and operational information and simplify the operational process. Fast-food restaurants' payment instructions and icon displays should be placed in a prominent area on the web page for customer convenience.

Fourth, the two satisfaction factors of *Perceived Privacy* and *Perceived Security* were ranked lower than *Perceived Service Quality* by the fast-food mobile payment users in this study. It can be assumed from this result that fast-food mobile payment users are concerned about the security and privacy of their personal information when using mobile payment for transactions. Therefore, mobile payment providers should focus on managing expectations of perceived privacy and perceived security to meet fast-food mobile payment users' needs. The more satisfaction mobile payment users perceive in terms of service quality, the greater their continued usage intention will be.

Finally, this study provides insight into the relationships between mobile payment users'

motivation, satisfaction, and continued usage intention in the fast-food restaurant industry. Previous studies have investigated technology-related motivation and continuance intention. The relationships between constructs such as satisfaction and motivation and their effect on usage intention in the fast-food restaurant industry should also be investigated. The COVID-19 pandemic is changing hospitality and restaurant consumer behavior. The use of cash carries an increased risk of transmission of the virus, and mobile payment, which is safer and more hygienic, can protect consumer health and safety. Will the motivation, satisfaction, and continuance intention of mobile payment usage increase over time as users gain more experience? This study provides a benchmark for fast-food owners and mobile providers to rethink their operating and marketing strategies.

Limitations and Further Research

This research was conducted in fast-food restaurants in mainland China, a feature which could limit the generalizability of the results to the entire restaurant and hospitality industry. Future studies should adopt the framework of this work to other cities or regions in the restaurant and hospitality industries to draw more comprehensive conclusions on the development and usage of mobile payment. In addition, exploring the consumer behavior of other food and beverage businesses such as coffee houses, casual dining or fine dining restaurants could be beneficial. Hence, future research should compare various restaurants with demographic differences to identify the potential variations in the usage of mobile payment by their customers. This research explored mobile payment in general without consideration of the payment platform. Future studies should investigate the consumer behavior associated with the use of a particular platform. Finally, a new model of motivation, satisfaction, and continuance intention can be developed by using different motivation factors such as perceived security, perceived privacy, and service quality or for testing satisfaction as a mediator to generate further empirical findings and new insights.

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