

DETERMINANTS OF CUSTOMER SATISFACTION VIA ONLINE FOOD DELIVERY APPLICATIONS

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Abstract

Using mobile phone food delivery applications is a new approach to dining and a boon to the restaurant business. The number of adopters of food delivery applications has been increasing significantly in step with demand for the new technology. This research identifies important determinants for success in the online food ordering and delivery scene, namely menu variety, food quality, delivery efficiency, and the overall perceived value of the application to the user. The study employed a survey questionnaire to obtain quantitative data and a tool designed to analyze and interpret the results of the study. Data were collected from experienced users of major food delivery applications. A utilized sample of 411 respondents was included in the study. The findings indicated that perceived value had the greatest effect on restaurant satisfaction, followed by the efficiency of the delivery service, menu variety, and food quality, respectively. Based on these results, the study provides practical recommendations for increasing customer loyalty and motivation to continue using an application. Directions for future research and limitations are also discussed.

Keywords: food delivery application, restaurant satisfaction, food quality, delivery quality, menu variety

1. INTRODUCTION

There are a great variety of restaurants in Thailand, with many struggling to differentiate themselves

from competitors; to increase their appeal and attract customers, restaurants may provide various enticements including offering online food delivery, introducing new menu

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items, and expanding restaurant franchises (Gupta, 2019; Gagić, Tešanović & Jovičić, 2013; Soriano, 2002; Cha & Seo, 2020). Due to the pandemic situation of COVID-19, competition among restaurants has become increasingly fierce, while each restaurant strives to find new ways to maintain and expand its services to customers. The effects of COVID-19 have led to changing lifestyles and consumption patterns among customers, such that some restaurants were required to close down due to the loss of regular customers and the necessity to conform to new governmental safety regulations (e.g. limited dine-in seats for customers). One of the most popular and important solutions for restaurants was to sell food via online platforms, helping to maintain service to current customers while also providing an avenue to reach out to new groups of potential customers via food delivery applications.

The main focus of this study was an analysis of customer satisfaction with food delivery services in terms of menu variety, food quality, and service efficiency, and evaluation of how these factors affect the users' satisfaction with the restaurant. Moreover, emerging new research studies have highlighted the importance of the above-mentioned factors used in the study. During the situation of COVID-19, the important factors affecting customer satisfaction were different from during the pre-COVID period (Ali, Khalid, Javed & Islam, 2021; Hwang & Kim, 2021; Jia, Raeside, Redfern, Gibson,

Singleton & Partridge, 2021). In addition, the study attempts to dissect the relationship between customer satisfaction and their perceptions of the value of food delivery applications.

The global food delivery industry was estimated by Frost & Sullivan to be worth \$82 billion in 2018, which is expected to double by 2025, with a cumulative growth rate of 14% (Singh, 2019). Analysis of a market study by Technavio predicts that the food delivery industry will develop rapidly and grow at a CAGR of close to 32% by 2021 (Technavio, 2017). In 2019, Google announced that it had developed the interface capability to order food directly via its various services: Google search, Maps, and Google assistant (Frederic, 2019). This is not to say that Google is stepping into competition with other food delivery platforms, but more that it had created partnerships with restaurants and delivery platforms to provide easier ways for users to connect to these services. However, in a study on customer loyalty to food delivery services, McKinsey found that most people rarely switched their chosen food delivery platform despite intense competition in the industry (McKinsey, 2016).

Globally, major investors seem to be very positive towards the industry. For Thailand's food delivery industry, it is estimated that by the end of 2022, the value of food delivery services is estimated to be 7.9 billion Thai Baht (The Nation, 2022). In 2018 alone, up to \$9.6 billion was pumped into the major food delivery companies, with

Asia receiving 60% of the total investment funds. This also aligns with other statistics showing that the bulk of the revenue from food delivery is in Asia, particularly China with a revenue of \$34 billion in 2018 (Singh, 2019), and \$40 billion in 2019 (Statista, 2019). Data from Statista (2019) shows that the revenue from platform-to-consumer delivery exceeded restaurant-to-consumer delivery in 2019 with a market volume of US\$53.786 billion. More people order food through a platform than from a restaurant, with this number increasing rapidly, in sync with technology progression. More than a third of the users of food delivery services (37%) are in the age range of 25-34, a statistic which holds true in Thailand (Statista, 2019).

Many entrepreneurs are entering the food business, while there are also likely be more in the future (Tajvidi & Tajvidi, 2020). The competition is intense, and restaurant owners must adapt to the changing business environment, partnering with food delivery application platforms to survive. In recent times, an important problem for restaurants has been the increasing number of restaurants competitively striving to offer more online food delivery services, while food delivery platforms have been required to creatively offer new promotions and services to increase the satisfaction of customers and enhance user loyalty (The Nation, 2022).

In this research a quantitative questionnaire was distributed to users of online food delivery applications,

such that the results of the study could support restaurants and food delivery platform managers to improve their understanding of how to better satisfy their customers and see their businesses thrive. The main factors addressed in the questionnaire were menu variety, quality of food, and satisfaction with the delivery service as these factors were highlighted in recent research studies after the commencement of the COVID-19 pandemic, including the scholarly works of Ali, Khalid, Javed & Islam (2021), Hwang & Kim (2021), and Jia et al. (2021). The three parameters were combined to arrive at a user's perceived valuation of a food delivery application and their consequent satisfaction with an associated restaurant. The research from Suhartanto et al. (2019) also supported the hypothesis that food quality and delivery service affected users' satisfaction with a food delivery application and associated restaurants. Another study from Biomy et al. (2019) affirmed the importance of menu variety in online customer satisfaction with a delivery service.

2. LITERATURE REVIEW

Before the COVID-19 situation, several research studies investigated the factors affecting customer satisfaction by using the concept of the SERVQUAL model and services marketing mix (7Ps: product, price, place, promotion, people, process, and physical evidence) (e.g. Yüksel & Yüksel, 2003; Stank, Goldsby &

Vickery (1999); Sudari, Tarofder, Khatibi & Tham, 2019). The effects of the above mentioned factors have been confirmed to influence customer satisfaction. However, due to the unusual situation of COVID-19 and the changing consumption patterns in the food industry due to COVID-19, customers have adopted new ways of accessing food services, with food companies, restaurants, and food delivery applications striving to have a better understanding of these new consumption patterns and new factors influencing customer satisfaction in the context of restaurants. Therefore, the factors of menu variety, delivery quality, perceived value, and food quality, were selected as important factors in examining consumers' responses to the new COVID-19 situation (e.g. Cha & Seo; 2020; Saxena, 2020; Annaraud & Berezina, 2020; Shah et al., 2020).

2.1 Menu Variety

In the food delivery industry, the variety of food available from associated restaurants can be a key factor affecting peoples' choice of products and their preference for a certain platform. Users may switch to a different restaurant depending on what kind of food they want, but if the platform does not offer enough variety, the online shopper will find another platform that does. The menu variety can be used to grab the attention of a customer and can also affect how they perceive the food operations (Mccall & Lynn, 2008). Menu variety involves several

different elements including the quality of the food; restaurants should regularly change their menu to stimulate customer interest (Namkung & Jang, 2007). Other studies have demonstrated that menu variety is one of the main factors influencing a customer's choice to revisit a restaurant (Soriano, 2002).

There are innumerable types of menus and the number of choices on each varies widely from restaurant to restaurant. Some may focus on only a few dishes or specialize in a certain type of cuisine. This will affect the delivery order as the customer might need to order multiple times from different restaurants. Stacking orders like that can add extra effort and cost for the customer. In this research, menu variety refers to the number of different menus provided for customers to choose from as well as the number of items on each menu. Based on these premises, it can be expected that there will be a relationship between menu variety and the perceived value of a food delivery application. Many researchers have studied this question and found evidence in support of a strong link between variety and customer satisfaction (Gupta, 2019; Saxena, 2020; Song et al., 2017). This led to the first hypothesis:

H1: Menu variety has a significant relationship with perceived value.

Furthermore, menu variety should also have a direct significant relationship with restaurant satisfaction. This idea is supported by

the investigations of Rozekhi et al. (2016) and Biomy et al. (2019), who found that an increase in menu variety directly enhanced customer satisfaction with a particular restaurant. This led to the second hypothesis:

H2: Menu variety has a significant relationship with restaurant satisfaction.

2.2 Food Quality

Good food quality is the *sine qua non* of the food business. It not only affects the success of a restaurant, but also the food delivery application that has partnered with that restaurant. Research from Grunert (2005) showed that customers' perception of food quality strongly affects their likelihood of continuing to order from a particular food service. The food business is very competitive worldwide; one of the popular means to stand out from the crowd is by offering unique, high-quality food. This can include many things such as locally-sourced ingredients, unusual combinations, ethnic recipes, and much more. The research of Cardello (1995) showed that food quality had practically unlimited dimensions, while different consumers respond differently to particular food qualities. The main goal is to satisfy expectations and provide a pleasurable dining experience. This will determine whether the consumers are happy with the food or not.

The perception of food quality has important effects beyond

satisfaction with a certain restaurant, as it also influences the choice of food delivery application. The food delivery application might need to consider more carefully which restaurants to partner with on their platforms. There have been some studies showing a significant relationship between food quality and food delivery (Annaraud & Berezina, 2020) (Suhartanto et al., 2019). This led to the third hypothesis:

H3: Food quality has a positive effect on perceived value.

Customer satisfaction influences not only the food delivery application but the restaurants themselves who may be directly affected by customers' ideas about which restaurants provide them with good food or not. The research from Al-Tit (2015) and Namkung and Jang (2007) emphasized the positive effect of food quality on restaurant satisfaction, leading to the fourth hypothesis:

H4: Food quality has a positive effect on restaurant satisfaction.

2.3 Delivery quality

This is a measure of the overall quality of the delivery service including the call center customer service—the ability to deliver ordered food accurately and maintain its quality in transit. There are often problems with delivering the wrong order or with food spills from improperly sealed containers. If the food order is incorrect, the call center

must make things right with the customer quickly or risk dissatisfaction or cancellation. A study by Snellman and Vinhtkari showed that the customer complaint barrier was lower for technology-based services, and that a delivery platform must be able to resolve a complaint quickly (Snellman & Vinhtkari, 2003). Timely, accurate food deliveries and rapid complaint resolution are essential to ensure customer satisfaction with the delivery service platform and the restaurant. Guaranteeing the quality of food delivery should start when the delivery agent meets with the restaurant and inspects their operations for potential problems. Both the restaurant and the delivery agents must work together to ensure the accuracy, swiftness, and safety, of food delivery (Mathieu, 2002). In this study, delivery quality refers to the capability of the overall delivery process to ensure that the meals ordered online reach the customers quickly and with the same quality as from the restaurant; in the case that there is a problem, customer service must be able to respond skillfully and quickly.

Delivery quality is directly related to the food delivery application, as a customer always expects the same quality for every order, this expectation should be met, or the customer's satisfaction will be lower. These conclusions are supported by the research of Dholakia and Zhao (2010) and Jeon et al. (2016), which confirmed the positive effect of delivery quality on the

perceived value of a food delivery application. This led to the fifth hypothesis:

H5: Delivery quality has a positive effect on the perceived value of a food delivery application.

Customer satisfaction with the delivery service is also related to satisfaction with the particular restaurant's meal offerings, appealing presentation, and quality. Conversely, the delivery quality can also affect the quality of the food in the meals ordered from the restaurant. Delivery delays or spillage can cancel all the care that a restaurant has put into ensuring that the delivered meals are just as good as those from the restaurant. The customer might realize that it was a delivery fault, or they might blame the restaurant, but either way, the result is low satisfaction. This is supported by the studies of Annaraud and Berezina (2020) and Suhartanto et al. (2019), which demonstrated the positive effect of delivery quality on restaurant satisfaction. This led to the sixth hypothesis.

H6: Delivery quality has a positive effect on restaurant satisfaction.

2.4 Customer Perceived Value of Food Delivery Application

There are many different food delivery applications available for smartphone download. Although they provide similar services such as online food selection and ordering,

they can have some unique selling points. Some food delivery applications are more user-friendly or just easier to use while others are highly rated for customer service. All of these features can contribute to user satisfaction with the food delivery application and mobilize intentions for repeat purchases. If the satisfaction level is low, however, customers will quickly switch to one of the other platforms. Many studies demonstrated how the quality of the food delivery service affected overall satisfaction with a particular application (Gagic et al, 2013; Ghezelbash & Khodadadi, 2017; Ladhari et al., 2008; Ryu, 2010). In one study on the perceived value of a food delivery application, it was found that user convenience, website design, trustworthiness, and a large variety of food choices had strong positive effects on users' gratification with the service (Cho et al., 2019).

The higher the perceived value of an online food delivery application, the stronger the likelihood that a customer will continue to use it (Cho et al., 2019). Apart from the application itself, the customer's perceived value of the food delivery service is directly linked to the restaurants, as the appeal of the food is really at the core of the enjoyment, driving sales and repeat business (Liat et al., 2017). Put another way, Shah et al. (2020) explained that a customer's valuation of a food delivery application is based on utilitarian, hedonic, and social factors, which all combine to stimulate purchase intentions.

In this investigation, the perceived value of the food delivery application is defined as the sense of gratification that users feel towards the platform itself, its ease of use, friendliness, great choice of meals, and timely delivery.

This study was developed to clarify how the perceived value of a food delivery application positively affects restaurant satisfaction. Given the existence of a significant relationship, restaurants must carefully choose their partnering platform, as this will directly affect customer satisfaction. The investigations of Cha & Seo (2020) and Liat et al. (2017) revealed a positive relationship between the perceived value of a food delivery application and restaurant satisfaction. This led to the seventh hypothesis:

H7: The perceived value of food delivery applications has a positive effect on restaurant satisfaction.

2.5 Restaurant Satisfaction

Satisfaction is mainly based on the quality and variety of the food received by the customer. It can overlap with the quality of the delivery process, as the ease of ordering and the quick and accurate delivery process ensures that the meals delivered to the customer have the same quality as they would in the restaurant. Similarly, restaurants must take care that their meals are packaged appropriately so that they reach the customer in good condition and

provide the utmost enjoyment and comfort. Having well-trained staff for the packaging process is essential for maintaining the highest satisfaction level. There is also research from South Africa that describes how different types of packaging significantly affect consumers' perceptions of the quality (Venter et al., 2011). Another studies showed that order accuracy was one of the main sources of satisfaction for the fast-food restaurant, Hamburger Chain (Kabir, 2016). Grocery stores can also use mobile applications for customers to order food for pickup, resulting in enhanced satisfaction with this service option (Kulkarni, 2009). Generous portion size is yet another factor promoting user satisfaction (Hartwell et al., 2007). In this research, restaurant satisfaction refers to the feelings of fulfillment that customers experience from their dealings with a particular restaurant and their approval of the ordering and delivery platform associated with the

restaurant in connection to whether it met or exceeded their expectations.

3. CONCEPTUAL FRAMEWORK

Figure 1 showed the study's conceptual framework, indicating the relationship between all constructs and the hypotheses as described above.

3.1 Population and Sampling

The questionnaire design was developed by reviewing and adapting questions from previous research studies. A Google form was used as the means to collect data, while completed questionnaires were collected from the online community of customers using food delivery applications at least once within six months. Moreover, before responding to the questionnaires, all participants were required to pass screening questions in order to establish whether they understand and are familiar with

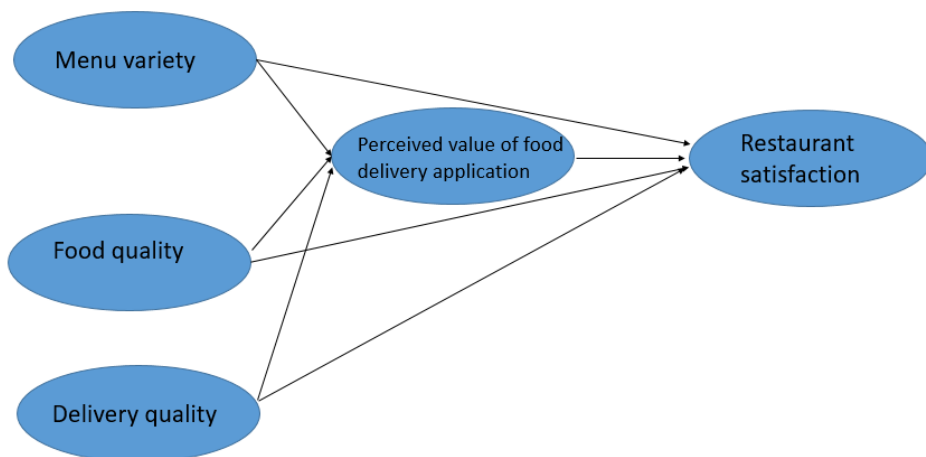


Figure 1 The Conceptual Framework

the food delivery application as all respondents must have experience with the food delivery applications. The screening questions were adopted to ensure that the respondents had adequate experiences with the food delivery application to provide answers which were valid and could be used for data analysis. There were 411 respondents, 18 years and older, living in the Bangkok metropolitan region. Bangkok is the capital city of Thailand and is famous for its variety of food, both Thai and international. Data were tested with a reliability analysis and convergent and discriminant validity to ensure that it was well-suited for further analysis. To test the hypotheses, structural equation modeling (SEM) was conducted to simultaneously investigate the relationships between all factors in the model.

4. RESULTS

The respondents consisted of 55.23% male and 44.47% female. The 31-40-year-old age group was the largest at 35.55%, followed by 41-50-year-olds (25.33%), 21-30-year-olds (20.12%), and 51 years and older (19.00%). Among the respondents, 75.68% had a Bachelor's degree, 12.20% had a Master's degree or higher, while 12.12% had only completed high school. All participants had installed the food delivery applications and had been using them for the past six months.

To confirm the validity of the data, it was tested for convergent and discriminant validity, where it was found that the values of AVE were >0.5, meaning that the convergent validity criterion was met. In addition, for all constructs, the square roots of AVE were higher than the squared

Table 1. Item Loadings on Related Factors

Item/Factors	Standardized Loading	AVE	Composite Reliability	Cronbach's alpha
Menu (MENU)		0.681	0.721	0.840
MENU1- I tend to order food online from a restaurant that has more menus.	0.74			
MENU2 - I prefer a restaurant that has many sizes of food I can choose from.	0.832			
MENU3 - I prefer a restaurant that has many types of food I can choose from.	0.838			
MENU4 - I prefer an online food delivery application that has many restaurants and menus to choose from.	0.822			
MENU5 - New menus are attractive and can motivate me to make a purchase.	0.886			

Table 1 (Continued)

Item/Factors	Standardized Loading	AVE	Composite Reliability	Cronbach's alpha
Food Quality (FQ)		0.690	0.727	0.865
FQ1 - The ordered food is accurate.	0.756			
FQ2 - The quality of ordered food is well-maintained.	0.881			
FQ3 - The food has sealing or measures that prevent contamination.	0.849			
DQ – Delivery quality		0.698	0.734	0.893
DQ1 - The delivery time is appropriate and reasonable.	0.771			
DQ2 - The delivery time is reliable.	0.865			
DQ3 - It is easy to contact the delivery personnel in case of changing orders.	0.866			
The perceived value of the food delivery application (PVFDA)		0.697	0.733	0.891
PVFDA1 - I accomplished just what I wanted to do with the food application.	0.838			
PVFDA2 - Based on all my experiences, my attitude toward the food application was positive.	0.838			
PVFDA3 - Dining through the food application helps me to express myself.	0.799			
PVFDA 4- Dining through the food application improves the way I am perceived.	0.874			
PVFDA 5 - Dining through the food application makes a good impression on other people for me.	0.824			
Restaurant satisfaction (SATRES)		0.667	0.710	0.871
SATRES1 - I am satisfied with the food size.	0.839			
SATRES2 - I feel pleasurable with the food from this restaurant.	0.854			
SATRES3 - I am satisfied with the packaging from the restaurant	0.818			
SATRES4 - I am satisfied with the overall performance of the restaurant.	0.885			
SATRES5 - I have a positive experience with the restaurant.	0.785			
SATRES6 - The food from the restaurant is better than I expected.	0.709			

correlation, as indicated in Table 1, meaning that discriminant validity was achieved (Fornell & Larcker, 1981). The results from the measurement model showed the following fit indices: IFI = 0.987, NFI = 0.964, NNFI = 0.985, Chi-squared/df = 1.521, thus demonstrating a good fit of the proposed model in this study. Hair et al. (2006) noted that it was important to determine validity before testing a structural model. Anderson and Gerbing (1988) proposed that convergent validity was acceptable when the values of standardized factor loadings were over 0.60. In addition, Cronbach’s alpha reliability analysis showed that the constructs in the study were >0.7, indicating acceptable reliability (Cronbach, 1951; Tavakol & Dennick, 2011).

For the criteria of the fit indices,

the values of CFI, NFI, NNFI, and IFI, should be greater than 0.9, while the value of RMSEA should be less than 0.08 (Hair et al., 2006). Furthermore, as AVEs should be more than 0.5 and the standardized factor loading above 0.6, the AVEs presented in Table 1 ranged from 0.667 to 0.697, showing acceptable convergent validity (Hair et al., 2006).

The fit indices of the proposed model are demonstrated in Table 3; the Chi-squared/df, NFI, CFI, and RMSEA, all met the expected criteria for good model fit.

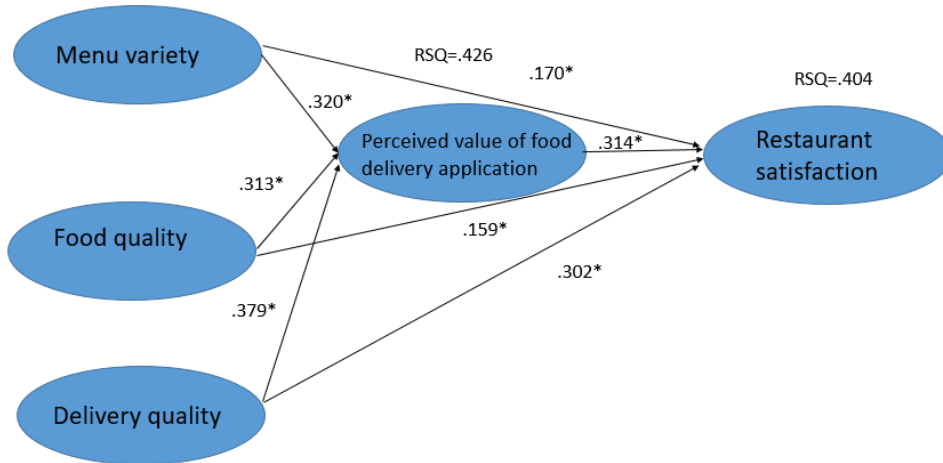
As shown in Figure 2, with the coefficients of the relationship from the proposed model, the perceived value of the food delivery application had the greatest effect on restaurant satisfaction, followed by delivery quality, menu variety, and food quality.

Table 2. Correlation Coefficient Matrix and the Square Roots of AVEs.

Items	MENU	FQ	DQ	PVFDA	SATRES
MENU	0.825				
FQ	0.486	0.830			
DQ	0.354	0.412	0.835		
PVFDA	0.412	0.517	0.517	0.835	
SATRES	0.331	0.423	0.424	0.483	0.817

Table 3. Model Fit Indices (Structural Model).

Fit Index	Model Value	Criterion
Chi-squared/df (302.755/199)	1.521	< 3
Normed fit index (NFI)	0.964	>0.900
Non-normed fit index (NNFI)	0.985	>0.900
Comparative fit index (CFI)	0.987	>0.900
Incremental fit index (IFI)	0.987	>0.900
Root mean square error of approximation (RMSEA)	0.036	<0.08



Note: RSQ = R-squared

Figure 2 The Structural Model and Associated Path Coefficients

Table 4. Summary of Hypothesis Testing

Hypothesis	Findings
H1: Menu variety has a positive effect on the perceived value of food delivery applications.	Supported
H2: Menu variety has a positive effect on restaurant satisfaction.	Supported
H3: Food quality has a positive effect on the perceived value of the food delivery application.	Supported
H4: Food quality has a positive effect on restaurant satisfaction.	Supported
H5: Delivery quality has a positive effect on the perceived value of the food delivery application.	Supported
H6: Delivery quality has a positive effect on restaurant satisfaction.	Supported
H7: The perceived value of the food delivery application has a positive effect on restaurant satisfaction.	Supported

Table 4 provides the overall summary of the hypothesis testing, showing that all proposed hypotheses were supported by the findings.

5. DISCUSSION

One contribution of this study is that it highlights and confirms the importance of the perceived value of

food delivery applications, their delivery quality, menu variety, and lastly food quality, as all of these factors were found to have a significant influence on restaurant satisfaction. Most previous studies appeared to merely focus on the general service quality and the marketing mix.

The results of this study showed

a significant relationship between menu variety and the perceived value of a food delivery application. Food delivery applications providing the greatest menu variety are the ones that better satisfy their customers. This factor reflects the variety of restaurants partnered with the food delivery application. If there are too few menu items for customers to choose from, then their satisfaction with the food delivery application will decrease. The results of Gupta (2019), Saxena (2020), and Song et al. (2017) also supported this conclusion, confirming the significant impact that menus have on food delivery applications.

The research results also indicated that menu variety was significantly related to restaurant satisfaction. The report from Biomy et al. (2019) found a significant positive relationship between menu variety and customer satisfaction with a particular restaurant. Rozekhi et al. (2016) also affirmed the direct influence of menu variety on customer satisfaction with restaurants. Restaurants which provide greater menu variety have happier customers.

As the results demonstrated, food quality has a positive effect on the perceived value of food delivery applications. This means that if customers do not like the quality of the food they receive, they are likely to also feel dissatisfied with the food delivery application. Thus, the restaurants' quality-control standards have a direct impact on customers' loyalty to the particular food delivery application. Food delivery

applications must therefore work with the restaurants that want to be linked on their platform, to ensure they adhere to good standards of food quality, handling, and packaging, as poor food quality from the restaurants will also reduce customer satisfaction with the food delivery application. Similar conclusions were reached by Annaraud and Berezina (2020) and Suhartanto et al. (2019), who showed a significant relationship between food quality and the perceived value of a food delivery application.

Undoubtedly, people care about the quality of the food that they order from a delivery service. It is important for restaurants to control their quality of food, as it directly affects customer satisfaction. If the quality of the food is good, it is appealingly packaged, and arrives in good condition, then customers will be happy and want to continue using that restaurant. This conclusion is supported by the work of Al-Tit (2015) and Namkung and Jang (2007).

It is vital to have a good delivery process so that the application stays competitive in the difficult business of food delivery. Poor food quality equals low customer satisfaction. Dholakia and Zhao (2010) and Jeon et al. (2016), found that timely delivery was one of the most important drivers of customer satisfaction. Delivery quality thus affects both restaurants and applications. Therefore, both parties must work together to ensure that the best quality meals get to the customer quickly and in good condition.

The results of this study support

those of previous studies from Annaraud and Berezina (2020) and Suhartanto et al. (2019). A customer's satisfaction with a chosen restaurant depends on many things; if a delivery is late or the meal arrives in poor condition, the customer is not likely to be happy with either the application or the restaurant. The food might not retain the same quality as when dining at the restaurant because of the inevitable delay in getting it to the customer's home, but care should be taken to ensure the difference in quality is as small as possible. Restaurants must work together with delivery personnel to ensure the quickest, safest, and highest quality, delivery service for their customers.

The hypothesis regarding the relationship between perceived value and restaurant satisfaction was also supported by the work of Cha and Seo (2020) and Liat et al. (2017). Users who are satisfied with a food delivery application are also more likely to be happy with the meals they receive from restaurants that are linked to the application. This makes it essential for restaurants to carefully choose the platforms that they want to be featured on. If the food delivery service is inadequate, it will lower customer satisfaction with the restaurants.

Regarding the concepts and context of the study, the perceived value of food delivery applications is crucial for customers to be satisfied. Therefore, application developers should continue to promote and offer new and added services, helping customers to gain greater value from using an application. Furthermore,

offering greater menu variety and on-time quality delivery service is crucial, as a key performance indicator for both application managers and restaurant managers. In addition, restaurant managers and owners should focus more on the quality of food materials and the preparation of food to provide the highest possible food quality for the customers.

6. CONCLUSIONS

It is evident that mobile application based food delivery services have become increasingly important, with a large number of well-known restaurants joining various mobile food application services. The current research achieved two objectives. Firstly, it was shown that the perceived value of a food delivery application, the delivery quality, food quality, and menu variety, positively affected restaurant satisfaction. Second, the findings indicated that the perceived value of a food delivery application had the greatest influence on restaurant satisfaction. Other influential factors were delivery quality, menu variety, and food quality, in order of importance.

7. RECOMMENDATION AND DIRECTION FOR FUTURE RESEARCH

This research provides several practical recommendations for business practitioners. Firstly, prioritizing the value of the benefits of

an application is expected to have the most significant influence on restaurant satisfaction. In this case, well-placed advertising and promotions for the food application on social media and elsewhere, can help support restaurant satisfaction. Restaurant managers and food application developers should raise awareness of the benefits of establishing a presence on social media, such as YouTube and Facebook. Secondly, delivery quality has a positive effect on restaurant satisfaction. Therefore, training and monitoring of delivery staff and promoting careful, timely food delivery can help to maintain delivery quality and competitiveness. Thirdly, menu variety demonstrated a strong positive influence on satisfaction. Thus, restaurants should always try to introduce new menu items and promotions monthly or quarterly to stimulate customer interest in new tastes and types of food. Lastly, food quality is also important for satisfied customers, so focusing on fresh, locally sourced foods, perhaps with organic ingredients, creatively prepared with attention to detail, can help to make a restaurant a leader in terms of customer satisfaction.

The application of the results is somewhat limited by the fact that this was a cross-sectional study, and therefore its general application may be low. In addition, the food delivery applications used at the time of the study may not represent future food applications as new food ordering and delivery applications are being developed and introduced to the food

market regularly. Future research should focus on a broader group of respondents in a range of contexts or incorporate other countries to improve the cross-cultural generalizability of the research findings. Further, qualitative research with in-depth interviews and focus groups could be done to provide a more in depth understanding of the contribution of each study factor in relation to other factors. In addition, more factors may be introduced in future research, such as customer loyalty to the food delivery application or specific restaurants.

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