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The Influence of Online Food Delivery Service Quality on Customer Satisfaction and Customer Loyalty: The Role of Personal Innovativeness

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Abstract

The online food delivery industry has emerged as a new channel of food delivery and marketing in order to capture a bigger share and sale in the food industry. This new type of business delivery has become very popular, especially among young, busy and working people. In addition, this business has become more competitive due to the increasingly new business entries and users' expectation resulted from the anxiety of online food ordering and time convenience, but not at the expense of providing quality products and services. Therefore, it is very crucial that online service providers understand the nature and requirements as well as the pertinent aspects of the online service industry that are considered important to the customers in this emerging market. This study tries to explore and gauge information to guide the online service providers regarding the requirements and attributes of this new service delivery system. Using adopted questionnaire from Mobile Service Quality (M-S-QUAL), this study aims to investigate the relationships between customers perceived service quality of online food delivery (OFD) and its influence on customer satisfaction and customer loyalty, moderated by personal innovativeness. The data are collected from the customers or users of any online food delivery service and will be analyzed using correlations and Hierarchical Moderated Regression Analysis.

Keywords: Online Food Delivery (OFD); Mobile Service Quality (M-S-QUAL); Customer Satisfaction; Customer Loyalty; Personal Innovativeness.

1 Introduction

To date, a smartphone is one of the important media gadget for young Malaysian. In 2017, about 97.7 percent youngsters aged 15 years and above have been using smartphones in accommodating their daily activities. More specifically, it has also changed how they purchase products or services to fulfill their needs and wants. For instance, this trend has promoted Online Food Delivery (OFD) Service in Food and Beverage (F&B) Industry. The OFD industry itself has emerged as a new wave in the food and beverage industry. This new marketing channel intends to increase sales and grab bigger shares of F&B industry, either through partnerships with food delivery companies (e.g., Foodpanda, Grabfood, Running Man Delivery, etc., or restaurant delivery service, e.g., McDonalds, KFC, Domino's Pizza, Pizza Hut delivery services).

Although the OFD service industry seems to be hugely promising, the nature of this market is poorly understood (10). However, delivering superior service to increase customer

satisfaction and loyalty, is crucial in any service industry to gain competitive advantage (7, 11). It infers that firms must obtain the positive response from the user first before customer loyalty is created and the competitive advantage is achieved. Therefore, OFD service providers must fully understand how the customer perceived this online service and such understanding requires measuring the OFD service quality (23). Thus, assessing perceived service quality of the customer is very crucial for the service company in its effort to achieve customer loyalty in order to sustain and survive in this very competitive market. This is the main issue that this research tries to investigate and hopes to contribute to better understandings of OFD service quality.

Literature has provided considerable evidences on Mobile Service Quality (M-S-QUAL), yet there is a lack of scale utilization and exploration (21). More specifically, in the OFD industry, previous studies mostly investigate the customer attitude toward the service and few addressed the customers' response behaviorally. In addition, several studies investigate

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the external factors in moderating the customer reaction of perceived service (9). However, the presence of internal characteristics, such as personal innovativeness is still limited. So far, research examining the influence of personal innovativeness that potentially moderates the customers post-adoption of M-commerce is limited or not extensive (5, 32). Therefore, this study tries to address this issue and fulfill the gap in the literature by investigating the influence of perceived OFD service quality on customer satisfaction and customer loyalty and the role of personal innovativeness in moderating the customer satisfaction and customer loyalty linkage.

In this regard, this study adopts the quantitative and cross-sectional approach using M-S-QUAL (23) as the instrument to capture the perceived OFD service quality. This paper firstly proceeds with an introduction, the objectives of the study and the test conducted to obtain the reliable measures of the variables; Secondly, it continues with a brief literature review; Thirdly, it describes the conceptual framework consisting of the conceptual model and hypothesis related to Online food delivery (OFD) service quality, customer satisfaction, customer loyalty, personal innovativeness based on the review of the current evidence of these relationships. Fourthly, it discusses the methodology used. Fifth, it highlights the results of the analysis using correlation and Moderated Regression analyses. Finally, the results are then discussed and implications highlighted.

2 Literature Review

2.1 Mobile Service Quality

As this study aims to examine the relationship of perceived service quality of OFD grounded from M-S-QUAL on customer satisfaction and loyalty, it is important to understand how the mobile service quality evolved in the literature. Hence, the following paragraph starts with the initial service quality model, followed by the evolving of the electronic service quality literature and finally mobile service quality literature in relation to this study setting.

Service quality has been substantially studied in the literature (6, 12, 15, 17, 25) but SERVQUAL of Parasuraman is the most influential seminal work which developed the instrument of service quality dimensions, namely Tangibles, Reliability, Responsiveness, Assurance, and Empathy (40). Basically, service quality is the form of customer perception during the purchasing process and also when the product/service is being delivered and recognized as the gap model which is the comparison between the customer's perception of perceived service with their expectation (39). However, the evaluation of perceived service quality varies according to industries (14, 33). Thus, the existing scale of service quality may not be generalized in electronic service quality setting.

The wide advancement of technology and wired communication devices have thriven the service quality literature to adopt this advancement (16, 43). The transformation of the way service is being delivered from offline to online also lead this trend to the development an Electronic Service Quality (E-S-QUAL) to gauge the service quality delivered from websites (37,38). Initial E-S-QUAL

comprises of 22 items in four dimensions: efficiency, fulfillment, system availability, and privacy. Additionally, in the same study, to measure the recovery aspect of service quality the authors also developed e-recovery scale (E-RecS-QUAL) which consist of 11 items in three dimensions: Responsiveness, Compensation, and Contact (38). Even though, m-commerce is often portrayed as the continuation of e-commerce the existing electronic service quality may not be proper. It leads to the need of specific measurement for mobile commerce service quality as it has its own characteristics (33).

A number of scholars have formulated and suggested various factors to operationalize mobile service quality. According to Lu et al., m-service quality perceived is the form of interaction, environment, and outcome qualities (32,33). These are evaluated based on sub-dimensions of each dimension, namely attitude, expertise, problem-solving and information for interaction quality, equipment, design, and situation for environmental quality, and punctuality, tangibles, and valence for outcome quality. Lin state dimensions to assess mobile service quality differently (30,31). They suggest using functionality, content, customer service and interface design. Moreover, to measure mobile service quality that has physical and virtual product Huang et al., introduce the specific measurement for mobile quality service, namely M-S-QUAL, which consists of five dimensions: contact, responsiveness, fulfillment, privacy and efficiency of virtual product and four dimensions for physical product: contact, responsiveness, fulfillment and efficiency. In the context of OFD, this present study adopts a mobile service quality scale (M-S-QUAL) developed by Huang et al., that has been widely used to operationalize service quality for virtual and physical products (23).

2.2 Customer Satisfaction

Previous studies indicate that firms with high competitive advantage must capture the customers' positive response first before reaching competitiveness (7, 11). This positive response is characterized as a satisfied customer with the service perceived after experiencing the service quality. In fact, in mobile commerce, this attitudinal response is important for the company to fully understand the quality of their service (27). So that, firms need to provide superior service in order to achieve customer satisfaction. It explains that service quality has a strong relationship with service quality (36). This link is supported by Expectation Disconfirmation Theory (EDT) that explains the post-purchase cognitive response of service.

H1: Mobile service quality positively affects customer satisfaction

To improve the market share, mobile service business needs to obtain a competitive strategy that caters to customers' needs in order to achieve long-term success (29, 43). This means the customer becomes loyal to the service. Unlike satisfaction, customer loyalty can be categorized in behavioral and attitudinal (11, 18). Furthermore, in technology-based service perceived service quality has a positive impact on customer loyalty (24). Therefore, there is a link between service quality and customer loyalty and we hypothesized:

H2: Mobile service quality positively affects customer loyalty

By adopting m-technology in the business, firms must first consider the factors that influence customer satisfaction with the service as these factors are the key elements to enhance the loyalty (27). However, the nature of the relationship between satisfaction and loyalty is being debated. Erjavec argues that the drivers of satisfaction and customer loyalty are observed to be diverse according to industries (19). Deng in his study on mobile instant messages confirms that customer satisfaction directly boosts customer loyalty (17). Likewise, in the mobile banking sector, to attain customer and company long-term relationship, the customer must be satisfied first (4). This means, there is a positive relationship between customer satisfaction and customer loyalty. Therefore, we hypothesized:

H3: customer satisfaction positively related to customer loyalty

As stated before, service quality and customer satisfaction have been identified as one of the major antecedents of customer loyalty. However, the customer perception on service quality initially affects customer satisfaction first. This simultaneous relationship between perceived service quality and customer satisfaction and its link toward customer loyalty has been attracting scholar's attention (13, 34). Whilst some scholars studying the direct relationship between service quality and customer loyalty, some examined the mediating role of customer satisfaction over this relationship (8, 25). Technology Acceptance Model (TAM) as the basic theory of such adoption, explain the relationship of perceived usefulness and perceived ease of use perceived from service quality may lead to the attitudinal response, i.e: customer satisfaction, and intention to repurchase the service, i.e: customer loyalty. Therefore, we hypothesized:

H4: customer loyalty mediates the relationship between service quality and customer loyalty

2.3 Personal Innovativeness

Personal innovativeness is defined as the enthusiasm of an individual to try any new technology and an individual's tendency to accept a new innovation earlier than others (1). Personal innovativeness is found as internal social motivation that determines the customer continuance intention in the mobile commerce post-adoption behaviors (29). Since customer satisfaction is a strong determinant of loyalty, there is a potential impact of personal innovativeness to influence the customers' reaction toward this post-adoption of mobile-commerce. Some scholars have employed personal innovativeness as a moderator. For instance, Jeong, Yoo, & Heo demonstrated that personal innovativeness moderates the relationship between perceived need and purchase intention in mobile RFID service and found the negative effect of personal innovativeness (28). Another study by Jang & Lee also discovered the personal innovativeness as strong moderator in the association between reputation, trust, and entertainment

and user attitudes in the context of Location Based Service (LBS) (26).

Although Walsh, Evanschitzky, & Wunderlich suggest critical incidents and income as moderators to be pertinent in the satisfaction and loyalty relationship, however, there is a room for other moderators to be included in the link (41). In fact, Homburg & Giering argued that personal characteristics, specifically variety seeking, age, and income, are strongly moderate this relationship (22). In the field of mobile commerce, we assumed that as features and applications of mobile technology become highly developed and become more sophisticated, users' internal motivation (i.e: personal innovativeness) could potentially become a key element in mobile-related service usage (5). This means the relationship between customer satisfaction and customer loyalty and between perceived service quality and customer loyalty are assumed to be strengthened or weakened by personal innovativeness. Thus, we hypothesized:

H2a: Personal innovativeness moderates the relationship between customer satisfaction and customer loyalty

H3a: Personal innovativeness moderates the relationship between service quality and customer loyalty

3 Methodology

In the methodology section, we presented the questionnaire design and measurement, the sampling method of the study and data collection and also the profile of the respondents.

3.1 Questionnaire Design and Measurement

The questionnaire designed comprised of three sections, namely Mobile Service Quality (Contact, Responsiveness, Efficiency, Privacy, and Fulfillment), Customer Response (Personal Innovativeness, Customer Satisfaction, and Customer Loyalty) and Demographic Information. Demographic information captured respondents' profile such as Age, Gender, Education Level, and Monthly Income. We included a screening question at the beginning of the survey questionnaire to filter and ensure that respondents included in the study were those that met the pre-determined criteria of the target population which confined the respondents to those who have conducted the Online Food Delivery service only.

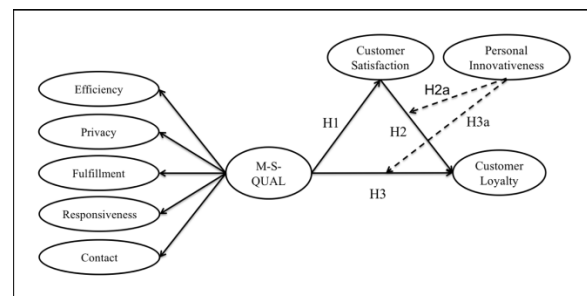


Figure 1: Research Model

The items used are mostly adapted from prominent studies. A reflective model of Five dimensions was used by the present

to operationalized service quality (23). Online Food Delivery (OFD) is as part of virtual mobile service, therefore, we used M-S-QUAL instrument to operationalize the OFDs' mobile service quality. Three items were used to measure Personal Innovativeness (1), three items for Customer Satisfaction (35), and four items for customer attitudinal and behavioral loyalty (18). Respondent's responses were measured using Likert Scale, ranging from 1 (strongly disagree) to 7 (strongly agree).

3.2 Sample and Data Analysis

The present study employed purposive random sampling since the sample frame is hard to discover. 158 usable responses from OFDs' customers in Malaysia were received. As shown in Table 1, slightly more than half of the respondents of this study were female at 56.96 percent. Majority of the respondents were between 25-35 years of age (47.47%) and mostly had managed to obtain a Bachelor or Master degree. Majority of the respondents earned a monthly income of RM 5000 and less.

Table 1: Sample Profile

Characteristics	Frequency	Percentage
<u>Gender</u>		
Male	68	43.04
Female	90	56.96
	158	100.00
<u>Age</u>		
<25	57	36.08
25 - 35	75	47.47
36 - 45	26	16.46
46 - 55	0	0
56 >	0	0
	158	100.00
<u>Level of Education</u>		
High School	10	6.33
Undergraduate	72	45.57
Graduate	76	48.10
	158	100.00
<u>Monthly Income</u>		
< 1000	38	24.05
1001 - 3000	51	32.28
3001 - 5000	47	29.75
5001 - 10000	20	12.66
> 10001	2	1.27
	158	100.00

Hierarchical Moderated Regression Analysis was used to test the hypotheses regarding mediation and moderation. Regression analysis was used to test the mediation effect of customer satisfaction in the causal path between service quality and customer loyalty, while the moderating effect of personal innovativeness was analyzed using moderated regression analysis method (42). As suggested by Hair et al., (2014), before testing the hypotheses, we assessed the variables for any multicollinearity problems. Multicollinearity test was conducted to check whether two or more variables in the regression model are highly correlated by examining the Variance Inflation Factor (VIF) threshold values. Table 2 demonstrated that the VIF values were less than 10. The result suggested that the multicollinearity problem was not severe

and therefore, the study proceeded with the correlation and regression analyses.

4 Results and Findings

4.1 Correlation Analysis

In this study, the original measures of the constructs were multi-dimensional. Therefore, Cronbach Alpha reliability values were determined for each construct to ensure the consistencies of the scales. The values of the Cronbach alpha of the constructs were found to be at acceptable levels, suggesting the existence of consistency of the measurements since all the alpha values were above 0.70 (Table 2). The service quality variables showed high associations among them. Therefore, before conducting correlation and regression analyses, the constructs were checked for any possible multicollinearity problems. The collinearity statistics suggested that the associations between scales within each construct would not create severe multicollinearity problems since all the VIF values were below the threshold value of 10. As reveals in Table 3, the correlation analysis indicated that all service quality variables had positive and significant correlation with customer satisfaction and loyalty except personal innovativeness. Satisfaction exhibited high correlations with efficiency (.557), fulfillment (.460) and responsiveness (.402). On the other hand, loyalty demonstrated high correlations with fulfillment (.413), responsiveness (.427), contact (.432), and satisfaction (.605).

Table 2: Reliability and Multicollinearity Analysis

Variable	Cronbach Alpha	Collinearity Statistics	
		Tolerance	VIF
Efficiency (EFFI)	.781	.569	1.756
Privacy (PRIV)	.796	.694	1.441
Fulfillment (FULL)	.779	.630	1.587
Responsiveness (RESP)	.766	.473	2.115
Contact (CONT)	.775	.522	1.916
Satisfaction (SAT)	.775	.614	1.630
Personal Innovativeness (PI)	.778	.871	1.060

Dependent Variable: Loyalty (LOY)

4.2 Mediated-Based Regression Analyses

The Mediated-Based Regression analyses were conducted to test the proposed hypotheses. In this study, we tested H1, H2, and H3 using simple linear regression analyses. The mediated regression analyses were also performed to investigate the mediating role (2). Mediation analysis was conducted to test the mediating role of customer satisfaction in the relationship between service quality and customer loyalty association (H4). In the first step (first row of Table 4), SQ (independent variable) exhibited positive and significant impact (beta = 0.505) on CL (dependent variable). In the second step (row 2), SQ demonstrated a positive and significant contribution (beta = 0.528) towards CS. The third step suggested that CS had a positive and significant association (beta = 0.258) with CL. The result of the last step in Table 4 indicated that when CS (mediator) was included in the final step (row 4), the result showed that SQ was still significant (beta = 0.468, sig. 0.000).

Table 3: Descriptive Analysis and Correlation

		Mean	SD	1	2	3	4	5	6	7	8
1	Efficiency	5.65	.764								
2	Privacy	5.22	.928	.368**							
3	Fulfillment	5.35	.952	.431**	.408**						
4	Responsiveness	5.28	.945	.515**	.436**	.489**					
5	Contact	5.05	.989	.377**	.480**	.434**	.646**				
6	Satisfaction	5.34	.895	.557**	.259**	.460**	.402**	.347**			
7	Loyalty	5.41	.875	.374**	.256**	.413**	.427**	.432**	.605**		
8	Personal Innovativeness	63.03	.488	.017	-.079	-.069	-.037	-.085	.077	-.086	

** Correlation is significant at the 0.01 level (2-tailed)

In addition, after including customer satisfaction in the relationship between service quality and customer loyalty, it resulted in the decrease of the beta values of SQ from 0.505 to 0.468. The result indicated that the mediating role of CS was partial. The results were summarized in Table 4 highlighting the positive relationships between SQ-CL, SQ-CS, CS-CL and SQ-CS-CL links. Thus, H1, H2, H3 and H4 were accepted.

Table 4: Result of the Mediated-Based Regression Analyses

Path	Unstandardized Coefficient		Standardized Coefficient		T	Sig.
	Beta	Standard Error	Beta (Std)			
SQ-CL	.639	.087	.505	7.310	.000	
SQ-CS	.684	.088	.528	7.768	.000	
CS-CL	.326	.092	.258	3.558	.000	
SQ-CS-CL	.458	.071	.468	6.466	.000	

Dependent Variable = Customer loyalty (CL)

4.3 Moderated Regression Analysis

In testing the moderation effect using the moderated regression analysis, we used the overall values (mean) for all main constructs and later the standardized Z-scores of all constructs were predetermined (3). Table 5 summarized the steps performed in the moderated regression analyses. H2a proposed that personal innovativeness had a moderating role on customer satisfaction-customer loyalty link. The result of Model 3 showed that personal innovativeness negatively moderated the relationship between customer satisfaction and loyalty ($\beta = -0.173$; $p < 0.05$). The result implied that when personal innovativeness was at a higher level, customer satisfaction had a lower effect on customer loyalty. However, the significant result suggested that personal innovativeness moderated the customer satisfaction-customer loyalty link. Therefore, Hypothesis H2a was accepted. On the other hand, H3a proposed the moderating effect of personal innovativeness on service quality-customer loyalty relationship. In model 4, the results show that $\beta = 0.080$ which indicates that service quality and customer loyalty was not significantly moderated by personal innovativeness. Therefore, Hypothesis H3a was rejected.

5 Conclusion and Discussion

The main purpose of this study is to investigate the relationships between customers perceived service quality of online food delivery service in Malaysia on customer satisfaction and customer loyalty. In addition, the study also examines the mediating role of customer satisfaction and the moderating effect of personal innovativeness on that relationship. We propose that high perceived service quality will enhance customer loyalty as well as the customer satisfaction in this relationship. This study provides evidence to support the hypothesis regarding mediation proposed and concludes that perceived service quality leads to loyalty via customer satisfaction (8). Thus, online food delivery providers must firstly attain customer satisfaction before they have the privilege of securing customer loyalty. Nonetheless, the nature of the mediation role of customer satisfaction in the OFD context is found to be partial. In addition, the result of the moderated regression analyses suggests that personal innovativeness moderates the customer satisfaction-customer loyalty link. However, the result fails to support that personal innovativeness has a moderation role on the service quality and customer loyalty linkage.

Table 5: Moderated Regression Analyses

Predictor Variable	Model 1	Model 2	Model 3	Model 4
Service Quality	.258*	.241*	.186*	.237*
Customer Satisfaction	.468*	.485*	.474*	.458*
Personal Innovativeness		-.105	-.112	-.103
Customer Satisfaction x Personal Innovativeness			.173*	
Service Quality x Personal Innovativeness				.080
R ²	.413	.424	.450	.430
R ² (adjusted)	.406	.413	.436	.415
F	54.611	37.823	31.355	28.824

Dependent variable = CL. *Significance at 0.05 level, **Significant at 0.1 level

Many researchers agree with the notion that service quality has positive influence on customer satisfaction and customer loyalty and therefore can be considered as a very robust tool to enhance customer performances which ultimately leads to increased sales. In the context of online food delivery, it implies that when customer perceived service quality as high, it will enhance customer loyalty (25). Moreover, service quality also is found to be positively associated with customer satisfaction. This finding suggests that managers must understand their service elements and provide what the customers need in enhancing their loyalty.

The findings of the study also suggest that the service quality dimensions are positively related to customer loyalty. Among other dimensions, responsiveness is found to have the highest correlation with customer loyalty. It indicates that in order for the customer to become loyal, OFD firm must pay attention to deliver the service responsively. For example, if the service fails to deliver the food ordered, the representative of the company must rectify the problem by either providing a good explanation or replacement or compensation whenever the service failure happened. This is very important since an unsatisfied customer may tell others of his or her bad experiences.

The result from the moderated regression analysis also provides interesting results. We discover that personal innovativeness has a negative moderating effect on the relationship between customer satisfaction and customer loyalty. This means that a customer with high personal innovativeness will decrease the significance of customer satisfaction-loyalty relationship. The majority of OFD users are young people who are mostly engaged with activities involving the usage of technological and innovative tools. They have no problem getting the information and switching to another OFD provider if they feel their needs are not attended to. The switching behavior usually happens when other OFD providers also offering the same services but with cheaper prices. Thus, a company must continuously improve their OFD service by considering consumers' personal innovativeness. By understanding their nature and characteristics, it will lead them to form a new market segment.

As the limitation of this study, firstly, our sample of 158 online food delivery service is somewhat small. Future studies on service quality, especially online service quality, can perform studies by collecting larger sample size and adopting different improved measures of service quality in order to adapt to the existing trend. Secondly, in relation to the mediating role, future study should include other potential consequences besides customer satisfaction to be investigated in service quality and loyalty relationship. Finally, since personal innovativeness is one of many other personal internal characteristics, other possible moderators, e.g., self-efficacy, self-consciousness, interpersonal interactions, novelty-seeking etc, can be considered for future investigation.

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