

Continuous Intention to Use Technology of Online Food Delivery Services Among Young Adults

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Abstract

Online food delivery services have experienced tremendous growth in the food industry. Food delivery apps had gathered this opportunity adjusting to restaurant and food delivery services as an alternative to increasing income and for customers to remotely order their foods. This study aims to determine the relationship between information quality, performance expectancy, effort expectancy and social influence with continuous use intention of food delivery apps from Malaysian young adults' context. In this study, a total of 300 sets of questionnaires were successfully collected. The data was interpreted using SPSS Version 25. At the end of the study, it was found that the results of the analysis to be a positive relationship between information quality, performance expectancy and social influence with continuous use intention of food delivery apps among young adults. This study also revealed that social influence as the most influential factor affecting continuous use intention of food delivery apps.

Keywords: Online Delivery Food Apps; Consumer Behavior; Technology Acceptance Model.

Introduction

Southeast Asia has a wide demand for food delivery market. Although the food market is a trillion dollar industry, a small fraction of this industry is the distribution sector (Rahman et. al., 2020; Azmi et. al., 2018). It provided a major opportunity for growth in the future. It is expected that the food delivery industry in Malaysia to increase to annual revenue of USD 956 million by the year 2022 which proves as one of the fastest growing food market sectors (EC Insider, 2018).

There is an exciting new wave inside Malaysia's food and beverage industry, which is the online food delivery service. The latest dining out is not only limited to take-away and dine out but also online food ordering. Food delivery companies are growing in Malaysia by conducting many online food delivery services (Jeon et. al., 2016). Among the businesses is FoodPanda, the first aggressively developed delivery business in Malaysia (Chai, 2019). Other online delivery food service providers in the Malaysian market include SuperRider.my, DeliverEat, GrabFood, Honestbee, Running Man Delivery, FoodTime, Dahmakan, Mammam, Shogun2U. There is an emerging new within Malaysia's food and beverage industry. These food delivery companies are mostly focused in metropolitan cities that are located at Kuala Lumpur, Klang Valley, Penang and Johor Bahru.

In recent years, many people are turning to food delivery as well as the opportunity to discover more restaurants which offer food delivery services (Karamshetty et. al., 2020). Online food delivery services are a convenient option during a busy day of work. Many choose this kind of food delivery, as it helps them to have fresh and healthy food in their offices or homes while they are free to continue doing their work. This is also an advantage because customers can use online food delivery services after a long day at work, preferring to go home and relax rather than spending a few more hours waiting for food or driving to restaurants and then having something to eat.

Online food delivery services provide convenience and time-savings for customers as they can purchase food without going out of their homes or offices. Hence, online food delivery services have slowly but steadily effect on the food and beverage industry due to their ability to grow the business, achieve better employee performance, deliver order accuracy and develop valuable customer databases (Moriarty, 2016). Continuous enhancement of

online food delivery services are conducted by academicians, marketers and retail industries with the intent to enlarge the number of users and at the same time to minimize costs (Prasetyo et. al., 2021).

This study adds to previous studies by defining factors influencing the continuous use intention of people to use online food delivery apps. The study focuses on food delivery apps as a restaurant marketing tool, and analyzes continuous use intention in online food delivery services. The results provide valuable research information that could lead to marketing strategies for restaurant and food service providers.

Recently, with the increased purchasing power and different lifestyles, the demand of customers for the online food ordering method is increasing significantly. Most of the food purchase process will be done through online during this digital era and customers are too busy to go to the restaurants and wait in long queues (Putit et. al., 2016; Androit Market Research, 2019). In addition, they estimated at USD66.3 million in 2017 for Malaysian online food delivery market size. The emergence of this phenomena has been recorded in the past studies focusing on online food delivery which frequently stated that by having restaurant come to customer is convenience the (Saad, 2020; Mahfuz, 2019; Hashim et. al. 2015). This factor will drive Malaysia's online food delivery market, which is expected to grow at a rate of 18.6% from a period of time between 2018 to 2025 as shown in Figure 1.

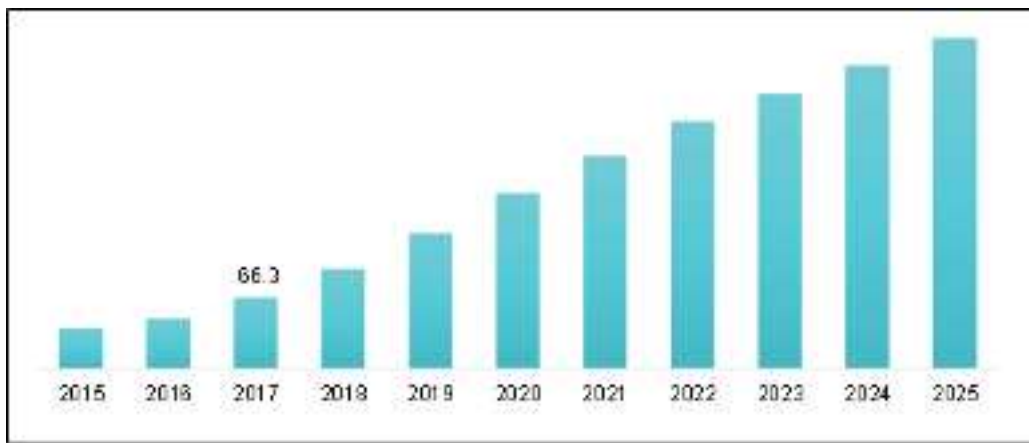


Fig.1 Malaysia Online Food Delivery Market, 2021-2025 (USD Million)
(Source: Androit Market Research, 2019)

In online food service industry, the existence of various companies such as Foodpanda, DeliverEat, GrabFood, Honestbee, DahMakan, and others is an interesting mix because those companies are constantly competing with non-traditional strategies (Muhammad et. al. 2019), such as the link to exclusive cuisines in restaurants and providing real-time food preparation status (Dazmin and Ho, 2019). However, food delivery apps have several drawbacks that lead to customer frustration or complaints.

The major frustration of food delivery apps users was that food is not delivered warm or fresh and food was delivered late (Zhu et. al. 2020; Denissen et. al. 2017; Wyse et. al. 2019; See-Kwong 2017). Apart from that, there were other issues of incorrect orders or restaurants did not take particular special instructions (Lee et. al. 2016; See-Kwong 2017; Reddy & Aradhya 2020). The issue of frustration caused by inconsistent prices (Tong et. al. 2020; Chin & Goh, 2017). Moreover, the problems arose by food being shaken during delivery and customers were upset with inconsistent or limited menus (Gunden et. al. 2020; Pappas 2017). As we can see these issues may lead to critical problems as it would directly impact the continuous intention of customers to use food delivery apps.

Therefore, the purpose of this study is to examine which attributes of food delivery apps that include information quality, performance expectancy, effort expectancy and social influence contribute the most towards continuous use intention among young adults. In addition, this study will be extended from the related past studies of (Lee et. al. 2019) that had measured the determinants of customers' continuous use intention on food delivery apps.

Literature Review

The design of the study adapted the modified technology acceptance model (TAM) as a base to describe the acceptance of the online food delivery as convenient platform to improve quality of life (Lee et. al. 2017; Fauzi 2019; Troise et. al. 2020). Table 1 describes the definition of each elements in this study.

Table 1: Element Definition

Variables		Definition
Independent	Information Quality	described as ‘the existing online content that is comprehensive, customized, appropriate, secure and easy for consumers to understand’ (Shah et. al. 2020; Lee et. al. 2019; Fauzi 2019)
	Performance Expectancy	described as ‘the degree to which the use of a technology can bring benefits to consumers in certain activities’ (Muangmee et. al. 2021; Gupta & Duggal 2020; Lee et. al. 2019; Fauzi 2019; Oliveira et. al. 2016).
	Effort Expectancy	defined as ‘the degree of ease associated with the use of the system’ (Muangmee et. al. 2021; Lee et. al. 2019; Fauzi 2019; Venkatesh et. al. 2003)
	Social Influence	referred as ‘the degree to which consumers perceive that important others (e.g. family and friends) believe they should use a particular technology (Muangmee et. al. 2021; Lee et. al. 2019; Fauzi 2019; Venkatesh et al. 2012).
Dependent	Continuous Use Intention	described as ‘the desire to continue purchase as if customers had again made an attempt to buy the same brand, products or services’ (Lee et. al. 2019; Fauzi 2019)

This conceptual framework of modified Technology Acceptance Model (TAM; Davis, 1989) is adapted to investigate the relationship between food delivery apps attributes and continuous use intention. From this proposed framework it is defined by four attributes of independent variables that consists of information quality, performance expectancy, effort expectancy and social influence that determined by the dependent variable of continuous use intention on food delivery apps. Hence, the dimensions of information quality, performance expectancy, effort expectancy and social influence act as important factors in influencing continuous use intention of online food delivery apps among young adults as per illustrated in Figure 2.

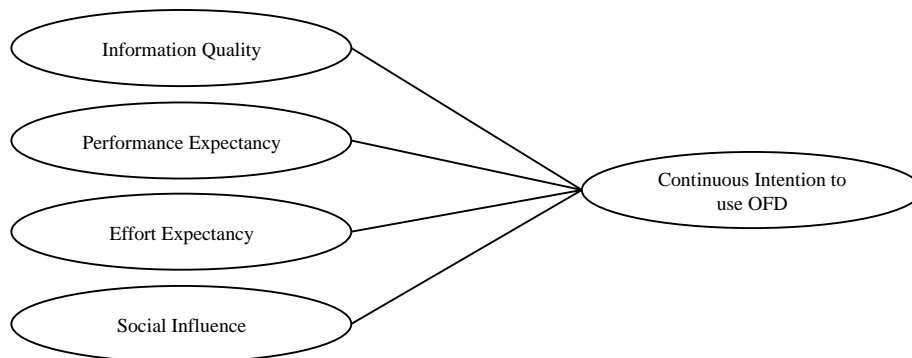


Fig 2 Modified TAM of Continuous Intention to Use Online Food Delivery Apps

Methodology

With the continuous use intention as a dependent variable, the target population in this study is focusing on the respondents that ordered their food using food delivery apps. Young adults might be referred to people at the range of age between 15 to 40 years of old (Sarah, 2021). The respondents were drawn from the population of young adults of *Data Asas Malaysia* ~ estimation of Malaysian population as per illustrated in Table 2 shows that the total estimation of young adults in Malaysia were 14,747,000 person (Department of Statistic Malaysia, 2019). Thus, based on sample size of population proposed by Krejcie & Morgan (1970) where the sample should be more than 384 person in order the to ensure the data gathered can be generalized to the larger population and the survey was administered using the simple random sampling technique (Banerjee & Chaudhury, 2010; Sekaran & Bougie, 2016; Hamdan et. al. 2018). The total of 600 survey with 7 point Likert’s scale format had distributed, but only 394 respondent (65.7%) was successfully collected and data were processed by using the SPSS 25.0 to outlined survey response rate, descriptive analysis, descriptive statistic, reliability analysis, correlation analysis and multiple regression analysis.

Table 2: Estimation of Malaysian Population in year 2016

Age Group Years	Urban			Sub-Urban			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0 – 14	2,912.3	2,737.1	5,649.4	1,087.2	1,026.7	2,113.9	3,999.5	3,763.8	7,763.3
15 – 40	5,784.0	5,335.8	11,119.7	1,975.8	1,651.4	3,627.2	7,759.8	6,987.2	14,747.0
41 – 64	2,834.8	2,733.2	5,567.9	841.5	826.9	1,668.3	3,676.2	3,560.1	7,236.3
65 and over	666.4	691.1	1,357.6	260.6	295.9	556.5	927.1	987.0	1,914.1
Totals person	12,197.5	11,497.2	23,694.7	4,165.1	3,800.9	7,966.0	16,362.5	15,298.2	31,660.7

(Source: Department of Statistic Malaysia, 2019)

Findings

A total of seven questions including gender, age, educational level, type of employment, monthly income, which food delivery apps most preferred and how frequently food delivery apps are used in a month were asked in the questionnaire to understand the demographic profile of respondents.

Table 3: Demographic characteristics

	n	%		n	%
1. Gender			5. Monthly Income		
Male	98	25%	Below RM1,000	274	70%
Female	296	75%	RM1,001 - RM2,001	65	16%
Total	394	100%	RM2,001 - RM3,000	20	5%
			RM3,001 - RM4,000	15	4%
2. Age			RM4,001 - RM5,000	11	3%
Below 20 years old	43	11%	Above RM5,001	9	2%
21 - 23 years old	240	61%	Total	394	100%
24 - 26 years old	76	19%	6. Most preferred food delivery apps		
27 - 30 years old	35	9%	FoodPanda	190	48%
Total	394	100%	GrabFood	156	40%
3. Educational Level			DahMakan	26	7%
SPM	17	4%	DeliverEat	7	2%
Pre-University program	20	5%	Super Rider	4	1%
Diploma/ Professional Cert	34	9%	Other	11	3%
Bachelor	288	73%	Total	394	100%
Master	35	9%	7. Frequency of using food delivery apps in a month		
Total	394	100%	1 - 2 times	200	51%
4. Type of Employment			3 - 4 times	136	35%
Student	274	70%	5 - 6 times	34	9%
Employed	93	24%	More 7 times	24	6%
Unemployed	27	7%	Total	394	100%
Total	394	100%			

Table 3 illustrated that the female respondents participated most in this study (75%), with the highest frequency of the respondents were in range of age 21 - 23 years old (61%), the respondent appeared to be the majority were pursued their study in the Bachelor's Degree (73%) and, the results presented shows that the majority income of the respondent were below RM1,000 per month (70%). It shows that FoodPanda was the highest food delivery apps most preferred (48%), followed by Grab Food and other apps. While, the frequency of using the apps were at the

range of 1-4 times in a month (85%).

The survey was thoroughly tested with the reliability and validity tests to ensure the items developed have sufficient coverage of the investigation conducted. This is important to ensure the respective questions were accurate and constructed relevantly to the research. The relevancy done by accessing the Cronbach’s Alpha value to ensure consistency of the items were archived. By referring the Yeo et. al. (2017), a value of 0.700 and above is the acceptable measuring value used for this study.

Table 4: Descriptive statistics for the variables

Element	Item	Mean	SD	Alpha	Corr.
Information Quality	Overall	5.86	0.69	0.858	0.442**
	Up-to-date information	5.95	0.84		
	Accurateness information	5.89	0.87		
	Believable information	5.88	0.82		
	Right level detail of information	5.71	0.91		
	Appropriate format	5.86	0.89		
Performance Expectancy	Overall	5.81	0.74	0.769	0.662**
	Apps useful in daily life	5.75	1.09		
	Apps increases chances to purchase food desired	6.01	0.91		
	Apps enables to accomplish quickly the purchasing process	5.89	0.94		
	Apps increases productivity	5.15	1.27		
	Save time when using food delivery apps	6.24	0.85		
Effort Expectancy	Overall	5.94	0.71	0.852	0.493**
	Learn to use apps is easy	6.10	0.86		
	Interaction with apps is clear and understandable	5.94	0.82		
	Apps are easy to use	6.06	0.80		
	Easy to become skillful using apps	5.97	0.84		
	Easier to redeem a voucher or reward in apps	5.60	1.10		
Social Influence	Overall	5.28	0.97	0.843	0.659**
	People who important think i should use the apps	4.98	1.38		
	People who influence think i should use the apps	4.92	1.31		
	People who opinion i value think i should use the apps	5.12	1.20		
	Current trends influenced my decision to use the apps	5.58	1.14		
	Mass media will influence my decision to use the apps	5.80	1.11		
Continuous Use Intention	Overall	5.47	0.93	0.851	1
	Always try to use food delivery apps in my daily life	5.34	1.31		
	Intend to continue using apps in the future	5.75	0.99		
	Plan to use food delivery apps frequently	4.67	1.42		
	Recommend to others to use apps in the future	5.89	1.00		
	Using food apps among my favorite technologies	5.68	1.08		

Table 4 also shows the value of mean and standard deviation of the respective factors. For the factor of Information Quality, the items that has the highest mean was the ‘Up-to-date Information’ with a value of 5.95 (SD = 0.84); the Performance Expectancy designed in the questionnaire. It was found the item with the highest mean is

‘Save time when using food delivery apps’ with a value of 6.24 (SD = 0.85); the Effort Expectancy designed in the questionnaire. It showed the item had the highest mean is ‘Learn to use apps is easy’ with a value of 6.10 (SD = 0.86); the social influence which designed in the questionnaire. The item which had the highest mean is ‘Mass media will influence my decision to use the apps’ with a value of 5.80 (SD = 1.11); and for dependent variable i.e. the ‘Continuous Use Intention’ which designed in the questionnaire. The items which had the highest mean is ‘Recommend to others to use apps in the future’ with a value of 5.89 (SD = 1.00) and others were at acceptable mean and within the normal distribution range.

In order to examine the 20 measurement items related to the continuous intention to use online food delivery services, the data were correlated between the variables. The values were found to be significant with moderate relationship between the variables.

Table 5: The Relationship of Elements and Continuous Use Intention of online food delivery

	Continuous Use Intention	Information Quality	Performance Expectancy	Effort Expectancy	Social Influence
Continuous Use Intention	1				
Information Quality	.442**	1			
Performance Expectancy	.662**	.534**	1		
Effort Expectancy	.493**	.526**	.587**	1	
Social Influence	.659**	.310**	.611**	.435**	1
Sig.	.000	.000	.000	.000	.000
N	394	394	394	394	394

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

Based on the Table 5 which evidently revealed that information quality, performance expectancy, effort expectancy and social influence indicated the correlation value of 0.442, 0.662, 0.493 and 0.659 respectively. Therefore, there was a positive and moderate relationship between the four variables and continuous use intention. This has shown that information quality, performance expectancy, effort expectancy and social influence are moderately correlated with the continuous use intention. Furthermore, the lower the value of correlation, the weaker the relationship between variables and vice versa (Hair et al., 2007). Hence, performance expectancy (0.662) had the strongest correlation with continuous use intention, followed by social influence (0.659) and effort expectancy (0.493). However, information quality had the weakest correlation with continuous use intention, which was 0.442.

Table 6: Regression Analysis

Coefficients		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	-0.315	0.358	-	-0.880	0.380
	Information Quality	0.148	0.065	0.110	2.286	0.023*
	Performance Expectancy	0.395	0.072	0.315	5.452	0.000*
	Effort Expectancy	0.099	0.067	0.076	1.491	0.137
	Social Influence	0.384	0.047	0.400	8.097	0.000*
	R ²	.558				
	Adjusted R ²	.552				
	F	28.549				

Coefficient helps in examining which predictor element (Independent variables) exert the strongest influence on the dependent variable of the study. The strength of the relationship between independent variables and a dependent variable can be determined by the value in the column of the standardized coefficient beta. Based on Table 5, it stated that information quality, performance expectancy and social influence with p-value of 0.023, 0.000 and 0.000 respectively. This has shown that Information Quality [F(390)=28.549; β=0.110; p < 0.023], Performance Expectancy [F(390)=28.549; β=0.315; p < 0.000], and social influence [F(390)=28.549; β=0.400; p < 0.000] were

significant since ($p = 0.00 < 0.05$). However, for effort expectancy showed non-significant with p-value of 0.137 since ($p = 0.137 > 0.05$). From the values of the standardized coefficients beta, it appeared that social influence has the highest coefficient of .400 and followed by performance expectancy .315 and information quality .110. Lastly, effort expectancy was showed to had the lowest coefficient of 0.076. Thus, this has shown that social influence as the most influential factor towards the continuous use intention of food delivery apps. It is indicated that the variables of information quality, performance expectancy, effort expectancy and social influence had the R^2 of 0.558 where the continuous use intention (dependent variable) can be explained by the four independent variables. The remaining 44.2 percent can be explained by other factors that are not included in this study.

Discussion & Conclusion

From the results it is indicated that there is a significant relationship between information quality and continuous use intention confirm that the information quality of food delivery apps has associated significantly with continuous use intention among young adults. This is in-line with previous study with stated that the accuracy and feasibility of information was a significant indicator to enhance user to continuously use the apps (Fauzi 2019; Lee et. al. 2017; Hashim et. al. 2015; Lee et. al. 2016; Yeo et. al. 2017).

This study revealed that there is a significant relationship between performance expectancy and continuous use intention. Therefore, performance expectancy of food delivery apps has associated significantly with continuous use intention among young adults. The study conducted by Muangmee et. al. (2021) also found significant relationship between performance expectancy and intention to use online food delivery apps. The present study finding supports the previous study conducted by Shaw & Sergueeva (2019) that stated that consumers will form continuous use intention when they perceive the usefulness of delivery application services that include saving time, the speed of conducting a transaction, and the diversity of purchase opportunities.

It appeared that social influence has the most significant relationship with continuous use intention. Therefore, social influence of food delivery apps has associated significantly with continuous use intention among young adults. However, this study has shown contrasting results from Lee et. al. (2017) where they found peer were the most influential subject of consumer to continuously use the apps, but in this study it was found that the mass media was the factor of the respondents continuously use the online food delivery apps.

In conclusion, the importance of factors like information quality, performance expectancy, effort expectancy and social influence must be understood in order to lead customers to the continuous use intention of food delivery apps. Based on the findings of the study it is indicated that social influence, information quality, performance expectancy had a significant relationship with continuous use intention. Hence, food delivery companies have to prioritize in continuously ensuring that customers' intention to use food delivery apps are more effective and efficient according to technology advancement in the future. Furthermore, food delivery companies should stay updated to maintain their reputation and application features, as these are crucial to the long-term survival of a business.

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